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INTERNATIONAL ASSOCIATION
OF GERONTOLOGY AND GERIATRICS

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5-8 JULY, 2007 • SAINT PETERSBURG, RUSSIA

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INTERNATIONAL ASSOCIATION OF GERONTOLOGY AND GERIATRICS

VI EUROPEAN CONGRESS

HEALTHY AND ACTIVE AGEING FOR ALL EUROPEANS

In the framework of the United Nations Research Agenda on Ageing
for the 21st Century

**July 5–8, 2007
Saint Petersburg, Russia**

Organized by the Gerontological Society
of the Russian Academy of Sciences on behalf of the European Region
International Association of Gerontology and Geriatrics



Head Institution: Saint Petersburg Institute of Bioregulation and
Gerontology of the North-Western Branch of the Russian Academy
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e-mail: aging@mail.ru, anisimov2000@mail.ru

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WELCOME

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Programme on Ageing

Room DC2-1386, 2 United Nations Plaza, New York, New York 10017

Tel: 212 963-0500 Fax: 212 963-3062 e-mail: sidorenko@un.org

**Message of the UN Programme on Ageing
to the Participants of the Sixth European Congress of the International Association
of Gerontology and Geriatrics**

The United Nations Programme on Ageing is proud to be associated with the Sixth European Congress of the International Association of Gerontology and Geriatrics.

We see the theme of the Congress, Healthy and Active Ageing for all Europeans, as an extension of the central goal of international action on ageing in the twenty-first century: to respond to the opportunities and challenges of population ageing and to promote the development of a society for all ages. This goal was formulated by the representatives of one hundred fifty-five governments that participated in the Second World Assembly on Ageing in 2002 in Spain, and adopted the Madrid International Plan of Action on Ageing.

To support the implementation of the Madrid Plan of Action, the UN Programme on Ageing and the International Association of Gerontology and Geriatrics developed the Research Agenda on Ageing for the Twenty-First Century. The Research Agenda identifies priorities for policy related research and data collection. Simultaneously, it encourages researchers to pursue studies in policy related areas of ageing where the findings may have practical and realistic applications. It is therefore very pertinent that the Sixth European Congress of the International Association of Gerontology and Geriatrics is organized within the framework of the Research Agenda on Ageing.

The European experience on ageing is unique. While global ageing is occurring primarily in developing countries, Europe is and will be in the foreseeable future the oldest continent of our planet. As Europe led the world into the era of population ageing, it can also show the wisdom in dealing with its opportunities and challenges. This Congress will certainly help to advance the understanding of basic mechanisms of population and individual ageing. It is also expected to empower all interested parties with evidence for action on behalf of older persons in Europe. While exploring the various dimensions of European ageing, we must not forget about the older Europeans living beyond Europe of the privileged 27 member states of the European Union. The demographic situation in several post-Soviet countries is rightly identified as critical. The international research community has to mobilize its resources in order to find solutions to problems of accelerated ageing and depopulation in the Eurasian transitional countries.

It is very symbolic that our Congress is taking place in St. Petersburg — a «northern capital» of Russia, a world renowned cultural and scientific centre. Since its very establishment more than three hundred years ago St. Petersburg has been called by Russians «a window into Europe». Let us keep this window open wide.

On behalf of the United Nations Programme on Ageing —

Alexandre Sidorenko
UN Focal Point on Ageing

Dear colleagues!

On behalf of the Russian Gerontological Society we have the honor to welcome you at the VI European Congress of the International Association of Gerontology and Geriatrics.

Nowadays enhancing the efficiency of treatment, prevention and rehabilitation, health and social care for elderly people, further development of fundamental research in gerontology and geriatrics are burning issues of healthcare and medical science.

The global ageing of the population entails the need for further increase in the efficacy of treatment, prevention, rehabilitation and medico-social aid for the citizens of older age groups, as well as for the development of fundamental research in gerontology and geriatrics and advanced training of specialists.

We hope that a wide scope of subjects selected for the Congress allows scientists from different countries to share knowledge and recent breakthroughs in social, biological and clinical aspects of ageing as well as to focus on the most essential problems in the field of gerontology.

The VI European Congress of IAGG is undoubtedly a significant event for the scientific community and displays the role of Russia, since demographic situation, mortality rate reduction and health preservation presently attract the same extent of worldwide attention, as main political developments.

The fact, that such a prestigious Congress takes place in St. Petersburg, is a sign of recognition of the Russian gerontological science community and of the leading role of St. Petersburg in this field.

We are happy to welcome all participants of the VI European Congress of the International Association of Gerontology and Geriatrics in Saint Petersburg — a city of culture, science and arts.

Prof. Vladimir Anisimov

Congress President
President, Russian Gerontological Society

Prof. Vladimir Khavinson

Congress Vice President
Director, Saint Petersburg Institute
of Bioregulation and Gerontology

PLENARY AND KEYNOTE LECTURES

1. AGING AND AGE-RELATED DISEASES: THE ROLE OF GENETIC AND ENVIRONMENTAL FACTORS

V.N. Anisimov (*N.N. Petrov Research Institute of Oncology, St. Petersburg, Russia; aging@mail.ru*)

The incidence of main killers of humans at nowadays — cardiovascular diseases, cancer and diabetes type 2, increases with age in humans. The relationship between aging *per se* and these diseases is not clear. Some environmental factors (an exposure to environmental mutagens and carcinogens, high fat diet, exposure to light-at-night, etc) may lead to both accelerated aging and development of the age-associated diseases. At the same time, stochastic and genetically dependent age-related progressive changes in the internal milieu of the organism may provide an increasingly favorable microenvironment for the initiation of new neoplasms and for the growth of already existent, but latent malignant cells. In genetically modified mice models (transgenic, knockout or mutant) characterized by the aging delay the incidence of tumors is usually similar to those in controls, whereas the latent period of tumor development is increased. The majority of accelerated aging models in genetically modified animals show increased incidence and shorter latency of tumors. Strategies for cancer prevention must include not only measures to minimize exposure to exogenous carcinogenic agents, but also measures to normalize the age-related alterations in internal milieu. Life-span extending drugs (geroprotectors) may either postpone population aging and increase the latency of age-associated diseases or decrease the mortality in long-living individuals in populations and inhibit carcinogenesis. Some geroprotectors may increase the survival of short-living individuals in populations but increase the incidence of age-associated diseases.

2. GLOBAL AGING: AN INTERDISCIPLINARY PERSPECTIVE

T. Antonucci (*University of Michigan, Ann Arbor, USA; tca@isr.umich.edu*)

World demographics indicate that there will be 2 billion people aged 60 and over by the year 2050. An important goal, as WHO suggests, is to achieve active ageing i.e. optimizing opportunities for health, participation and security in order to enhance life quality. Aging has become a global phenomenon due to both world demographics and other factors such as immigration patterns and technological developments. This address will consider the importance of taking an interdisciplinary and life course approach to aging. It will consider how best to address the challenges of global ageing through prevention, intervention and rehabilitation. Suggestions will be offered for achieving this goal in a dynamic fashion that will address the needs of a society for all ages.

3. REDUCING RESTRAINTS IN LONG-TERM CARE

C. Becker (*Robert-Bosch-Krankenhaus, Stuttgart, Germany; Clemens.Becker@rbk.de*)

Physical restraints are defined as any limitation of freedom of movement using technical devices. The use of physical restraints is still used through out Europe. There are considerable regional disparities. The use of restraints is associated with severe side effects. The justification in most cases is the risk of falling and suffering a fall related injuries. Despite the controversy on the use of restraints there is only limited evidence that restraints can prevented or reduced. Only recently, some studies have been completed that have led to conflicting results. While some researchers have found that the education of nursing staff could reduce the number of restraints, comparable interventions in the Netherlands and Norway could not replicate these findings. The lecture will summarize the findings and present data from new intervention study that has evaluated the effectiveness of a multiple intervention to reduce physical restraints in long-term care residents with cognitive impairment. In this cluster-randomized intervention with 45 nursing homes and 364 restrained residents we examined the effects of a multifactorial intervention including education, technical aids, and back office advice on the reduction of restraints. The restraints could be removed in 21% of the intervention group (IG). The duration could be reduced by 24 % ($p=.02$). The duration of the use of mechanical restraints in the CG was reduced in IG vs. CG, $p=.001$. The intervention had no effect on the incidence rate of newly introduced restraints ($p=0.92$) and psychoactive medication ($p=0.99$). There was a slight increase in the number of falls. In summary, there is growing evidence that restraints in long-term care has deleterious effect and can be reduced. However, there is still the need to develop and test interventions that prevent or reduce the use of restraints without negative effects on psychopharmacology and injurious falls.

4. STEM CELLS IN NEURODEGENERATIVE DISEASE: STATE OF THE ART AND PERSPECTIVES

P. Brundin (*Lund University; patrik.brundin@med.lu.se*)

There is gradual neuronal loss in neurodegenerative disorders such as Parkinson's (PD), Huntington's and Alzheimer's diseases. In most cases the neuropathology develops slowly and is relatively restricted, leaving significant parts of the nervous system unaffected. Therefore they have become interesting targets for restorative therapies. One of the most exciting ideas for repair is the concept that one might be able to harness the adult brain's endogenous capacity for cell renewal. Thus, it might be possible to direct stem cells in the adult brain to migrate to the regions affected by the disease and there differentiate into

the specific types of neurons that die due to the disease. This concept is based on the realization that also the adult mammalian brain has the capacity to generate new neurons from stem cells. Specifically neurogenesis takes place in the hippocampus and in the subventricular zone. In this presentation, I will give examples of how neurogenesis is changed in models of the neurodegenerative diseases, and briefly discuss means by which it can be stimulated. In a second part of my talk, I will describe that transplanted neurons obtained from the brains of aborted human embryos can survive and exert beneficial effects in PD patients, and discuss if stem cells could future play a role in this research area. Results obtained open label trials with grafts of dopamine-producing neurons derived from the human embryonic ventral mesencephalon were very encouraging, whereas the data from two double blind placebo controlled trials were less so. They also showed that disabling dyskinesias may develop as an undesirable side effect of the procedure. Now there is a need for a novel source of immature dopamine neurons that can replace the use of ventral mesencephalic tissue from aborted embryos. A reproducible and inexhaustible supply of cells is necessary if systematic, large-scale clinical trials are to be conducted in the future. Probably stem cells could provide such a supply. I will describe research on stem cells from adult and embryonic sources. I will briefly describe how we try to tackle the two major challenges that face us. First, we need to obtain high numbers of dopaminergic neurons from stem cells and to make them retain their phenotypic features after grafting. Second, it is important to control cell division after the stem cell-derived neurons are transplanted, in order to avoid tumor/teratoma formation.

5. GERIATRIC PATIENTS: AGGIR SOCIOS PATHOS, A TOOL TO TAKE INTO ACCOUNT SPECIFICITY OF GERIATRIC PATIENT IN HOSPITAL FINANCING COMPLEMENTARY TO APRDRG

M.C. Closon (*Interdisciplinary Center in Health Economics, Universite de Louvain, Brussels, Belgium;*
closon@sesa.ucl.ac.be)

Most developed countries used case mix system (APRDRGs...) in order to define the prospective budgets of their hospitals. However these case mix are mainly based on main diagnosis and procedures and do not take into account the specificity of geriatric patients. AGGIR PATHOS SOCIOS (APS) is a tool developed by the French society of Geriatrics and Gerontology. It collects for each patient the dependency on 8 criteria (eating, coherence, orientation, dressing...), their pathological states and their care profile (vital, close and episodic medical supervision, psychiatric supervision, intensive and normal rehabilitation, palliative care...) and their social complexity. This tool allows describing the profile of geriatric units in term of dependency, pathological states, care profile, social complexity and the relative workload of the unit for the different health care professionals (physicians, nurses, psychiatrist, physiotherapists, occupational and speech therapists...). In Belgium, 77 geriatric units (1856 patients) collected the APS data of patients during two days in 2005. The analysis of the data showed that, according to APRDRG and severity, these specificities have an important and complemen-

tary explanatory power on length of stay and intensity of nursing, rehabilitation and physician care. Profile of care and social complexity has the bigger impact on length of stay. Therefore it will be important to take these specificities into account complementary to APRDRGs in hospital financing system and contact with hospitals in order to avoid adverse selection and decrease in quality of care for the geriatric patients.

6. PEPTIDES AND EPIGENETIC REGULATION OF AGEING

V.Kh. Khavinson (*St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia;*
khavinson@gerontology.ru)

Ageing is characterized by an intricate complex of molecular-genetic and biochemical alterations accompanied by disorganized peptidergic regulation of organism functions. Endogen peptides play an important role in the regulation of ageing. This fact points out the good prospects of the design and study of peptide geroprotectors. Presently the classical data reflecting the normalizing effect of peptides on age-related hormonal-metabolic and immune alterations are supplemented by new results of genome level studies of peptides. It was found, that peptides are capable of regulating gene expression and protein synthesis in cells. The study of peptides, such as Thymogen (Glu-Trp), Vilon (Lys-Glu), Epitalon 9Ala-Glu-Asp-Gly) and Cortagen (Ala-Glu-Asp-Pro) showed, that they are effective on gene expression in mouse brain and myocardium if administered *in vivo*. Transgenic mice treated with peptides showed a reliable 2-4-fold suppression of HER-2/neu mammary gland cancer gene expression, which correlated with reduced zone of adenocarcinoma. The administration of peptides to mice and rats increased the expression of IL-2 and *c-fos* genes in the lymphocytes and different hypothalamic structures. This accounts for immunomodulating, oncomodifying and stress protective properties of these substances. For the first time ever studies revealed the mechanisms underlying the geroprotective effect of small peptides, related to chromatin activation in older patients' blood lymphocytes. Treatment of human fibroblasts with peptide Epitalon induced telomerase activity and increased the mean length of telomeres by 2.5 times as compared to the control, which led to a 42.5% increase in the quantity of cell divisions, thus overcoming Hayflick's limit. The study of peptides effect on different genes expression and DNA synthesis in different experimental models prompted an assumption, that small peptides are activators and agonists of transcription factors. Complementary site-specific binding of a peptide with DNA major groove is a primary start signal for transcriptional factor binding with the promoter. Experiments revealed the tetrapeptide to form a complex with DNA double helix. Binding of the peptide with the double helix is accompanied by a hyperchromic effect, which points out local splitting of double helix strands, entailing the launch of protein synthesis in cells. Further study of peptides effect on epigenetic regulation of ageing opens new prospects for the development of the concept of peptide regulation of ageing, as well as for the design of effective geroprotectors.

7. DIMENSIONS OF FUTURE SOCIAL SERVICE PROVISION IN THE AGEING SOCIETIES OF EUROPE

G. Lamura^{1, 2}, E. Mnich², B. Bien³, B. Krevers⁴, K. McKee⁵, E. Mestheneos⁶, H. Doehner² (¹INRCA, Dept. of Gerontological Research, Ancona, Italy, ²University Medical Centre Hamburg-Eppendorf, Hamburg, Germany, ³Medical University of Bialystok, Poland, ⁴Linköping University, Sweden, ⁵University of Sheffield, Northern General Hospital, SISA, United Kingdom, ⁶Sextant Group /50+ Hellas, Athens, Greece; g.lamura@inrca.it)

The growing number of chronically dependent older people found in most European countries makes the provision of appropriate social care increasingly crucial for ensuring an acceptable quality of life in older age. This is relevant also in light of the decreasing availability of family support — in most countries still the most extensive source of help — due to increased female labour market participation, modified living arrangements and changing inter-generational relationships. Current trends show an intensification of public efforts to allow the ageing-in-place of older people through a shift from residential to home care provision. In some countries this has been accompanied by a wider availability of cash-for-care arrangements, aimed at improving the users' range of choice (*consumer-direction*) between different services and categories of providers (*marketisation*). One drawback of this development is that *lack of information and advice* remains a key factor in preventing many older people from adequately accessing available support, especially when very old or living in isolation. More focused *investments in high-tech, user-friendly applications* in this sector could promote service accessibility, particularly in rural and remote areas. Another still too neglected dimension is represented by the *assessment and support of carers' needs* — even in countries where this is already recognised as a carer's right — since its often mainly service-driven design limits a more user-oriented delivery of interventions. Further strategic dimensions in social care provision throughout Europe are the capacity to provide *timely* support, and the ability of professional carers not only to be technically skilful, but also to treat older persons with *dignity*. This is particularly crucial in Northern and Western Europe, where older people show a higher empowerment — often leading to refusal of available services — thus suggesting here policies aimed at increasing the acceptability of already existing supports through a stronger partnership approach. In Mediterranean countries — but increasingly also in Central Europe — the widespread employment of migrant workers in care of older people has the effect of reducing costs, preventing institutionalisation and providing respite, but has possible drawbacks in terms of care quality, exploitation of migrants and «care drain» effects in sending countries. The latter are currently chiefly represented by Eastern European countries, whose on-going transition from the former socialist organisation of care shows an increasing provision of more decentralised services, although financial constraints limit far-reaching changes to enable the system to move from its current mainly family-based approach.

8. DENTAL PROBLEMS AND ORAL HEALTH

G.M. Macaluso (University of Parma, Sezione di Odontostomatologia, Parma, Italy; guidomaria.macaluso@unipr.it)

Edentulism is still a considerable social problem. In Europe, the rate of edentulous people >65 years is about 30%, with considerable differences among the various countries, ranging from 18% in Italy to 60% in the U.K. Edentulism is considered a handicap by the WHO, because of its consequences. Elderly edentulous patients are more prone to nutritional deficits and depression. Even after treatment by complete dentures, facial aesthetics is a common complaint, mainly for the low anterior facial height and the alteration of the naso-labial angle. Complete dentures may also cause problems to the oral mucosa and increase daily parafunctions, such as clenching the teeth, especially when the prosthesis are unstable. This occurs mainly when a resorbed alveolar ridge is present, making chewing food and even speaking difficult. Harder and coarser foods such as fruits, vegetables and meats, which are typically major sources of vitamins, minerals and proteins, come to be regarded as either difficult or nearly impossible to chew. Consequently, a tendency to favour softer, more processed foods develops. Nowadays osseointegrated implant therapies may resolve many of these problems, giving the chance of a stable mandibular complete denture by means of just 2 dental implants, or the possibility of a fixed prosthesis, not removable by the patients, with the feeling of chewing with their own teeth and a huge improvement in masticatory efficiency and in oromandibular function.

9. IMPACT OF AGE AND COMORBIDITY ON THE PROGNOSIS AND MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION

N. Marchionni (Department of Critical Care Medicine and Surgery, University of Florence, Italy; nmarchionni@unifi.it)

This presentation will focus on the determinants of treatment strategies of ST-segment elevation acute myocardial infarction (STE-MI), a condition which is highly prevalent among older persons, in whom it is associated with an increased fatality rate both in-hospital and short-term after hospital discharge. The most recent guidelines on therapeutic approach to STE-MI published by the American College of Cardiology/American Heart Association (1) strongly indicate that coronary reperfusion therapy (CRT) accomplished as early and fast as possible is the best available therapeutic approach for STE-MI, leading to significantly improved prognosis through substantial myocardial salvage deriving from early restoration of blood flow to the ischemic myocardium. Guidelines also suggest that mechanical reperfusion with primary coronary intervention (PCI) is probably to be preferred over fibrinolytic therapy, provided it is performed by experienced personnel in high volume centers and with a door-to-balloon interval within 90 minutes (1). This recommendations derives from results of several randomized controlled trials conducted in years '90s which demonstrated that, compared to thrombolysis, primary PCI during STE-MI improved both in-hospital and short-term hard outcomes. The Primary Angioplasty in Myocardial Infarction (PAMI) trial, for example, showed that primary PCI was associated with a significant reduction in the cumulative short-term incidence of stroke and of the combination of non-fatal reinfarction or death, compared to fibrinolytic therapy with

t-PA (2). Such results have been confirmed by several other studies and, 10 years after the publication of the first PAMI trial, a quantitative, systematic review including 23 randomized clinical trials which compared head-to-head primary PCI with fibrinolysis, has proven that PCI determines a remarkable short- and long-term improvement in several clinical outcomes, such as all-cause mortality, non-fatal myocardial reinfarction, recurrent ischemia, stroke (both hemorrhagic and ischemic), major bleeding, and the combination of death, non-fatal infarction or stroke (3). However, no one large clinical trial has been conducted in those years to selectively enroll older patients and, therefore, whether those benefits of primary PCI do extend to the elderly with STE-MI has remained an unexplored issue. Nonetheless, a small clinical trial with 87 STE-MI patients older than 75 years (mean age 80 years) has obtained results similar to those in the PAMI trial, with patients randomly allocated to PCI showing greater long-term survival as well as greater survival without reinfarction or stroke, than those allocated to fibrinolytic therapy (4). Due to the excessive prolongation of enrollment time, a randomized trial which more recently had been specifically designed to compare primary PCI with fibrinolytic therapy in patients older than 70 years of age (SENIOR PAMI), was prematurely interrupted by the safety monitoring committee. This caused the enrollment of only 481 of the 530 patients needed according to sample size calculations (5). Probably for this reason, the trial failed to reach its primary endpoint (a reduction in the combination of death or disabling stroke with primary PCI), but could demonstrate a significant reduction for the secondary end-point of combined death, cerebrovascular accident or reinfarction (5). This reduction, however, was significant only in the subgroup from 70 to 80 years of age, but not significant in the subgroup of those older than 80 years. Therefore, whether the superiority of primary PCI over thrombolytic therapy during STE-MI extends to the elderly, has to be determined from analysis of pooled data from trials with significant numbers of older individuals. In this perspective, a recently published analysis of data from PAMI, Mayo, and Netherlands randomized trials including 2534 patients has found that, compared to fibrinolytic therapy, the reduction in in-hospital mortality with PCI was even larger in patients older than in those younger than 70 years of age (6). For all these reasons, the most recent scientific statement of the American Heart Association, in collaboration with the American Society of Geriatric Cardiology, stated that the risk/benefit ratio favors primary PCI over fibrinolytic therapy in the elderly as well, with major benefit from PCI consisting of a reduction in reinfarction and need for target-vessel revascularization, while mortality reductions trend in the same direction are less robust. Moreover, since this evidence derives from small randomized trials, meta-analyses, or observational studies, more data are needed, particularly in patients >80 years of age (7). However, community practice recorded by registry studies reveals a disproportionately lower use of cardiovascular medications and invasive treatment even among elderly patients who would stand to benefit. Indeed, registry studies provide information that are collected in the perspective of the «real world», thereby allowing to draw a picture of what

happens in the daily clinical practice. This may diverge substantially from the ideal setting of clinical trials. To this purpose, our research group has designed the Acute Myocardial Infarction in Florence (AMI-Florence) registry, which included 930 consecutive STE-MI cases arriving alive either to a teaching, 3rd level hospital with a 24-hour service for primary PCI or to one of five district hospitals without the technology for PCI, but provided with an emergency transportation system for rapid transferral of patients for primary PCI (8). The first analysis of the AMI-Florence registry data showed that, in spite of recommendations from guidelines (1) and more recent scientific statements (7), almost a half (45.6%) of patients do not receive any form of CRT (i.e., they are treated conservatively, as it happened in the pre-fibrinolytic era), with almost all reperfused patients treated with primary PCI rather than with fibrinolytic therapy (8). The proportion of patients treated with PCI dramatically dropped from 71% at age <65 to 31% at age ≥85 years, a trend that was still significant after adjusting, in multivariable analysis, for presence of chronic cardiovascular and non-cardiovascular comorbidity, type of first admission hospital, time delay from onset of symptoms, admission Killip class, and MI location (8;9). Moreover, a further multivariable analysis demonstrated that, while being admitted directly to the hospital with PCI increased the probability of receiving CRT in all age classes, having previous chronic cardiovascular or non-cardiovascular comorbidity, or having acute left ventricular failure as indicated by a Killip class >1 significantly decreased such probability only in patients older than 65 years. This suggests that a reproducible, even though not openly coded, attitude of physicians towards adopting less aggressive therapeutic strategies leads to a systematic underutilization of CRT in older, frail STE-MI patients (9). Since, beyond advanced age, previous chronic comorbidity was the other single most potent predictor of CRT non-use, we conducted a further analysis aimed at determining the independent impact of comorbidity on therapeutic strategies and 12-month mortality (10). To this purpose, we first constructed a chronic comorbidity score (CS), by assessing the impact of each chronic condition from age- and gender-adjusted bivariate Cox regression analysis, testing its association with 12-month mortality. In this analysis, the beta coefficient measured the strength of the association, while the standard error was a measure of the precision of such estimate. The ratio of the beta coefficient over the standard error then generated a score for each chronic comorbidity, and was taken to represent the impact, or the severity, of that condition on 12-month mortality. Individual CS scores calculated through this procedure were then used to divide patients into three CS categories (from CS-1 to CS-3). Analysis showed that the probability of receiving CRT was remarkably reduced with increasing the CS score. Surprisingly, a 12-month survival analysis stratified by CRT status and CS score demonstrated that, while in CS-1 CRT was not associated with a significant reduction in mortality, such a reduction was significant and progressively greater in CS-2 and CS-3 categories. In other terms, younger, and less comorbid patients, who had been treated most often with primary PCI, benefited largely less from such aggressive treatment than

older patients with a greater burden of comorbidity, who had most often been treated conservatively (10). These findings confirm the need for enriching the training of medical specialists to target older, frail individuals presenting with STE-MI and a relevant burden of chronic comorbidity. This targeting process might help extending to the largest possible proportion of patients the benefits of the best possible treatment, a goal at least as important as the research of new technologies, aimed at further improving individual patient's outcomes.

10. IMPORTANCE OF FRAILTY DETECTION IN COMMUNITY DWELLING SENIORS

J.-P. Michel (*Geneva Medical School and University Hospitals; jean-pierre.michel@hcuge.ch*)

The purpose of this presentation is to demonstrate that frailty is not a health status but frailty is included in the active «life cycle» process. The process of «becoming frail» is at the beginning silent, insidious, purely endogenous with a progressive decrease of the physiological resources. Then it is revealed by stresses (endogenous stresses such as infections, cardiovascular diseases, depressed mood or exogenous stresses such as trauma, psychological aggression and bereavement process). A person is frail when he is unable to integrate physiological responses when he faces stress. At this stage, clinicians say that they can easily distinguish a FRAIL from a NON-FRAIL older. And this is true. To do so, they use a set of factors such as age (appearance), nutritional status (thin, loss of weight), subjective rating (health perception), level of performance (cognition, fatigue), list of impairments (vision, hearing, strength), current functional status (I.A.D.L., A.D.L.), current use of care (medications, hospital). But there is no «working» definition to facilitate the identification of this high-risk subset of the population prior to the onset of adverse outcomes (repeated falls, fractures, recurrent hospitalizations, nosocomial infections, increased drug use, functional decline and dependency). One major reason of the absence of a «working» definition of frailty is that there is not only one kind of frailty but a variety of possible expressions of frailty: physical, mental, affective, nutritional and sensory. An important problem is to determine which is the first component involved and which is the most important. How is it possible to explain that one single organ dysfunction can precipitate the loss of physiological reserve, preventing the older to cope with stress? To go ahead putting in operation a definition of frailty it will be necessary to target the objective (population or individual?), the setting (community or hospital?) and the purpose (clinical or research? screening or intervention?). That is to insist on the usefulness to identify the older who would be the most likely to benefit of a comprehensive evaluation, preventive interventions and team-based care.

11. RESPONDING TO CHALLENGES AND OPPORTUNITIES OF AGEING: RESEARCH AND POLICY

A. Sidorenko (*UN Focal Point on Ageing; sidorenko@un.org*)

Five years ago, the Second World Assembly on Ageing gathered in Madrid, Spain with the aim to address the challenges and opportunities of global ageing. The Assembly adopted the Madrid International Plan of Action on Ageing, which defines priorities and outlines recommendations for policy action on ageing in the twenty-first century. The Madrid Plan of Action emphasizes the importance of research in policy action on ageing at both national and international levels. To support the evidence based implementation of the Madrid Plan of Action, the UN Programme on Ageing, together with the International Association of Gerontology and Geriatrics, elaborated the Research Agenda on Ageing for the Twenty-First Century. In 2007, the Research Agenda was updated to reflect the most recent developments in the world of research and policy action on ageing. The European science of ageing should be at the forefront of efforts to convert the ageing society where we live today into a society for all ages, as called for by the Madrid Plan of Action.

12. OLD AGE AS ILLNESS AND THREAT: ELDERLY PEOPLE EXPERIENCES AND PERCEPTIONS

S. Torres¹, G. Hammarstrom² (*¹Linkoping University, NISAL, Sweden, ²Uppsala University, Sweden; sandra.torres@mdh.se*)

Based on data collected through 37 qualitative interviews with cognitively healthy elders between the ages of 77 and 93 who are beginning to experience minor health problems, this presentation will address the social construction of old age as illness and threat. The results show that the understandings in question are interrelated with the perceptions of diminished everyday competence that these elders uphold; the manner in which they define dependency and independence and the way in which they use old age references to motivate and explain the choices they make with regard to how they spend their days. Of interest is also the differentiation that these elders make between aging as a process that others undergo (and that awaits them in the future) and old age as the stage at which they are. This differentiation allows them to uphold the construction of old age as illness and threat as a relevant point of departure for the way in which they talk about old age while at the same time neglecting to accept the process of aging as relevant to their own narratives. Thus, contradictory ideas about old age and aging seem to be at stake; ideas which they in turn choose to disregard and/or to stress depending on the construction of ageing and old age that they deem most relevant to what they want to convey. The analysis shows, in short, that elderly people uphold a variety of understandings of old age and aging at once.

BIOLOGY OF AGING

13. ANTI-DIABETIC DRUG METFORMIN INHIBITS BREAST CANCER CELL GROWTH *IN VITRO*

I.N. Alimova¹, B. Liu¹, S. Edgerton¹, T. Dillon¹, V.N. Anisimov², L.M. Berstein, A.D. Thor¹ (¹University of Colorado Health Science Center, Denver, Colorado, U.S.A.; ²N.N. Petrov Research Institute of Oncology, St. Petersburg, Russia; aging@mail.ru)

A lot of epidemiological and research data show a link between type 2 diabetes and cancer. Very little is known about the influence that antidiabetic drugs might have on this relationship. It is known at the same time that overexpression of the erbB-2 occurs in approximately 30% of human breast cancer and correlates with poor prognosis. Besides, ErbB-2 is considered an important target for therapeutic intervention in breast cancer. Metformin is one of the most widely used oral drugs for the treatment of type 2 diabetes. We investigated the effect of metformin treatment on cell proliferation and cell signaling *in vitro*. The human breast cancer cell lines MCF-7 (ER $_{\alpha}$ +, low erbB-2), MCF-7/713 (ER $_{\alpha}$ -, high erbB-2), BT-474 (ER $_{\alpha}$ +, high erbB-2) and SCBR-3 (ER $_{\alpha}$ -, high erbB-2) were used in this comparative study. Cells were treated with metformin (2 mM, 5 mM, 10 mM and 50 mM) for 24 hrs. Metformin demonstrated anti-proliferative activity in dose-dependent manner in all breast cancer cell lines tested, regardless of ER $_{\alpha}$ or erbB-2 status. Thus, depending of the concentration metformin induced G1 cell cycle arrest in all of these lines. The dose-dependent response of MCF-7, MCF-7/713, BT-474 and SCBR-3 breast cancer cells to metformin was characterized by a loss of S-phase of the cell cycle. Metformin inhibited colony formation in these cell lines. It was found that this anti-diabetic drug decreased expression of Cyclin D1 and E2F1-cell cycle promoters in G1-S transition in all tested tumor breast cancer cells. In all cell lines which was used in our research the level of Mapk-Phos, ERK2(MAPK), mThor, mThor-Phos, IGF-1R, IRS-1 were reduced. AKT-Phos, and AKT protein level were reduced upon the metformin treatment in MCF-7 and MCF-7/713 human breast cancer cell lines. Treatment by metformin, starting with 10 mM and in higher concentrations leads to down regulation of the erbB2 protein expression level. Our findings indicate that metformin may play a significant role in breast cancer treatment not related only to the hypoglycemic activity of this drug.

14. APPROACHES TO EVALUATION OF PHARMACOLOGICAL DRUGS EFFECTS ON AGING AND LIFE SPAN IN MICE

V.N. Anisimov, I.G. Popovich, M.A. Zabezhinski (N.N. Petrov Research Institute of Oncology, St. Petersburg, Russia; aging@mail.ru)

There is the need to create standard guidelines for testing such drugs and for evaluation of life extension potential as well as other late effects. Guidelines for testing should include such significant points as animal models, regime of testing and biomarkers/endpoints. Mammals are most

appropriate animal models, because their biology is sufficiently homologous to that in humans. Mice are the most appropriate models in terms of husbandry, costs, and length of life. The methodology of testing anti-aging drugs in laboratory mice is presented commonly used in our laboratory has been described. It includes the selection of mouse strain, sex, age at start of treatment, housing conditions, design of the long-term study, some non-invasive methods of assessment, pathology examination and statistical treatment of the results. As usual we include outbred (SHR or NMRI) mice, inbred CBA mice and transgenic HER-2/neu mice in the protocol. During the study, a number of biomarkers of aging could be included into the battery of tests. For most of our studies, besides of survival parameters, we registered body weight, body temperature, food and water consumption, physical activity and muscular strength, estimated estrous function. To evaluate late effects of drugs, we have also conducted pathomorphologic examination, including tumor diagnostics. For general evaluation of the effect of drugs on aging, life span and carcinogenesis, adequate mathematical and statistical models were used. *The work was supported in part by the grant NSh-2293.2003.4 from the President of Russian Federation.*

15. HLA SYSTEM AND LONGEVITY

O.V. Artemieva, N.A. Rogacheva, T.A. Mikhailova, L.D. Serova (Russian Research Institute of Gerontology, Moscow, Russia; artol@comail.ru)

Numerous scientific researches have proved that aging is an immune dependent process. Genetic control and regulation of immune response is performed by the major histocompatibility complex (MHC) which is called HLA in humans. It may be supposed that polymorphous HLA-genes play an important role among genetic factors of longevity. The HLA system is possibly associated with the life span either through directly inclusion into the aging mechanism or through associations with various diseases. The aim of this research was to study a possible correlation between HLA-polymorphism and longevity. We have examined 420 patients of elder age groups, 166 of elderly age, 135 of old age and 119 long-livers. All the patients had age related diseases. The control group consisted of 280 healthy persons age ranged from 18 to 59 years. We studied HLA-A, B antigens and HLA-DRB1, DQA1, DQB1 alleles. In the result of the study it was shown that HLA antigen frequencies were not different in the elderly age compared with the control group. The frequency of HLA-A1 and B8 was increased in the old age compared to the controls. The frequency of HLA-DRB1*11 was significantly increased and frequency of HLA-A2, B12, DQB1*0302, DQB1*0501 was decreased in long-livers compared with the control group. Marked differences in HLA-DQA1 locus allele frequencies were not found in long-livers compared to the controls. MHC genes are possibly interrelated with life span through the associations with different diseases,

mainly with infectious, autoimmune diseases and cancer. HLA-A2, B12, DQB1*0302, DQB1*0501 are positively associated with a number of diseases that is why for their carrier the possibility of longevity is less than for the common population. HLA-DRB1*11 may be considered as an immunogenetic marker of longevity.

16. *IN VIVO* PROTECTION OF THE ORGANISM FROM OXIDATIVE STRESS BY SMALL NATURAL REGULATORY PEPTIDES

A. Arutjunyan¹, A. Boldyrev², L. Kozina¹ (¹St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; ²International Biotechnological Center of M.V. Lomonosov Moscow State University, Moscow, Russia; ibg@gerontology.ru)

Small regulatory peptides, *epithalon* (Ala-Glu-Asp-Gly), *vilon* (Lys-Glu), and *carnosine* (Ala-His) possess some advantages comparing with other natural and synthetic antioxidants in their ability to protect organism from oxidative stress *in vivo*. Administration of these compounds under stress conditions (hypoxia, ischemia, hypokinesia) stimulates natural antioxidant defense system including activation of antioxidant enzymes (superoxide dismutase, glutathione peroxidase, etc.), and protects proteins and lipids from radical attack. This effect is accompanied with decrease in the number of chromosomal aberrations in cells, enhanced life-span and decelerated accumulation of senile features (including probability of tumor). The concentrations of some compounds tested are compared with those being characteristic of the tissues where they are accumulated. At the same time, when antioxidant capacity of these compounds was tested *in vitro* their effect was demonstrated at much higher concentration. Comparing the effect of small peptides with that of natural regulator melatonin or synthetic anti-ischemic drug mildronate demonstrates that the former possess the wider spectrum of protecting ability than the latter. In the presentation, analysis of mechanisms will be done which are used by small regulatory peptides for correction of antioxidant defense system *in vivo*. It is suggested that these compounds are able to regulate the cellular level of free radicals, thus serving as intracellular buffers for reactive oxygen species. In conclusion, the small regulatory peptides can be used in geriatric medicine as biocorrectors of wide spectrum of biological activity.

17. CORRECTION OF LIPID PEROXIDATION PROCESSES AND ENZYME ACTIVITY OF ANTIOXIDANT PROTECTION IN ELDERLY PEOPLE

E.O. Asanov¹, A.V. Pisaruk¹, N.D. Chebotarev¹, M.V. Belikova² (¹Institute of Gerontology of Ukraine AMS, Kiev; ²Institute of Physiology NAS of Ukraine, Kiev, Ukraine; eoasanov@ukr.net)

Activation of lipids peroxidation (LP) is considered to be an important part of pathogeny for many diseases. Oxidative stress plays an important role in the development of hypoxic damages and decrease the tolerance to hypoxia in ageing. It proves the necessity of developing methods of correction of LP processes, antiradical protection and increase the tolerance to hypoxia in old age. Interval normobaric hypoxic trainings (INHT), as it was shown earlier, in young people reduce free-radical oxidation and promote increasing the activity of the basic antioxidant enzymes. For correction of LP processes and antiradical protection using the regulator of carnitine-dependent metabolism of fat acids — mildronatum is also theoretically reasonable.

The purpose. To study the influence of INHT and mildronatum on LP processes and antioxidant protection in elderly people. *Materials and methods.* INHT was applied to 15 and mildronatum was prescribed to 12 practically healthy 60–74 years persons. INHT were carried out on apparatus complex «Gipotron» (Ukraine). The course of trainings consisted in 10 daily sessions. Training level of hypoxia was selected individually. The mildronatum was prescribed daily within 10 days, 5 ml of 10 % solution intravenously jetly once a day. Estimated activity of superoxide dismutase, catalase and defined products of thiobarbituric acid in venous blood before and after courses of INHT and mildronatum. *Results and discussion.* Application of INHT for elderly people has positive influence on the condition of antioxidant system of human body. The evidence of it is the increased activity of superoxide dismutase (shift $0,9 \pm 0,2$ c.u., $p < 0,05$) and catalase ($3,9 \pm 0,3$ m/l, $p < 0,05$) after the course of INHT. Thus the formation of thiobarbituric acid products (shift $-0,5 \pm 0,1$ nm/l, $p < 0,05$) in elderly people decreases. The mildronatum also increases the activity of catalase (shift $2,1 \pm 0,2$ m/l, $p < 0,05$) and decreases the formation of thiobarbituric acid products, however not so expressed. Thus, both INHT and mildronatum can be recommended for correction of antioxidant protection system abnormalities in elderly persons.

18. CERAMIDE-INDUCED CELLULAR SENESCENCE AND PI3K-DEPENDENT SIGNALING PATHWAY

N.A. Babenko¹, N.T. Ktistakis², M. Manifava² (¹Research Institute of Biology, V.N. Karazin Kharkov National University, Kharkov, Ukraine; ²Babraham Institute, Inositide Laboratory, Babraham, Cambridge, CB2 4AT, United Kingdom; babenko@univer.kharkov.ua)

During cellular senescence several lipid biosynthetic and signaling pathways are altered. In addition, bioactive lipids themselves have been shown to cause senescence in several cell and animal models. Addition to cultured cells of membrane-permeable ceramides or enhancement of intracellular ceramide levels under conditions of cellular stress are known to cause cell cycle arrest or apoptosis and induce a senescent phenotype. It has been determined that phosphatidylinositol 3-kinase (PI3K) is responsible for the upregulation of senescence-associated β -galactosidase (SA- β -gal) and the senescent phenotype development in human fibroblasts. The goal of the present work was to identify direct downstream targets of phosphatidylinositol (3,4,5)-trisphosphate (PI(3,4,5)P₃) that are altered in cells triggered to senescent phenotype by exogenous ceramide. The data show an accelerated inhibition of proliferation by D-erythro-C6-ceramide that resulted in a shortened replicative lifespan of WI38 cells. An altered morphological phenotype and SA- β -gal activity accompanied these changes. Exogenous ceramide induces, in low-passage fibroblasts, the expression of the important histochemical marker of senescence, SA- β -gal. This induction is time- and concentration-dependent and highly specific. In order to identify effectors of PI(3,4,5)P₃ whose expression and/or lipid binding affinity changes during senescence we used Affi-Gel beads coupled to PI(3,4,5)P₃. This type of methodology used for discovering lipid effectors in critical intracellular signaling pathways, such as those controlling cell growth and survival. More than 30 previously known and unidentified PI(3,4,5)P₃-binding proteins were isolated from cell extracts. Three more unidentified PI(3,4,5)P₃ ef-

factors were isolated from fibroblasts treated by ceramide. Data presented in this communication provide evidence for SA- β -gal and PI(3,4,5)P₃-binding proteins expression in the cells triggered to senescence by ceramide. *Supported by European Molecular Biology Organization (Project № 316.00-06).*

19. NUTRIGENOMICS — THE POWERFUL TOOL OF PERSONALIZED PREVENTION. HOW TO PROCEED IN PRACTICE?

H.V. Baranova (European Expert «Genomics for Health» for the European Commission, EU; baranova@wanadoo.fr)

The beginning of postgenomic era after finalisation of the International Human Genome Project (2003) and integration of the genetic knowledge in everyday life provoke the revolutionary changes in our society from medical, social and psychological points of view. It is a tremendous source of new opportunities and positive practical applications, which should be, however, correctly applied. Modern genetics also opens new possibilities for development of highly personalized prevention methods, which can be used on the presymptomatic stage. Once correctly applied, this approach can be very helpful for establishment of individual lifestyle and nutritional programmes. Moreover, nutrigenomics — adaptation of your nutrition to your genes — currently represents the most powerful tool in personalized prevention. Scientific studies demonstrate that this approach can bring us up to 14 years of healthy life. Nutrigenetics is also widely used in anti-aging medicine and represents one of the major goals for: a) different European Strategies, including education, b) Environmental Genome Project (EGP; 1998 — up to now — National Institute of Environmental Health Sciences, USA), and 3) network of excellence in Europe — ECNIS (2003 — up to now). From practical point of view, genetic testing for individual prevention and creation of personalised diet and lifestyle is already available for 5 years. This approach, however, requests highly qualified specialists. Principles of development and application of the individual lifestyle, nutrition and anti-aging programmes, also as the results of practical up-date are highlighted in the presentation.

20. GENOMICS AND AGEING

H.V. Baranova¹, V.S. Baranov² (¹European Expert «Genomics for Health» for the European Commission, EU; ²Academical Genetic Centre of Inherited Diseases and Prenatal Diagnostics, Russia; baranova@wanadoo.fr)

Tremendous progress in genetics and its application in everyday life opens new opportunities for development of new anti-aging and longevity strategies. This presentation highlights principle differences in the vision of longevity and anti-aging processes from genetic point of view. The analysis of aging processes in different organs and tissues according to gene regulation and their further clinical impact is discussed and key routinely used genetic markers are demonstrated. Main international strategies in this area are presented and include: (a) In relation to longevity: ECNIS and Environmental Genome Project (EGP), which study main environment-gene interactions and key markers for polygenic multifactorial diseases and conditions (diabetes type II, cardiovascular risk, allergies, cancer, aging processes, etc.). These markers, therefore, represent the major genetic source for the development of personalised prevention; (b) In relation to anti-aging: GEHA — Genetics of

Healthy Aging . The project regroups 11 different countries and studies gene regulation processes during health aging. The practical aspects of development, application and recommendations of personalised prevention programmes in anti-aging medicine, also as the frequent mistakes are discussed.

21. PROTEIN AND METHIONINE RESTRICTION AND AGING

G. Barja (Dept. Animal Physiology-II, Complutense University of Madrid, Spain; gbarja@bio.ucm.es)

Available information indicates that long-lived mammals have low rates of reactive oxygen species (ROS) generation and oxidative damage at their mitochondria. On the other hand, many studies have consistently shown that dietary restriction (DR) in rodents also decreases mitochondrial ROS (mitROS) production and oxidative damage to mitochondrial DNA and proteins. It was recently observed that 40% protein restriction also decreases MitROS generation and oxidative stress in rat liver, whereas neither 40% carbohydrate nor 40% lipid restriction change these parameters. This is interesting because protein restriction also increases maximum longevity in rodents (although to a lower extent than DR) and is a much more practicable intervention for humans than DR, whereas neither carbohydrate nor lipid restriction seem to change rodent longevity. Moreover, it was recently found that isocaloric 80% methionine restriction substituting it for L-glutamate in the diet also decreases MitROS generation in rat liver. This is interesting because it is known that exactly that procedure of methionine restriction also increases maximum longevity in rats and mice. Further studies show that both 40% and 80% methionine restriction (isocaloric) without changing other dietary components also decreases mitROS generation and oxidative stress. The magnitude and the kind of changes observed during methionine restriction support the possibility that the reduced intake of dietary methionine is responsible for the decrease in mitochondrial ROS generation and the ensuing oxidative damage that occurs during DR, as well as for part of the increase in maximum longevity induced by this dietary manipulation. *Supported in part by BFU2005-02584.*

22. BIOLOGICAL AGE MODEL IN WORK ABILITY ASSESSMENT AMONG LORRY-DRIVERS

A.S. Bashkireva (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; angel_darina@mail.ru)

Aim: The drivers' professional work ability as the main element inside the system including drivers, vehicles and traffic environment (DVTE system) should become the object for new medical and psychophysiological methods research and development. In particular it may be necessary for the aims of occupational selection and good employment. We know the phenomenon of differential ageing to be the result of unequal environment conditions pressure, so it is necessary to assess the difference between calendar and biological age (BA) in order to reveal the effects induced by combined occupational hazards in lorry-drivers of various age and driving experience. We estimate the **Biological Age Model** as an integrated prenosologic diagnostic approach to the evaluation of occupational, environmental and social factors influence on the ageing rates of lorry-drivers and their premature ageing prevention. We have compared the

physical (PWC) and mental (MWC) work capacity, BA and ageing rates of lorry-drivers (experimental group) and metal craftsmen (control group) in connection with their chronological age (CA), driving experience, occupational environment, work schedule and social-demographic characteristics. *Methods:* 150 male lorry-drivers (mean age 41.3 ± 0.9) and 150 male metal craftsmen (mean age 44.8 ± 0.9) were examined according to the multiply-regressional model of BA evaluation based on the estimation of PWC and MWC parameters. Integrated indices such as BA on MWC, BA on PWC, BA on (MWC+PWC), predicted biological age (PBA) and aging rate (BA-PBA) were calculated. We tried to integrate current applicable medical, biological and psychophysiological methods of functional state monitoring into one automated system of BA evaluation. It was realized as the software application package «BIOAGE», including database with relational model, analyser module, lists module, tables generation module, input-output module, calculating formulas editing module and help module. The «BIOAGE» system passed beta-testing during automated control of aging rates in groups under study. *Results:* Statistically significant differences between MWC, PWC levels and ageing rates in the studied groups were revealed ($p < 0.001-0.05$). BA indices and ageing rates of lorry-drivers were significantly higher in comparison with the control group ($p < 0.001$). The results presented showed that in equal conditions of submaximum physical load in both groups a significantly higher increase of pulse and systolic blood pressure, and lesser growth of diastolic blood pressure among lorry-drivers in comparison with the control group were observed. Analysis of correlations between length of service and CA of lorry-drivers from one side and parameters of MWC, PWC, BA indices and ageing rates from the other's showed that most of the criteria under study depended on driving experience significantly more than on CA of lorry-drivers ($p < 0.001-0.05$). Thus the obtained data indicated the premature decrease in adaptation ability of lorry-drivers' cardiovascular and nervous system, which can result in occupational and work-related diseases and premature or accelerated ageing. *Conclusion:* The above studies revealed the occupational environment and long driving experience being the risk factors for the premature ageing of lorry-drivers. The results showed the «BIOAGE» system to be available for the estimation of DVTE system safety and make it possible to appreciate the informative value of BA criteria in estimating the effect induced by combined occupational hazards on MWC and PWC, as well as to compile the population BA and PBA data base for revealing risk groups of lorry-drivers with premature or accelerated ageing.

23. ENDOTHELIAL PROGENITORS CELLS IN CENTENARIANS

G. Basile, C.Lo. Balbo, G. Coppolino, C. Nicita-Mauro, G. Maltese, P. Parisi, S. Loddo, M. Buemi (*Division of Geriatric Medicine, University of Messina, Italy; basileg@unime.it*)

Centenarians despite the appearance of renal senescence, characterized by the diminution of the renal mass and glomerular filtration rate by about 50%, may often maintain a stable metabolic state without clear signs of renal disease. The discovery of molecular mechanisms for kidney function preservation in this small subjects' cohort could offer us new perspectives of intervention. It has been suggested that microvascular remodelling and adaptations to structural changes may contribute in these subjects to

preserve residual glomerular filtration rate. Newborn vessels origin from stem cells, mobilized from bone marrow, and circulating in blood to the sites of vascular development. They were defined as endothelial progenitor cells (EPCs). So we tested the hypothesis that, centenarians respect to mild age patients with comparable GFR assessed by Cockcroft-Gault equation have a dissimilar mobilization rate of EPCs and this attitude could be responsible for an improved renal vascular reparative capacity. We quantified EPCs in blood samples of 25 centenarians (mean age 103 ± 2.4), without symptoms of renal disease and with a glomerular filtration rate (GFR) of 69.00 ± 7.60 ml/min, and of 25 patients (mean age 51.00 ± 13.70 years) with stage 2 of chronic kidney disease according to NFK K/DOQI classification (GFR 70.00 ± 5.65 ml/min). Staining and analysis was performed using the ISHAGE (International Society of Hematotherapy and Graft Engineering) guidelines. EPCs were identified by the expression of cell surface antigens (CD34⁺, CD133⁺ and VEGFR2⁺) in direct three-color analysis. EPCs count was conducted using PROCOUNT™ (BD Biosciences) that is a multiparameter flow cytometric lyse no-wash method, performed in a TRUCOUNT™ tube (BD Biosciences). Using a FACSort (BD Biosciences) flow cytometer and based on the SSC/forward scatter (FSC) profile. Student's t-test was used to determine the statistical significance and Univariate correlations were made with Pearson correlation coefficient. CKD patients showed, markedly, a significant decreased numbers of EPCs respect to centenarians. EPCs number was directly correlated to GFR in centenarians while CKD patients lose this strict relationship. As far as the kidney is concerned, environment agents may influence the tissues damage in young and elderly people but genetic factors acts in single subjects extending the attitude to functional adaptations and preserving glomerular filtration rate. Continuous and sustained EPCs mobilization could probably represent a particular mechanism improving renal micro vascular repairment genetically developed in a limited number of subjects.

24. THE PARTICIPATION OF Bcl-2 FAMILY IN APOPTOSIS REGULATION IN NEUROENDOCRINE SYSTEM OF AGED *tnf*-KNOCKOUT MICE

E.D. Bazhanova¹, K.I. Pavlov², I.G. Popovich³, V.N. Anisimov³ (¹*I.M. Sechenov Institute of Evolutionary Physiology and Biochemistry, St. Petersburg;* ²*A.I. Herzen Russian State Teaching University, St. Petersburg;* ³*N.N. Petrov Research Institute of Oncology, St. Petersburg, Russia; bazhanovae@mail.ru*)

Tumor necrosis factor (TNF) has a high anti-tumor and proinflammatory activity. TNF plays an important role in inflammation, from localizing the noxious agent and amplifying the cellular and mediator responses at the local site and systemically, to editing (e.g., apoptosis) injured cells or effete immune cells and repairing inflammatory damage. *Tnf*^{-/-} (knockout) mice develop normally and have no gross structural or morphological abnormalities. However these mice have probably many fine or sharp distinctions in main processes such as inflammation, apoptosis and others. So, the aim of our investigation was to study the supposed connection between lack of *tnf* and apoptosis pathway in mice hypothalamus in ontogenesis. We studied magnocellular neurosecretory supraoptic (SON) and paraventricular nuclei (PVN) in male *tnf*^{-/-} (2; 13 mo.) and wild type (wt) (3; 15 mo.) mice. We detected the expression of apoptosis-associated molecules Mcl-1, Bcl-2, Bax, caspase-8 in neurosecretory cells using immunocytochemistry, and

apoptosis level using ethidium bromide staining and luminescent microscopy. We revealed that absence of *tnf* leads to distinction between wt and *tnf*^{-/-} mice in expression of apoptosis signal proteins. Such, Mcl-1 synthesis is smaller in neurosecretory cells of wt young mice compared with *tnf*^{-/-} young ones, and Bcl-2 vice versa. The caspase-8 level is smaller only in SON of wt young mice compared with *tnf*^{-/-} young ones. In old mice there is one difference, Bcl-2 is expressed in hypothalamus of *tnf*^{-/-} group more, than in wt. However, these differences do not influence on apoptosis level in neuroendocrine system of young mice as well as old ones. The apoptosis of neurosecretory cells increases in aging in both groups of animals, and in old *tnf*^{-/-} and wt mice the level of cell death is same high. At the same time, caspase-8 expression rises in aging in SON and PVN in both group of animals. We show that changes of expression of Bcl-2 family do not effect to apoptosis regulation in studied mice in aging. Such, increase of anti-apoptotic proteins (Bcl-2, Mcl-1) expression and decrease of proapoptotic protein Bax does not influence on apoptosis level in aging in *tnf*^{-/-} and wt mice. Apparently, there is another way of apoptosis activation (presumably, the p53 and caspases play role in this way) in aging in these genetic lines of mice.

25. L1 ELEMENT AS AN INTRINSIC CONTRIBUTOR TO MAMMALIAN AGING

V.P. Belancio, P. Deininger (*Tulane University, Department of Epidemiology, New Orleans, USA; vperpe@tulane.edu*)

Long Interspersed element 1, LINE-1, is the only active autonomous non-long terminal repeat (LTR) human retroelement. The expression and activity of these elements contribute to human genomic instability. LINE-1 elements comprise 17% of the human genome, which translates into about 5×10^5 L1 copies, the majority of which are defective due to truncations at their 5' end. L1 elements express two open reading frames, ORF1 and ORF2, both of which are required for retrotransposition. Functional ORF2 protein contains AP-like endonuclease (EN), reverse transcriptase (RT), and cystein-rich domains. DNA damage in the form of double-strand breaks (DSBs) inflicted by the L1-encoded DNA endonuclease is potentially much greater than the insult to the genome caused by the element via insertional mutagenesis. This type of DNA damage has consequences for the whole organism, not only for its progeny. Because DSBs are highly toxic and have to be repaired by the cellular machinery, L1 expression is likely to be a significant endogenous mutagenic factor that contributes to the mammalian aging process. L1 expression has often been assumed to be restricted to the early stages of embryonic development and germ cells. Based on this concept, most of the effort has been concentrated on the component of the L1 integration process that results in the *de novo* insertions that could be past onto the next generation with little importance for the carrier of the germ-line mutation. Our data demonstrate L1 expression in a number of human somatic tissues, primary cells, mesenchymal stem cells, and multiple human cell lines. The levels and RNA processing of endogenous L1 expression vary significantly between the cells. This finding fundamentally changes our understanding of the significance of the L1 expression and its impact on the hoSt. Ongoing low level of L1 expression in somatic cells has a potential to lead to a steady accumula-

tion of mutations due to the error-prone repair of the DSBs created by the L1 endonuclease and therefore contribute to mammalian aging.

26. COMPARISON OF ADAPTATION BIOMARKERS

L.M. Belozerova, T.V. Odegova (*Perm State Medical Academy, Perm, Russia; biological@perm.ru*)

The decrease of organism adaptive abilities in aging is best reflected in reduction of mental and physical working capacity. The aim of the research is the comparative analysis of three biological age determination methods by mental, physical and both kinds of working capacity and measurement of sex differences in age changes rate. The complex investigation of mental working capacity (short memory, psychic productivity, thinking and attention) and physical working capacity (submaximal physical working capacity, submaximal physical working capacity per kg of the body mass; heat rate, systolic and diastolic arterial pressure at the load height) have been performed in 351 persons of the young, mature, elderly and old age. Biological age has been determined by means of multiple linear regression models. The main criterion of biological age determination methods the accuracy is the value of multiple correlation coefficient between the chronological age and regression equation. By mental working capacity in women it was 0,83, in man 0,77; by physical working capacity — 0,92 and 0,90; by both kinds of working capacity — 0,93 and 0,91 accordingly. By accuracy in calculations of biological age the methods had the following distribution: by both kinds of working capacity, physical working capacity, mental working capacity. Women in all methods had higher indices that demonstrate greater conjugation between age changes working capacity and chronological age in women in comparison with men. To compare the leading tendency of age changes rate we use square coefficients multiple correlation ratio as to one year of chronological age corresponds R^2 of biological age. In such approach the ratio R^2 women: R^2 men shows how many times age changes rate in women is more or less than in men. The obtained data indicate ratio by mental working capacity is 1,19, physical one 1,02, both kinds of working capacity 1,03. *Summary.* The methods of biological age determination by working capacity are the instruments of objective estimation of human beings aging rates; the complex method of biological age determination by both kinds of working capacity being more accurate in comparison with other methods; women brain aging rate is faster than in men, the rate of aging by physical and both kinds of working capacity has no sex differences.

27. DNA-PROTEIN CROSS-LINKS AND PROTEIN POLY(ADP)-RIBOSYLATION IN NUCLEI AND MITOCHONDRIA FROM THE BRAIN AND SPLEEN OF RATS OF DIFFERENT AGE BEFORE AND AFTER GAMMA-IRRADIATION

I.I. Belskaya, T.E. Ushakova, N.A. Gulyaeva, A.I. Gaziev (*Institute of the Theoretical and Experimental Biophysics of RAS, Pushchino, Moscow region, Russia; irenaivanova@rambler.ru*)

The appearance of DNA-protein cross-links (DPC) and protein poly (ADP)-ribosylation (PARP) effect strongly on the structural organization of DNA in the chromatin and the DNA repair efficiency. At the same time, evidence from many studies demonstrate that the ageing

in mammals is accompanied by accumulation of different lesions in DNA and a decrease in their repair efficiency. Thus, the comparative analysis of DPC level and its repair efficiency, and of PARP expression degree, in the nuclei and mitochondria of old and young organisms is necessary to understand the ageing mechanisms. Our experiments showed that the constitutive and γ -induced level of DPC and PARP in the nuclei and mitochondria in 2- and 29-month rat tissues differ very much. At the doses 5 and 10 Gy (^{137}Cs), the amount of DPC produced in mitochondria and nuclei of the brain and spleen of 29-month rats was 1.8–2.5 times greater than in the nuclei of the same tissues of young animals. At the same time, in the mitochondria of brain and spleen from irradiated rats the amount of DPC was by 30–80% higher than that in the same tissues nuclei. Analysis of the changes of the DPC content during the post-radiation period showed that in 5 hours after irradiation of rats with a dose of 10 Gy, the level of these lesions in the nuclei of the brain and spleen of young rats decreased by 40% and 65% respectively. In this post-radiation period in nuclei of brain and spleen of old rats the amount of DPC decreased by 20% and 40% respectively. However the data on DPC obtained for the mitochondria of brain and spleen from both young and old rats showed that the amount of these lesions did not decrease during 5 hours post-radiation period. The background level of DPC in the brain and spleen mitochondria of old rats was about two times higher than in young animals. These results enable to suppose that mitochondria do not possess a system of DPC repair. It was detected that the level of protein poly (ADP)-ribosylation in the cell nuclei is 5–7 times higher than in mitochondria. The level of ADP-ribosylation of proteins in the nuclei of brain and spleen cells of 2-month rats irradiated with 5 and 10 Gy was by 50–105% higher than in the control. At the same doses of radiation the level of ADP-ribosylation of nuclear proteins in brain and spleen of old rats increased only by 30–65% compared to the control. Unlike cell nuclei, the radiation-induced activation of ADP-ribosylation in mitochondria was less expressed: the level of ADP-ribosylation increased by 35–47% in young rats and by 10–25% in old animals. Thus, we can suppose that one of the probable causes of the less efficient repair of radiation-induced DNA damage in old organisms is the accumulation and the repair delay of DPC, and the decrease of PARP level. The high DPC level and the low PARP level can make the access of enzymes to damaged DNA loci difficult.

28. SPECTRUM OF INSULIN RESISTANCE: AGEING, CANCER, HIV INFECTION, FETAL PROGRAMMING... FURTHER EVERYWHERE: ASSOCIATION WITH ADIPOSE TISSUE AND ENDOCRINE-GENOTOXIC SWITCHINGS

L.M. Berstein, D.A. Vasilyev, A.Y. Kovalevskij,
Ju.O. Kvatchevskaya, T.E. Poroshina (N.N. Petrov
Research Institute of Oncology, St. Petersburg, Russia;
levmb@endocrin.spb.ru)

Although the term «metabolic syndrome» is considered being imprecisely defined and possibly needs a critical appraisal (R. Kahn et al., 2005), nevertheless its most important component — insulin resistance (IR) increasingly attracts attention and is discussed in more than 20 000 publications during last 25 years. The characteristic feature of

IR is its «ubiquity». In conjunction with changes in steroid production, metabolism and activity IR presents a basis for major non-communicable diseases including cancer, is related to obesity and is discovered almost persistently with ageing at least until age 75–80. On the other hand, IR may be the result of reduced as well as increased growth in utero and is found in not having excessive body fat smokers and in HIV-infected patients with lipodistrophy. Thus, another feature of IR is its bipolarity, or «U-shapeness». Under conditions of glucose intolerance the function of the principal energetic substrate in accordance with the Randle cycle principle is acquired by free fatty acids. Their excessive oxidation together with dysfunction of peroxisome proliferators-activated receptors (in particular PPAR γ) and adipocytokine system assists in furthering the progression of IR, and therefore denotes a significance of adipose tissue state and glucose utilization and effects for the whole problem. Earlier the assumption was made that the rise and course of connected with IR main non-communicable diseases can be modified through three related events: phenomenon of switching of estrogen effects, joker function of glucose and adipogenotoxicosis. Among these endocrine-genotoxic switchings the two latter are characterized correspondingly by predominance of insulin-stimulating or ROS-generating action of glucose or by excess of DNA damage promoting adipose tissue-related factors (TNF α , IL-6, NO) over the factors with mainly hormonal function (leptin, adiponectin). In our studies, in females with as well without signs of glucose intolerance the HOMA value did not differ in cases with glucose-induced genotoxicity (GIGT+) or without it (GIGT-). Indirect signs of IR (body weight excess, C-peptide levels) were not associated with indicators of adipogenotoxicosis in mammary fat explants of pre- and postmenopausal breast cancer patients. Additionally, hyperinsulinemia and other hormonal-metabolic disturbances typical for IR did not increase the probability of DNA damage of somatic cells (according to the data of micronucleus test) in endometrial cancer patients. Thus, the third feature of IR is the absence of its obvious association with genotoxicity at least in certain situations that evidences the need of differentiated approach to correction. Supported by RFBR grant 06-04-48159.

29. AGE PECULIARITIES OF CALORIE RESTRICTION EFFECT ON RESPIRATION AND OXIDATIVE PHOSPHORYLATION OF RAT LIVER MITOCHONDRIA

L.I. Bilostotska¹, V.I. Padalko², Yu.V. Nikitchenko²
(¹State Scientific Center of Drugs, Kharkov; ²Research
Institute of Biology, V.N. Karazin Kharkov National
University, Kharkov, Ukraine;
lubilost@ukr.net)

The most successful model of life-span prolongation for experimental animals is the calorie restricted diet (CRD). The effect of CRD is considered to realize mainly through the change of functional activity of mitochondria (MT). One of the factors influencing on MT oxidative phosphorylation (OP) is endogenous free fatty acids (EFFA), which are not only the substrates of oxidation in MT but also the uncouplers of respiration and OP. The purpose of the study was to investigate the age peculiarities of EFFA effect on parameters of OP in liver MT of 4- and 24-month control rats (nutrition ad libitum) and 4- and 35-month rats on CRD (beginning from

1 month). V_2 , V_3 , respiration control (V_3/V_2 ; RC) and ADP/O were registered polarographically under oxidation of NAD^\pm (glutamate+malate; β -hydroxybutyrate, β -HB) and FAD^\pm -dependent (succinate) substrates in presence of EFFA and under binding of EFFA (reaction medium with bovine serum albumin; BSA). It was established that in adult rats in both medium (with or without BSA) age differences of OP parameters under glutamate+malate and succinate oxidation were absent, but under β -HB oxidation V_3 and RC were lower in 24-month rats than in 4-month ones. In both control groups the presence of BSA had the effect only under β -HB and succinate oxidation, leading to V_2 decrease and RC increase. In CRD-rats age peculiarities were expressed in increase of V_2 under glutamate+malate (with or without BSA) and under β -HB (without BSA) oxidation in 35-month rats in comparison with 4-month ones. The effect of EFFA on OP in CRD-rats was more expressed than in control animals. In young CRD-rats in presence of BSA RC was higher under oxidation of all substrates (by 25–61%), V_2 was decreased (by 24%) and V_3 was increased (by 20%) under succinate oxidation. In old CRD-rats the influence of BSA on RC was more marked in comparison with young ones. In medium with BSA V_2 was decreased by 38% under β -HB oxidation and by 27% under succinate oxidation; RC was increased by 93% and 63% accordingly. Thus, under «normal» aging there were not age differences in EFFA effect on respiration and OP under NAD^\pm , as FAD^\pm -dependent substrates. Liver MT of CRD-rats are in more uncoupled state compared with control, the degree of this uncoupling is higher in old rats; but the efficacy of OP (judging by V_3 and ADP/O) is not decreased. This fact may cause the low level of generation of reactive oxygen species in CRD-rat liver MT.

30. THE KINETIC DEFICIT IN RELIABILITY OF SUPEROXIDE DISMUTASE AS THE POSSIBLE CAUSE OF AGING

T.N. Bogatyrenko¹, V.K. Koltover¹, N.D. Goncharova², T.E. Oganyan², A.V. Shmaliy², S.A. Smelkova² (¹*Institute of Problems of Chemical Physics of RAS, Chernogolovka, Moscow*; ²*Institute of Medical Primatology of RAMS, Sochi-Adler, Russia*; koltover@icp.ac.ru)

Superoxide radicals ($\text{O}_2^{\bullet-}$), that appear as the by-products of oxidative metabolism, and reactive products of $\text{O}_2^{\bullet-}$, the so-called reactive oxygen species (ROS), play presumably the causal role in aging (Harman, 1956). However, it has long been known that superoxide dismutase (SOD), the main antioxidant defense enzyme, is induced by its substrate, $\text{O}_2^{\bullet-}$. In effect, a balance of $\text{O}_2^{\bullet-}$ production and SOD activity is maintained in cells and tissues. Moreover, this balance is not deranged with aging under basal conditions (Guskova, Vilenchik, Koltover, 1979). The question arises whether this $\text{O}_2^{\bullet-}$ /SOD balance is violated under transient, particularly, stress conditions (Koltover, 1983). The goal of this research was to test this hypothesis. Female *Macaca mulatta* monkeys, 6–8 years (young) and 20–27 years (old), were subjected to the psycho-emotional stress, two-hours' immobilization at 9.00 or 15.00 h. The stress hormones, cortisol and dehydroepiandrosterone sulfate (DHEAS), in plasma of the animals' peripheral blood were measured before the stress (basal conditions) and 5, 15, 30, 60, 120, 240 min after the stress. In parallel, SOD, glutathione peroxidase (GSH-Px) and glutathione reductase (GR) were measured

in the blood erythrocytes. In the basal conditions, young animals demonstrated the well-defined circadian rhythm in SOD activity with maximum at 10.00 h and minimum at 22.00 h. The diurnal changes in the SOD activity tightly correlated with the diurnal changes in the levels of cortisol and DHEAS. With aging, the rhythms of SOD, cortisol and DHEAS are smoothed out although the correlation between the diurnal changes in cortisol and SOD is still maintained even for old animals (Goncharova et al., 2006). The well-known increase in consumption of oxygen under the stress conditions must cause the obligatory increase in production of $\text{O}_2^{\bullet-}$ as the by-product of respiration and, thereby, the SOD induction should have been anticipated. However, no changes in SOD and GPx activity were detected in our experiments. In the meantime, the GR activity demonstrated the significant growth, especially in the case of old animals, the dynamics of which tightly correlated with the increase in the level of cortisol in response to the stress (Goncharova, Shmaliy, 2006). The growth of the GR activity obviously reflects the increased consumption of GSH due to the increased production of ROS. Thus, the transient dynamics deficiency in activity of SOD under the stress conditions can indeed be a critical factor in free-radical pathologies, including aging.

31. A ROLE OF DELTA-SLEEP INDUCING PEPTIDE IN PREVENTION OF PREMATURE AGING

T.I. Bondarenko¹, N.A. Zhigalova¹, E.A. Maiboroda¹, I.I. Mikhaleva² (¹*Southern Federal University, Rostov-on-Don*; ²*Institute for Bioorganic Chemistry of RAS, Moscow, Russia*; savanna8@rambler.ru)

One of line investigations in the field of development of actions on increase of life span, improvement its quality is a search new and an estimation of efficiency of known remedies capable to protect an organism from premature aging. Expansion of our overviews about molecular-genetic mechanisms of peptide effects testifies to availability of peptide bioregulators use for prevention of accelerated aging and age-related pathology. One of such remedies is delta-sleep inducing peptide (DSIP). It is shown that DSIP is capable to decrease total spontaneous tumor incidence and to prolong the life span of animals (Popovich I.G., Voitenkov B.O., Anisimov V.N. et al., 2003), i.e. DSIP possesses geroprotective effect which mechanism is not established yet. In this connection the study of DSIP molecular effects in the regulation of homeostasis in aging is of interest. In our experiment exogenous DSIP was used subcutaneous injected to the rats in the age from 2 to 18 months during 5 consecutive days every month in a dose of 10 microg/100 g body weight. It is shown by us the increase of malonic dialdehyde (MDA) in the rats' brain and plasma and the increase in the level of extraerythrocytic hemoglobin (EEH) in plasma in aging, that testifies to the intensification of lipid peroxidation (LPO) and the destabilization of erythrocytic membranous structure. The level of the low-molecular antioxidants — urea and uric acid — in the rats' tissues and plasma increases. In the process of ageing, the increase of glucose level in plasma, a total cholesterol level and the decrease of a total calcium level in the serum is observed that indicates the disturbance of the carbohydrate and lipid metabolism, calcium homeostasis. The DSIP injection to the rats of different age reduces LPO

increasing a volume of non-enzymatic antioxidant system, limits the increase of EEH level and the levels of glucose and cholesterol, does not affect on calcium homeostasis.

32. TELOMERE LENGTH CONTRACTION IN PERIPHERAL BLOOD LEUCOCYTES IN PATIENTS WITH RHEUMATOID ARTHRITIS

V.I. Borisov¹, S.A. Demakov², A.E. Sizikov³,
V.S. Kozhevnikov¹, V.A. Kozlov¹ (¹*Institute of Clinical Immunology, Novosibirsk*; ²*Institute of Cytology and Genetics, Novosibirsk*; ³*Clinic of Immunopathology, Novosibirsk, Russia*; borisovslava@yandex.ru)

Telomere length in peripheral blood leucocytes obtained from patients with rheumatoid arthritis (RA) and normal controls were measured using Flow-FISH method. In RA patients telomere length contraction was found in lymphocytes, monocytes as well as granulocytes irrespective of age of onset but there was a strong positive correlation between disease duration and telomere length contraction in lymphocytes. We have measured proliferate activity and found that in RA patients were more lymphocytes in S/M phase than in donors with no differences for monocytes and granulocytes. Telomere length was found to be significantly shorter in CD8+ T-cells then in CD4+ T-cells in both RA patients and donors with minimal differences in lymphocytes from RA patients. At the same time in RA patients telomere length was shorter in both subpopulations CD8+ T-cells and CD4+ T-cells compared with donors. The proliferation activity was higher in CD4+ T-cells from RA patients with no differences in CD8+ T-cells between normal and patients. These results demonstrate that in RA patients an early immunosenescence takes place and moreover it happens independently on onset age of disease. Granulocytes, monocytes and lymphocytes showed a parallel decline in telomere length with age that most likely reflected accumulated cell divisions in the common precursors of both cell types: hematopoietic stem cells. Telomere contraction in lymphocytes is aggravated by homeostatic T-cells proliferation because of early involution of thymus exists in patients with RA and for the most part it happens due to proliferation of CD4+ T-cells.

33. DIFFERENTIATION OF RADIAL GLIA CELLS INTO ASTROCYTES IS A POSSIBLE AGEING MECHANISM IN MAMMALS

O.G. Boyko (*National Agrarian University, Kiev, Ukraine*; boyko-l@rambler.ru)

Several obscure facts of gerontology are briefly reviewed. The attempt is made to shape new notions of the phenomenon based on the astrocyte hypothesis of ageing in mammals. This hypothesis interprets mammal ageing as a genetic disease with fatal outcome. The disease is caused by single character acquired by the theromorph lineage of the vertebrates in the course of evolution: the transformation of radial glia cells (RGC) into star-shaped astrocytes during the postnatal development, i.e. the disappearance of the fetal radial ways of nerve cell migration from proliferative zones to the sites of their ultimate localization in the brain of adult individuals. This process is the cause for the mammal brain being postmitotic. The disappearance of RGC induces a cascade of system processes termed age-dependent mechanism of self-destruction of mammals (AMSM).

The disappearance of RGC inhibits the replacement of the nerve cells that have exhausted their living resources. Nerve cells are rigidly specialized and have restricted lifetime and ability of reparation. After some period, the level of homeostasis in nerve cells starts changing steadily for the worse due to irreversible pathological changes in the cells (especially in the neurosecretory cells). This brings damage to life-support systems of the mammal organism thus causing its death. The species-specific maximum life span is thus determined by the rate of metabolism in the organism. AMSM probably displays a general evolutionary principle: outer factors causing death (in non-ageing organisms) are replaced by inner factors.

34. AGTR1 AND NOS3 GENES POLYMORPHISMS: THE ROLE IN CARDIOVASCULAR DISORDERS AND RELATION TO LONGEVITY IN HUMANS

O.Yu. Bychkova¹, O.A. Makeeva¹, V.V. Pogrebenkova¹,
K.V. Puzyrev², I.V. Tsimbaljuk³, V.P. Puzyrev¹ (¹*Research Institute of Medical Genetics, Tomsk*; ²*Research Institute of Cardiology, Tomsk*; ³*Siberian State Medical University, Tomsk, Russia*; bolya_79@mail.ru)

Cardiovascular diseases (CVD) are the main reason of mortality and morbidity worldwide. The existence of shared genetic regulatory mechanisms for aging process and CVD are intended. Thus candidate cardiovascular gene polymorphisms may play a role in human longevity by means of modulating individual's adaptation to environmental factors. The aim of the study was to reveal the association of polymorphisms in known candidate genes encoding the Angiotensin II Receptor Type 1 (AGTR1) and Endothelial Nitric Oxide Synthase (NOS3) with cardiovascular parameters in patients with essential hypertension (EH) (n=136); hypertension combined with diabetes mellitus 2 (DM2) (n=95) and healthy controls (n=128). Genes' frequencies were obtained also from the group of nonagenarians (mean age=91,7±0,2) (n=92). A1166C polymorphism in 3'-UTR of AGTR1 gene was associated with the presence of left ventricular hypertrophy (LVH) (p=0,035) in patients with EH: those with LVH had 1.5 times lower AA homozygote frequency compared with patients without LVH. 1166C allele of the AGTR1 was associated with the larger left ventricular mass index (LVMI); patients with AC and CC genotypes had LVMI 165 and 172 g/m² compared to 138 g/m² for AA genotype (p=0,007). In patients with arterial hypertension combined with DM2 NOS3 VNTR4a/b polymorphism was associated with the presence of LVH (p=0,048) and also influenced the LVMI (p=0,010). To address the role of studied single nucleotide polymorphisms in cardiovascular candidate genes in human longevity both genotype and allele frequencies were compared between all patients groups. No significant differences were found in the frequency distribution among patients with CVD, long-livers and younger controls without CVD. Results of the present study confirmed the role of AGTR1 and NOS3 polymorphisms in CVD clinical course though no relation to longevity was shown. This fact demands for lager populations to be studied but we can also denote that the presence of CVD can be «a way» of individual's adaptation and survival in particular environment.

35. TELOMERE LENGTH AS A PREDICTOR OF HUMAN AGING: LINK WITH PSYCHOLOGICAL PERFORMANCE AND LIFE STYLE

A. Canela¹, E. Vera¹, G. Dedoussis², G. Herbein³, J. Jajte⁴, L. Rink⁵, D. Monti⁶, F. Marcellini⁷, E. Mocchegiani⁷, P. Klatt¹, M.A. Blasco¹ (¹Molecular Oncology Programme, Spanish National Cancer Centre (CNIO), Madrid, Spain; ²Department of Nutrition Science and Dietetics, Harokopio University of Athens, Greece; ³Department of Virology, Franche-Comte University, Besancon, France; ⁴Department of Toxicology, Faculty of Pharmacy, Medical University of Lodz, Poland; ⁵Institute of Immunology, RWTH-Aachen, Germany; ⁶Department of Experimental Pathology and Oncology, University of Florence, Italy; ⁷Immunology Center (Section: Nutrition, Immunity and Ageing) and Social Gerontology Unit, Research Department INRCA, Ancona, Italy; pklatt@cnio.es)

Telomeres are special structures at the ends of eukaryotic chromosomes that protect them from degradation and fusions. Telomerase, a reverse transcriptase that elongates telomeres, is not able to prevent telomere shortening associated to cell division in adult tissues. The notion that telomere shortening impairs organismal viability is supported by premature aging phenotypes in telomerase-deficient mice or by humans with decreased levels of telomerase and short telomeres such as dyskeratosis congenita and aplastic anemia. Due to the lack of suitable high-throughput assays to measure telomere length, only a paucity of studies validated telomere length as a predictor for organismal fitness in human populations. We have developed an automated high-throughput quantitative telomere fluorescence in situ hybridization platform, HT Q-FISH, which allows the quantification of telomere length as well as percentage of short telomeres in large human sample sets. Here, we report on the HT Q-FISH analysis of peripheral blood lymphocytes from 198 European donors ranging between 60 and 99 years of age. Telomere length distributions in these donors show an age-related decline of mean telomere length and appearance of cells with short (<6kb) telomeres. In addition, a comparison between French subjects and age-matched Italians revealed significantly longer telomeres in the French population. Similarly, telomere shortening with age was lower in French than in Italian donors. Accordingly, the percentage of nuclei with short telomeres was significantly decreased in lymphocytes from French subjects compared to Italian donors in all age groups studied. These results indicate that telomere length is associated with geographic factors, which in turn may be the result of both environmental and genetic factors. This finding supports the notion that telomere length is inherited or may be determined by an inherited factor as well as that telomere length may be influenced by environmental factors. We further used the HT Q-FISH method to address whether age-related psychosocial parameters, such as cognitive function (MMSE), perceived stress (PSS), and depression (GDS) are associated with telomere length. Interestingly, mean telomere length in peripheral blood lymphocytes from these donors significantly correlated with their MMSE score, whereas we did not detect any significant correlation between telomere length and perceived stress levels and depression. Together, these data indicate that telomere erosion, measured either as decreased mean

telomere length or increased abundance of cells with short telomeres, correlates significantly with age and age-related cognitive impairment. *This study was performed within the ZINCAGE project supported by the European Commission in the «Sixth Framework Programme», n°: Food-CT-2003-506850.*

36. AGE-RELATED DISEASES AND LONGEVITY: ROLE OF GENETICS OF INFLAMMATION

C. Caruso, G. Candore, D. Lio, S. Vasto, F. Liste, C.R. Balistreri (University of Palermo, Italy; marcoc@unipa.it)

In this presentation we discuss relevant data on ageing, longevity, and gender with particular focus on inflammation gene polymorphisms which could affect an individual's chance to reach the extreme limit of human life. In 2000–2005 in more developed regions, the life expectancy at birth is 71.9 years for men and 79.3 years for women. Indeed, gender accounts for important differences in the prevalence of a variety of age-related diseases. Considering people of far-advanced age, demographic data document a clear-cut prevalence of women compared to men, suggesting that sex-specific mortality rates follow different trajectories during ageing. In Italy this female/male ratio is relatively lower, but significant differences have been observed between Italian regions in the distribution of centenarians by gender. Thus, a complex interaction of environmental, historical, and genetic factors, likely plays an important role in determining the gender-specific probability of achieving longevity. On the other hand, inflammation is a complex network of molecular and cellular interactions that facilitates a return to physiological homeostasis and tissue repair. The individual response against infection and trauma is also determined by gene variability. Ageing is accompanied by chronic low-grade inflammation state clearly showed by 2–4-fold increase in serum levels of inflammatory mediators. A wide range of factors has been claimed to contribute to this state; however the most important role seems to be played by the chronic antigenic stress, which affects immune system thorough out life with a progressive activation of macrophages and related cells. This pro-inflammatory status, interacting with the genetic background, potentially triggers the onset of age-related inflammatory diseases as atherosclerosis. Thus, the analysis of polymorphisms of the genes that are key nodes of the natural immunity response might clarify the pathophysiology of age-related inflammatory diseases as atherosclerosis. On the other hand, centenarians are characterized by marked delay or escape from age-associated diseases that, on average, cause mortality at earlier ages. In addition, centenarian offspring have increased likelihood of surviving to 100 years and show a reduced prevalence of age-associated diseases, as cardiovascular disease (CVD) and less prevalence of cardiovascular risk factors. So, genes involved in CVD may play an opposite role in human longevity. Thus, the model of centenarians can be used to understand the role of these genes in successful and unsuccessful ageing. Accordingly, we report the results of several studies in which the frequencies of pro-inflammatory alleles were significantly higher in patients affected by infarction and lower in centenarians whereas age-related controls displayed intermediate values. Interestingly the frequency of

pro/anti-inflammatory gene variants also show gender differences. These findings point to a strong relationship between the genetics of inflammation, successful aging, and the control of cardiovascular disease, but seem to suggest that the evidence for men is much stronger. Understanding the different strategies that men and women seem to follow to achieve longevity may help us to comprehend better the basic phenomenon of ageing and allow us to search for safe ways to increase male lifespan. These data are also briefly discussed in the light of antagonistic pleiotropy theory and in order to pursue a pharmacogenomics approach.

37. PROTECTIVE EFFECT OF CALORIE RESTRICTION AGAINST MYOCARDIAL FIBROSCLEROSIS DURING AGING IN THE RAT

L. Castello¹, T. Froio¹, G. Cavallini², E. Bergamini², G. Poli¹, E. Chiarpotto¹ (¹ Department of Clinical and Biological Sciences, University of Torino, Italy; ² Interdepartmental Research Center on Biology and Pathology of Aging, University of Pisa, Italy; elena.chiarpotto@unito.it)

At present, one of the more popular theories of aging is the free radical and oxidative stress theory. In parallel, many studies on the pathogenesis of fibrosis in different chronic pathological diseases of various organs have demonstrated its association with an increased oxidative stress, and often with aging the fibrotic component of tissues increases. One of the few treatments shown to be really effective in slowing down aging is calorie restriction (CR). At least 10 hypotheses have been put forward to explain how CR works and between these the protection against the age-associated increase of oxidative stress remains on the top. In previous studies we showed that with aging in the arterial wall of rats oxidative stress and fibrosis increase and CR protects against both phenomena. The protective effect seems to be related to the inhibitory action of CR on the age-induced increase of lipid peroxidation products (4-hydroxy-nonenal, HNE) and on the consequent increase of MAPKs JNK and p38 activity. On this basis, we decided to extend the analysis of CR effect on oxidative stress and fibrosis of the heart during aging and on the signaling pathways potentially involved. We used Sprague Dawley rats of different age. CR was obtained by alternate feeding (EOD: Every Other Day) or with a 40% restricted diet (40% RC). We found a significant increase of HNE content in the heart of old rats with respect to the corresponding organ of young rats, accompanied by a parallel increase of TGFβ1 and collagen levels. CR, protecting against the increase of oxidative damage, also reduces fibrosis. As regards the signaling pathways involved, JNK and p38 do not show any variation with age, while ERK1 and 2 significantly increase. This age-related increase is protected by CR. The evaluation of SMAD pathway and of the activity of the transcription factors likely involved (AP-1, NFκB) is ongoing. Our results show that with aging also in the heart there is an accumulation of lipid peroxidation products with important biological activity (HNE), which can stimulate the production of the major pro-fibrogenic cytokine, TGFβ1, and consequently collagen deposition. The protection exerted by CR on oxidative stress and fibrosis can thus well be considered in the prevention of age-related diseases with sclerotic evolution. *Supported by the University of Torino and by Regione Piemonte, Italy.*

38. MODULATORY EFFECT OF AMINO ACIDS AND PEPTIDES ON THE CELLS IN ORGANOTYPIC TISSUE CULTURE

N.I. Chalisova¹, G. Haase² (¹ St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; ² Clinic of Immunotherapy, Prum, Germany; ni_chalisova@mail.ru)

Repair processes in tissues are known to be regulated by cytokines in opposite directions: cell proliferation or apoptosis. The most adequate method for a rapid quantitative evaluation of the direction of the effects of biologically active compounds is organotypic culturing of tissue fragments. The purpose of this screening investigation is to study the effects of all 20 amino acids and synthetic tetrapeptides on the development of an organotypic culture of brain cortex, spleen, liver explants of 1-day-old (immature) and 21-day-old (mature) rats. The culture medium contained Eagles basal medium with Earl salt, 25% fetal calf serum. The Petri dishes were incubated at 36.5 °C for 48 h and then examined under a phase-contrast microscope and by immunohistochemical methods. We determined the area index (AI), which was calculated as the ratio between the total area of all explant (together with the zone of migrating cells) and the central area of the explant. The effective concentration for all amino acids (Sigma, United States) was 0.05 ng/ml, for peptides 0.05–2 ng/ml. Asparagine, lysine, arginine, glutamine acid decreased AI of immature brain cortex, spleen, liver by 30–45% and increased AI of mature spleen, liver by 32–40%, compared to the control. The expression of the proapoptotic protein p53 increases in the cultures of 1-day-old rats by the addition of lysine, arginine, asparagine and glutamine acid. It is observed in mature brain cortex the expressive stimulating effect of another group of high hydrophobic amino acids. Immunohistochemical studies confirmed an increase of proliferation correlates with a decrease of apoptosis under the effect of synthetic tetrapeptides with the tissue specificity.

39. MODULATORY EFFECT OF AMINO ACIDS ON THE LIVER TISSUE CULTURE OF YOUNG AND OLD RATS

N.I. Chalisova, L.S. Kozina, V.V. Lesnyak (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; ni_chalisova@mail.ru)

Repair processes in tissues are known to be regulated by cytokines in opposite directions stimulating cell proliferation or apoptosis. The most adequate method for a rapid quantitative evaluation of direction of the effects of biologically active compounds is organotypic culturing of tissue fragments. The purpose of this screening investigation was to study the effects of all 20 amino acids on the development of liver explants organotypic culture in 1-day-old (immature), 21-day-old (mature) and 42-months (old) rats. The culture medium has contained Eagles basal medium with Earl salt, 25% fetal calf serum. The Petri dishes were incubated at 36.5 °C for 48 h and then examined under a phase-contrast microscope and also by immunohistochemical methods. The area index (AI), which was calculated as the ratio between the total area of all explants (together with the zone of migrating cells) and the central area of the explants have been determined. The effective concentration of all amino acids was 0.05 ng/ml. Asparagine, lysine, arginine, glutamine acid have a decreasing effect on AI in immature liver of 30–45% and at

the same time brought the increase of AI in mature liver by 32–40%, compared to the control. Other amino acids have not possessed so «mirror» effect. Only arginine and phenylalanine have produced the stimulating effect in the liver explants from old rats. Immunohistochemical studies have confirmed the enhancement of proliferation processes correlating with decrease of apoptosis under the effect of amino acids.

40. THE ROLE OF PROTEINS ENCODING OF APOPTOSIS IN THYMIC INVOLUTION IN AGING

A.Yu. Chebrakova, S.S. Konovalov (*St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; admin_pao@mail.ru*)

Age-related involution of the non-lymphoid component of the thymus and related reduced production of neuropeptides, cytokines and hormones are causes of the thymic atrophy and weakening of the immune system in elderly and senile people. Taking into account, that anti-apoptotic and pro-apoptotic proteins play key role in the regulation of processes of involution, the aim of this study was to investigate the changes in expressions of the pro-apoptotic protein p53 and the anti-apoptotic protein mcl-1 in the non-lymphoid component of the human with aging. The study was carried out on the human thymus of four age groups obtained during autopsy: antenatal dead fetuses, children of the first postnatal year, elderly and senile people. For the verification of the expression of p53 and mcl-1 proteins in thymus tissues an immunohistochemical method with the use of the respective monoclonal antibodies (titer 1:150, Dako) was applied. Morphometric investigations were performed using a system of computer analysis of microscopic images and a licence program Videotest Morphology 4.0. Statistical analysis was carried out with the program Statistica 6.0. A maximum of the protein mcl-1 expression was found in the fetal thymus and decreased during the first year of postnatal ontogenesis. At the same time, an increase in the expression of the pro-apoptotic protein p53 was determined (by 30% if compared with the fetuses). In the thymus of the elderly and senile people age group a significant decrease of the expression of the mcl-1 protein (by 16% if compared with the children in the first year of life) was observed. At the same time, the area of the expression of the protein p53 was significantly lower in the thymus of elderly and senile people (by 20% and 40%, resp.) as compared with the children in the first year of life. The analysis of the obtained results suggests that the deceleration of processes of thymic involution in people of the elderly and senile age groups is connected with the decrease of the production of the pro-apoptotic protein p53 in the non-lymphoid component of thymus but not with the increase of the expression of anti-apoptotic mcl-1 protein.

41. N-GLYCOMIC CHANGES IN BLOOD PROTEINS DURING HUMAN AGING: A POTENTIAL AGING BIOMARKER?

C. Chen¹, X. Liu¹, V. Vanhooren¹, L. Desmyter¹, M. Cardelli², C. Franceschi³, S. Dewaele¹, R. Contreras¹, A. Federico⁴, C. Libert¹ (¹*Ghent University, VIB, Department of Molecular Biomedical Research, Ghent, Belgium;* ²*I.N.R.C.A. Research Department, Ancona, Italy;* ³*Dept. Experimental Pathology, via S. Giacomo, Bologna, Italy;* ⁴*Universiy; degli Studi di Siena, Siena, Italy;* *chity@dmb.rugent.be*)

It is well accepted that the N-linked oligosaccharides of glycoproteins play important biological roles by in-

fluencing the functions of glycoproteins. Although many studies reported the importance of the structural changes of glycans during development and disease, little information is available on the changes in glycans during aging. Accordingly, age-related alterations of the glycans could be relevant to understanding the complex physiological changes in aging individuals. As an early step in this direction, we determined the changes in the blood N-glycome during aging in healthy humans, centenarians and in one Werner patient. N-glycan profiling of the human blood glycoproteins (present in the serum and the plasma as well as with IgG fraction) on different age groups of healthy persons shows substantial changes with increasing age in three major N-glycan structures: NG0A2F, NG0A2FB and NA2F. Above 40–50 years of age, there is an increase in under-galactosylated glycans and a decrease in the core fucosylated bi-galactosylated biantennary structure. These three glycan structures are also substantially changed in a Werner patient, to a level comparable or even more pronounced than those observed in a healthy Italian centenarian population. These data show that the glycosylation machineries in both, liver cells and B-cells are affected in a similar way by the aging process despite their highly different nature. The observed changes in the glycan structures are indicative that biosynthetic processes are at the basis of the changes, possibly together with changes in serum clearing of glycan-altered proteins. Our data suggest that measurement of the N-glycan level changes could provide a noninvasive surrogate marker for general health or for age-related disease progression, and for monitoring the improvement of health after therapy.

42. SERUM CYSTATIN C AS MARKER OF AGEING AND ATHEROSCLEROSIS

M.S. Cherkanova¹, T.G. Filatova¹, I.Yu. Bravve², T.A. Korolenko¹ (¹*Institute of Physiology of RAMS, Novosibirsk;* ²*Novosibirsk Medical University, Russia;* *T.A.Korolenko@iph.ma.nsc.ru*)

Cystatins superfamily is a low molecular weight proteins secreted to the extracellular space, acting as endogenous inhibitors of cysteine proteases (cathepsins B, L, H, K, S), some of these proteases reveal elastolytic activity (cathepsins K and S, produced in human atheroma). Cystatin C belongs as cystatins S, SA, SN to the second type of cystatins superfamily (Keppler, 2006), this inhibitor was shown to present in macrophages and PMN. Atherosclerosis is an inflammatory process, followed by formation of plaque, with infiltration of macrophages, secreted cystatin C and proinflammatory cytokines. The aim — to evaluate cystatin C concentration in serum of patients of different ages and atherosclerosis. Cystatin C concentration was measured by ELISA kits (BioVendor, Czechia), hs-CRP concentration — by BioSystems kits (Spain). Patients of 50–65 years old without clinical symptoms of ischemic heart disease and patients before operation of aorto-coronar shunting as compare to practically healthy donors (20–40 years old) revealed increased serum cystatin C concentration. At early post operation period of aorto-coronar shunting serum hsCRP level drastically increased up to 10 times (no significant elevation of cystatin C) with tendency to normalization of hsCRP level at the 4th day after operation. We can conclude that increased level of cystatin C was registered in older patients (possible one of the ageing marker?), while significant elevation of

hsCRP was typical for post operative stress development. Extracellular secretion of cystatin C can correlate with degree of atherosclerotic damage of vessels, especially in the locus of plaque formation. The role of serum cystatin C as a possible predictor or marker of ageing and atherosclerosis is discussed.

43. THE CHANGE REGULATION OF CARDIAC RHYTHM IN THE OLD HUMANS

N.A. Chermnykh, N.A. Igoshina, M.P. Roshchevsky
(Komi Science Centre of Ural Branch of RAS, Syktyvkar, Russia; nadezhda@physiol.komisc.ru)

The analysis of heart rate variability is carried on the basis of ECG researcher in 38 native Komi village inhabitants and 32 northern migrants' city inhabitants (60–97 years) in real vital conditions. The stable cardiac rhythm, and high amplitude of mode of RR-interval, and low variability and capacity of spectrum in dynamic rhythmograms (RG) are registered in the majority of these old humans. The high heart rate variability is shown only in 24% both at Komi and at migrants, and is caused by arrhythmia and extrasystole of various genesis. The structure of cardiac rhythm in RG of these patients was characterized by low amplitude of mode (18–44%), large TINN and high power of spectrum (6124–11852 ms²), and prevalence of low frequency (LF) and very low frequency (VLF) waves. The established fact of decrease of quantity extrasystole in individual RG at active orthostasis obviously is caused the mechanism of baroreflex regulation of cardiac rhythm. The prevalence of influence of sympathetic nervous system is revealed on the basis of the analysis of heart rate variability at arrhythmia. The heart rate variability is the marker of age changes of cardiovascular regulation of the old humans, and may be prognosis of pathological changes of heart function. *Supported by the grant of the scientific school of the academician M.P. Roshchevsky SS — 5118.2006.4.*

44. CLINICO-FUNCTIONAL MANIFESTATIONS OF PREMATURE AGEING PATHOLOGY IN LIQUIDATORS OF THE CHERNOBYL CATASTROPHE CONSEQUENCES

E.S. Chernikova, R.K. Kantemirova, I.I. Zabolotnykh
(G.A. Albrecht St. Petersburg Research Center for Medico-Social Screening, Prosthetics and Rehabilitation of the Disabled; terapium@yandex.ru)

Accelerating premature aging in liquidators of the Chernobyl catastrophe consequences (LCC) corroborates the retirement age (50 y.o.) stated earlier by the law in force. This happens due to changes taking part in hypothalamus, pituitary gland and thyroid gland together with reduction of the thyroid gland function in case of natural and radiation induced ageing, increase in the dystrophic processes, weakening of antioxidant protection in case of chronic stress. In our clinic there were examined 126 of LCC of 1986–1989 aged from 45 to 60. The main reason of first visit to a doctor in old patients were blood circulation system pathology, diagnosed in 55,2% of patients. Among young patients (younger than 45 y.o.) 72,5% had no information about atherosclerosis in past history and only 7,5% suffered with CHD. Enlargement of the left atrium was registered only in 12,5% of LCC younger than 45 (the first group) and in 34,5% of LCC older than 45 (the second group). It was registered that in 20,0% of patients of the

first group and 55,2% of the patients of the second group the thickness of interventricular septum was more than 1,1 cm. 45,0% and 63,7% of LCC of the first and the second group correspondingly revealed regions of myocardium fibrosis and valvular calcification. ECG screening showed that 65% of patients have a pronounced initial depression of ST segment (0,87 mm at average) as a result of myocardium hypertrophy. The revealed changes developed in several years of follow-up. The frequency and intensity of heart rate changes were almost equal in both groups. *Conclusion:* Accelerating premature aging in liquidators of the Chernobyl catastrophe consequences is a result of an increased, age-related sensitivity to ionizing radiation. The development of the cardiovascular pathology is characterized not only by coronary vessels atherosclerosis but also by small-focal changes in heart with septum fibrosis regions, valvular fibrosis and calcification revealed in 65% of patients in case of ECG-screening of the pronounced ST segment depression.

45. AGE-RELATED EXPRESSION OF SEROTONIN AND ENDOTHELIN-1 IN HUMAN THYMUS

E.V. Chernishova, I.V. Knyazkin, P.N. Zezulin
(St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; alenka_otto@rambler.ru)

Thymus is a crucial organ of immune system. Thymus undergoes age involution hence, significant attenuation of immunity in elderly people occurs. The aim of our work was to verify the expression of serotonin and endothelin-1 in human thymus and to compare the levels of their expression at various stages of human ontogeny. Thymic samples were obtained at post-mortem examination in subjects of four age groups: prenatal fetuses, first-year children, elderly subjects, and senile people. For morphologic examination sections were stained with hematoxylin-eosin and toluidine blue. Verification of hormone expression was performed using immunohistochemical analysis with respective antibody (1:150, Dako). The immunostain was quantified by morphometry with using of the system of computer analysis of microscopical images Nikon Eclipse 400 and licensed program Videotest Morphology 4.0. Serotonin expression was observed in thymocytes, epithelial and other cells of thymic microenvironment, Hassal's bodies, as well as in vessel's endothelium. The optical density of immunostaining structures was elevated with aging and was maximal in senile group (2.06±0.01, p<0.05). The optical density of endothelin-1-expression in blood vessels increased with aging and reached its maximal value of 2.20±0.04, p<0.05, in elderly and senile people groups. Also, the percent of total area of endothelin-1-positive structures was greatly increased in two oldest age groups. Our data indicate that the endocrine function of human thymus is important during establishing its lymphoid component. Moreover, the expression of serotonin and endothelin-1 is essential in human thymus even after marked extinction of its immune function. It seems to be important that marked elevation of the expression of two vasoactive hormones — serotonin and endothelin-1 — in human thymus undergoing age involution indicates their active participation in compensatory reactions aimed at the regulation of immune processes in human organism under senescence.

46. EFFECT OF CALORIE RESTRICTION ON WOUND HEALING PROCESS DURING AGING

E. Chiarpotto¹, L. Castello¹, T. Froio¹, G. Cavallini², G. Poli¹, E. Bergamini² (¹*Department of Clinical and Biological Sciences, University of Torino, Italy;* ²*Interdepartmental Research Center on Biology and Pathology of Aging, University of Pisa, Italy; laura.castello@unito.it*)

The cellular and molecular mechanisms involved in the age-related wound healing slowing down, an important social and economic problem, are largely unknown. Moreover, malnutrition, often present in old people, predisposes to the impairment of repair processes. A better knowledge of healing modifications with aging is desirable to develop new dietetic/pharmacological interventions to decrease their incidence. Young (YR) and old (OR) Sprague Dawley rats were treated and fed as follows: ad libitum every day (AL); starved one day a week (FD and AD); starved every other day (EOD), from three months of age. AD group was injected a pro-autophagic agent (Acipimox) dissolved in saline in the starvation day, while the other groups received saline once a week. In the middle of the dorsum of the animals, after shaving, a full thickness 25×25 mm square wounds, including the cutaneous muscle, were made using surgical scissors without application of mechanical tension. After 6, 9 and 13 days, stripes of granulation tissue were excised and analysed. In the samples from YR we observed a progressive decrease of oxidative stress markers. In OR these markers were decreased with respect to YR particularly in the early phases. EOD restored them to YR values only after 9 days, while AD was effective in shorter times. As regards cytokines involved in the healing process, in YR TGFβ1 and TGFβ2 progressively decreased while TGFβ3 did not show any variation, with a consequent decrease of TGFβ1-β2/TGFβ3 ratio and hence a stimulation of healing process. In OR TGFβ1 levels were initially much lower than in YR, but afterwards became similar or even higher; TGFβ2 was not modified while TGFβ3 was significantly decreased. Consequently, TGFβ1-β2/TGFβ3 ratio progressively increased with a trend to a slower healing. EOD did not modify this pattern while AD restored TGFβ3 to YR levels, restoring by this way the healing ability. The net decrease of CTGF levels found in OR and not influenced by any treatment could also contribute to the age-related slowing down of healing process. In conclusion, the decrease of oxidative stress in the wound of OR could be related to a decrease with age of the respiratory burst activity of phagocytes, with consequent decreased anti-bacterial activity, and with a differential expression of cytokines resulting in slowed healing. The reduction of feeding per se did not seem to markedly influence this process while autophagy stimulation could have a positive effect by restoring TGFβ3 production. *Supported by the University of Torino and by Regione Piemonte, Italy.*

47. OLD TISSUE GROWTH POTENTIAL RESTORATION BY IMMUNE MODULATOR — TRANSFER — FACTOR (TF)

A.Y. Chizhov¹, V.A. Santalova¹, V.N. Krutko², V.I. Dontsov² (¹*Russian People Friendship University;* ²*National Gerontology Center, Moscow, Russia; ma21@mail.ru*)

Purpose: The major process of tissues ageing is connected to decrease of the tissues updating — to decrease cells growth potential. The opportunity of influence on tissues ageing — on the process of cellular growth of somatic tissues is connected to the V. Dontsov's theory of

regulation of growth of somatic tissues by subpopulations of T-lymphocytes (Dontsov, 1980–2007). It is obviously possible to use various immune modulators that lowering an age immunodeficiency for restoration of cellular growth potential decreasing with age (tissues rejuvenation). *Material and methods:* Mice Balb/c, female, 12 months age and also young mice. The thirst one received the Transfer factor (4 Life Research Co.), dissolved in a physiological solution, once a day N 10, in a doze similar used at human (1 capsule on 50 kg of weight). As the test for of cellular growth potential were used hyperplastic reaction of the salivary glands tissues on isoproterenol — Selje phenomenon (increase in weight in 24 hours). It was investigated also: thymus and spleens weight, mononuclears from a spleen (ficoll density 1,09 and 1,065 — the activated cells of a spleen). *Results:* It has been shown, that isoproterenol increase the weight of young mice salivary glands in 1,56–1,72 times. All old animals show the decrease in weight salivary glands on isoproterenol introduction. TF Introduction restored the cellular growth potential of old mice at all animals to the level of young one — isoproterenol increased the weight of salivary glands in 1,45–1,67. Simultaneously sharply (in 2–3,5 times) the quantity of the activated cells of a spleen increased, and also thymus reaction on stress (the decrease in weight on introduction the isoproterenol) was reduced. *Conclusion:* TF stabilized and activated the function of T-lymphocytes of old animals and restored cellular growth potential. It may be the perspective means in «Anti-Ageing Medicine», and also in the activation of cellular growth at various pathological processes with the purpose of tissues healing, wounds healing etc.

48. PERITONEAL LEUCOCYTES OF VERY AGED MICE SHOW THE ACTIVATION OF NUCLEAR FACTOR KB AND THE INFLAMMATORY CYTOKINES AT SIMILAR LEVELS TO THE ADULTS

M. De la Fuente¹, J.M. Lord², J. Caamano², N.M. De Castro¹, I. Baeza¹, L. Arranz¹ (¹*Complutense University of Madrid, Department of Physiology (Animal Physiology II), Faculty of Biology, Madrid, Spain;* ²*Institute for Biomedical Research, Medical School, Birmingham University, Division of Immunity and Infection, United Kingdom; mondelaf@bio.ucm.es*)

The age-related deterioration of the immune cell functions seems to be the result of an oxidant/antioxidant imbalance, with increased production of oxidant and inflammatory compounds and decrease of antioxidants. Moreover, the long-lived animals are those that maintain an adequate immune response, which might be a major reason for achieving very old ages in good health. However, the mechanisms underlying this successful ageing of the immune system remain unclear. Some studies have focused on the possible role played by the nuclear factor kB (NFkB), since it was found to be induced by inflammatory cytokines, and leads in turn to increased oxidative and inflammatory stress that regulates the transcription of genes encoding a variety of compounds involved with essential cell functions, such as adhesion, proliferation, migration and apoptosis, among others. Nevertheless, the results in this respect are inconsistent. In the present work, ICR (CD1) female mice of different ages: mature (44±4 weeks), late mature (69±4 weeks), old (92±4 weeks) and long-lived (125±4 weeks) animals, were used. Peritoneal leucocytes were collected and several parameters, namely inflammatory cytokines, such as IL-1β, IL-6 and TNF-α (measured by luminex technology on 48h culture supernatants in both basal and lipopolysaccharide (LPS)-stimulated conditions) as well as NFkB activation (measured by

electrophoretic mobility shift assays, EMSAs), were determined on them. With ageing, the results show that there is an increased release of inflammatory cytokines and activation of NF κ B in leucocytes. However, the immune cells of the long-lived animals seem to preserve those values closer to those shown by animals at younger ages. Thus, the maintenance of an adequate and controlled activation of NF κ B seems to be a key mechanism to achieve healthy ageing of the immune cells and, therefore, of the organism. *Supported by MEC (BFU2005-06777) grant and RETICEF (RD06/0013/0003) (ISCIII) of Spain.*

49. EXACERBATION OF CEREBRAL ISCHEMIA IN THE AGED BRAIN IS LINKED TO LOWER EPKC LEVELS

D. Della Morte¹, K.R. Dave¹, P. Abete², F. Rengo², M.A. Perez-Pinzon¹ (¹*Cerebral Vascular Disease Research Center, Dept. of Neurology and Neuroscience, University of Miami Miller School of Medicine, FL-33101, USA;* ²*Dipartimento di Medicina Clinica, Scienze Cardiovascolari ed Immunologiche, Cattedra di Geriatria, Università di Napoli «Federico II», Italy; DMorte@med.miami.edu*)

Introduction: Several studies using different models of cerebral ischemia demonstrated that aged rat brain is more susceptible to ischemia than young and middle-age rat brain [1]. Some of the mechanisms of brain injury after an ischemic episode involve δ PKC and γ PKC activation [2]. In contrast, ϵ PKC is involved in neuroprotection against cerebral ischemia. We tested the hypothesis that aged rat brains are more susceptible to ischemia because of their lower ϵ PKC levels. *Methods:* We used the method common carotid artery occlusion with hypotension to induce global cerebral ischemia in Fisher 344 rats [4]. At the first time young (n=3, 4-month-old), middle-age (n=3, 12 month-old) and old (n=3, 24 month-old) male Fisher 344 rats were exposed to 10 min of this model of cerebral ischemia. Only rats belonging to young group survived. Middle-age (36 \pm 1.5 hours) and old (23 \pm 1.2 hours) Fisher 344 rats died approximately one day following the ischemic insult. Then global cerebral ischemia was induced in young rats (n=6) for 10 min, in middle-age rats (n=5) for 8 min, and in old rats (n=5) for 2.45 min. The blood pressure was maintained 50 mmHg in the young animals and 70 mmHg in the middle-age and old animals before and during each ischemic insult. After 7 days of reperfusion, brain sections were examined for histopathological changes within the CA1 hippocampal region. We determined the levels of γ PKC, δ PKC and ϵ PKC in soluble and particulate fractions of young (n=4, 4 month-old) middle-age (n=4, 12 month-old) and old (n=4, 24 month-old) rats by Western blot. Results were expressed, as mean \pm SEM. Statistical significance was determined with an ANOVA test followed by a Bonferroni's post-hoc tSt. *Results:* Baseline normal neuronal count was not significantly different among the 3 groups (young, 1133 \pm 31.70; middle-age, 917 \pm 62.50; and old, 964 \pm 72.83) after histopathology analysis besides different severity of ischemic insult (10, 8 and 2.5 min, respectively). In soluble fractions of hippocampal neurons no significant changes were observed in the levels of γ PKC, δ PKC and ϵ PKC among the three groups. However, in particulate fractions of old rat hippocampus the levels of ϵ PKC was lower by 21% and 30% (78.92 \pm 2.85, p<0.05), compared to young and middle-age, respectively. However, the levels of γ PKC and δ PKC were unchanged. *Conclusion:* We conclude that the increased cerebral susceptibility after ischemic injury in aged rats could

be due to, at least in part, the lower levels of ϵ PKC in the particulate fraction of aged neurons. References: [1] Davis M. et al., *Stroke* 1995;26(6):1072-8. [2] Di-Capua N. et al., *J Neurochem* 2003;84(2):409-412. [3] Raval A.P. et al., *J Neurosci* 2003;23(2):384-391. [4] Perez-Pinzon M.A. et al., *Adv Exp Med Biol* 1997;428:155-161. *Supported by PHS grants NS34773, NS05820, NS045676 and NS054147.*

50. LYMPHOCYTES-REGULATION OF SOMATIC CELLS GROWTH: SIGNIFICANCE IN AGEING

V.I. Dontsov, V.N. Krutko (*National Gerontology Center; dontsovvi@mail.ru*)

Purpose: The analysis of series of experimental facts indicates on ability of T-lymphocytes to regulate the growth, regeneration and self-renovation of nonimmune — somatic cells of different tissues of organism. These facts requires the close theoretical and experimental study this problem. *Material and methods:* The theoretical computer models of interaction of several proliferated cells in evolution aspects, as experimental models on mice were used: the lymphocytes regulation of liver regeneration, the lymphocytes regulation of mice and rat submandibular salivary glands hyperplasia on isoproterenol injection (Selje phenomenon), the lymphocytes regulation of tumour growth and the immune reaction and these processes interference. *Results:* Isolated T-lymphocytes were investigated by methods of cell and molecular biology and immunology. The review of references and our researches has shown, that specific T-lymphocytes subpopulations (precursors of T-cells and T-cells reacted in mixed culture with autologous somatic cells) are able to stimulate and suppress the growth of somatic cells of different tissues types by somatic cells regulating growth factors secretion. Specific effects (specific regeneration memory etc) and non-specific effects (different types cells growth interaction etc) has been shown. These cells may be isolated by various methods (Ficoll step gradient centrifugation etc.) and in detail to characterize. The influences of some immunopharmacology agents on these cells permit to influence the somatic cells growth processes. The decrease of such T-cells function with age can be important for ageing processes, especially for self-renovated tissue consisted of proliferated somatic cells. *Conclusion:* It permits to think about the existence of specific, separate from immune, system in organisms. The main purpose of this system existence, represented by some T-lymphocytes subpopulation, is to regulate cell-to-cell interaction during different types cell proliferation and tissue growth. This system, in this way, must be the evolutionary the first system integrated multicellular organism at whole, single system. The decrease of function of these cells with age to determine the decrease of cell self-renovation and growth potentiation decrease in old organism.

51. MATHEMATICAL MODEL WHICH MAKES IT POSSIBLE TO OBTAIN THE WHOLE DIAGRAM OF AGE MORTALITY AND ITS PROBABLE PHYSIOLOGICAL SENSE

V.I. Dontsov, V.N. Krutko (*Institute for Systems Analysis of RAS, Moscow, Russia; dontsovvi@mail.ru*)

Purpose: The mathematical simulation all substantial graphics of a mortality of the man till now yet is not conducted; the most known B.Gomperts model features only its average part. By the purpose of assay was the simula-

tion of regulatory influences on the process of cells regeneration as the probable central mechanism of ageing for self-renovated tissues of mammals. *Material and methods:* The main method was the theoretical computer simulation of probable changes of regulatory influences on intensity of cells self-renovation intensity with age as the basis of lowering of viability and rise of a mortality of an organism as a whole. *Results:* We propose the next general theory of growth regulation in organism and ageing. Let level of renovation in multicellular organism (and general organism mass as its function) be depended on concentration of some stimulated renovation factor «F» — the product of special positive regulator cells «D». For time-depended growth during some years it is necessary the positive F-factor gradient (as constant level may leads only to some fixed maximum during some days). The well-known biological mechanism for this situation realization is time-dependent natural death of negative regulator cells «I»: the balance $D - I = F$ is resulting in stimulation of growth or its restriction. If the «D» cells is non-renovated, there is period of ageing as result of decreasing of «D» cells number due to formula: $dD/dt = -K_d * D$, $dI/dt = -K_i * I$, ($K_d < K_i$). The age mortality is presented here as $\log(1/F)$ due to general theory of ageing as decreasing of «general vitality» (as function of cell renovation intensity). Anyone may see the well coincidence of theoretical curve and any experimental and demographic real age mortality curves (For optimal: $D_0 = I_0 = 100$, $K_d = 0.01$, $K_i = 0.05$, $c = 10$, $M = \ln(1/(F+c)*100)*100$). *Conclusion:* The results is coincident with regulator group theory of aging and the main mechanism of aging as the decreasing of renovation intensity of different regenerated units in organism. The specific morphological substrates may be — regulator non-renovated cells of hypothalamus, deferent growth factors in blood; for peripheral mechanisms — proliferated somatic cells and some mechanisms of its regulation, especially, some types of T-lymphocytes, that regulate proliferation of somatic cells.

52. THE NEUROMEDIATOR RECEPTORS NUMBER ON MICE LYMPHOCYTES CHANGE IN AGEING

V.I. Dontsov, V.N. Krutko (National Gerontology Center, Moscow, Russia; dontsovvi@mail.ru)

Purpose: Neromediators play the important role in development of immune responses, including by means of direct influence on lymphoid cell. In connection with age immunodeficit it is the important question the learning receptors number on lymphocytes to neuromediators during life. *Material and methods:* Lymphocytes of a lien of mice BALB/c in the age of 1–2 days, 1, 3 and 12–15 months were investigated. The receptors number was studied by a radiological method with application ^3H - dihydroalprenolol (adrenergic receptors), ^3H -quinuclidin (cholinergic receptors) and ^{125}I - (met)enkephaline (receptors to neuropeptides). For definition of response on an epinephrine of lymphocytes of mice the «KIT» (Amersham) for definition cAMP was used. *Results:* The expressed change of number of receptors for all researched agents during life on lymphocytes of a lien for mice was exhibited. The maximal number of receptors was reached for all researched agents in the age of 1 month and then was reduced by 12 months: for adrenoreceptors — in 1,8-2 times, for cholinergic receptors — in 3–3,2 times, for neuropeptid — in 2 times.

The basal cAMP level of lymphocytes was reduced in 2 times and increase cAMP on an exposure of an epinephrine in 2,8-3 times was reduced also. *Conclusion:* During aging the number of receptors to neurotransmitters on lymphocytes of mice is evenly reduced, that, probably is the result of a common cells metabolism lowering.

53. HUMAN AGEING IS NOT ACCOMPANIED BY DECREASING OF GENOMIC DOSAGE OF RIBOSOMAL GENES

N.A. Egolina¹, N.A. Lyapunova¹, N.N. Veiko¹, E.V. Mkhitarova¹, T.G. Tsvetkova¹, I.A. Mandron¹, N.V. Kosyakova¹, E.M. Malinovskaya¹, R.K. Agapova¹, L.N. Porokhovnik¹, G.M. Mestergazi² (¹Research Centre for Medical Genetics of RAMS, Moscow; ²War Veterans Municipal Hospital № 2, Moscow, Russia; lyapunova@med-gen.ru)

Among the genetic causes of ageing, the great attention is paid to the state and operation of ribosomal genes (RG). Some works report decreasing in the number of 'working' (active) RGs with aging (Buys et al., 1979; Denton et al., 1981; Das et al., 1986; and others). The conclusions are based on the decreased number of active nucleolus organizer regions (NORs) of metaphase chromosomes, discovered by selective staining with silver nitrate (Ag-staining), and/or on the reduced associative index (AI; percentage of metaphases with NOR-chromosomes involved in associations) attributed to senile NORs. The purpose of the work was quantitative estimation of the RG in genomes of senile age individuals (SAI; ≥ 80 years old), in comparison with control donors group (CDG; 18–65 y.o.). Using a modified Ag-staining technique, we developed a method to determine the genomic dosage of active RG (AcRG), expressing it as total size of 10 AgNORs in arbitrary units (au). The copy number of ribosomal repeats (rDNA) in genomic DNA was determined by the quantitative dot-hybridisation technique. The following results were obtained. (1) Average numbers of active (Ag⁺)NORs in SAI (n=87) and CDG (n=91) did not differ and were 8.97 ± 0.09 (\pm SE) and 8.96 ± 0.08 , consequently. (2) Both samples showed approximately the same AI. On the 72nd hour of lymphocyte cultivation AI values were 71.1% and 76.0%. (3) Genomic dosages of AcRG were determined for 87 SAI and 137 CDG. By the average AcRG dosage (\pm SE), the SAI (18.9 ± 0.14)au, did not differ from the CDG (19.1 ± 0.1)au, but was marked by less variance (1.73 against 2.63 ; $F=1.52$; $p=0.016$). (4) The number of rDNA repeats was determined in the DNA of blood lymphocytes of 78 SAI (404 ± 5.4)copies and 108 CDG (412 ± 9.9). As in the case of AcRG dosage, there were no differences. However, sampling limits for the SAI (272-568) appeared to be considerably closer, than those for the CDG (205-640), the difference of variances was highly significant ($F=4.60$; $p < 0.001$). (5) The number of (Ag⁺)NORs and dosage of AcRG have not been changing in the lymphocytes of a certain donor within 15 years (from age 50 till 65). In general, our data did not prove the notion of decreasing in the RG copy number and activity with ageing. At the same time, we can assume higher viability (hence, probability to have longer lifetime) of the individuals with medium ('adaptive') RG dosages. Earlier we came to the same conclusion comparing AcRG genomic dosage in newborn and adult (10–40 y.o.) patients with Down's syndrome. Supported by the Russian Foundation for Basic Research, project #05-04-48101.

54. THE ROLE OF MAST AND DENDRITIC CELLS IN AGING OF HUMAN THYMUS

E.S. Fedorova, V.O. Polyakova (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; admin_pao@mail.ru)

The key role in the regulation of thymic functions is carried out by cells of its microenvironment, especially by mast and dendritic cells. Taking into account, that these cells play significant role in the formation of immunity, the study of their behaviour in thymus during aging is important in the order to improve the understanding of pathogenesis of immunodeficiencies, which are associated with aging. The study was performed on thymic samples received under autopsy at people of four age groups: fetus (with 22 for 36 week of gestation), children of the first year of a life, older people (65–79 years) and people of senile age (80–95 years). For verification of NO-synthase and CD35 expression the immunohistochemical method has been used. The expression of NO-synthase is verified in mast cells which are settling down in medulla and cortex of thymus, as well as in immediate proximity to Hassall's bodies and to vessel walls. The parameter of optical density of mast cells authentically increases during postnatal ontogeny ($p < 0,05$) and is highest at people of elderly and senile age ($2,33 \pm 0,31$ and $2,34 \pm 0,34$ accordingly). The calculation of percent of the total area of mast cells demonstrated, that the highest value of this parameter is in the group of older people ($33,63 \pm 1,18$ %). The specific immunostain of CD35-positive dendritic cells is revealed mainly in cortex as well as in immediate proximity from intralobular perivascular spaces. The minimal value of optical density ($2,30 \pm 0,28$) is revealed in fetus thymus. The parameters of percent of the total area authentically it is less ($p < 0,05$) at the first and fourth groups ($28,33 \pm 0,98$ and $26,27 \pm 0,17$ accordingly) in comparison with the second and third groups. Thus, authentic increase of expression NO-synthase in thymus of elderly and senile people testifies the direct participation of this enzyme in the processes of thymic age involution. At the same time, the quantity of mast cells increases with age, reaching a maximum in the group of older persons. At senile people the population of mast cells that have immunopositivity to NO-synthase decreases. It could be probably connected with a loss of receptor to the stem cell factor (c-kit) by them, and thereof decrease of proliferative potential. The quantity of dendritic cells authentically decreases at senile people that is connected with structural involution of thymus. Thus, the quantity of receptors CD35 on them increases at people of elderly and senile age, carrying out protective function from attack by own complement system which can occur at autoimmune processes which frequency with the years increases.

55. ON SOME STOCHASTIC MODELS OF AGING

M. Finkelstein (University of the Free State, Department of Mathematical Statistics, Bloemfontein, South Africa; FinkelM.SCI@mail.uovs.ac.za)

Some stochastic approaches to biological aging modeling are studied. As the simplest model we assume, firstly, that an organism acquires a random resource at birth and that aging is described by the process of damage accumulation. Death occurs when the accumulated damage exceeds this initial value, modeled by the discrete or continuous random variables. Another source of death of an organ-

ism is also taken into account, when it occurs as a consequence of a shock or of a demand for energy, which is a generalization of the Strehler-Mildwan's model (1960). We show that without additional unjustified assumptions this approach does not necessarily lead to the exponential mortality curve of the Gompertz law. The combined model of damage accumulation in the presence of shocks is also considered. Biological (virtual) age, as opposed to the calendar age of an organism, is discussed and new mathematical models for its description are suggested. One of the corresponding definitions is based on the observed degradation, the other-on the mean remaining lifetime. We compare both definitions and describe some settings when one definition is more preferable than the other. Aging properties of repairable systems are also discussed. We show that even in the case of imperfect repair, which is certainly the case for organisms, the properly defined aging slows down with age and eventually can even fade out. This presents another possible explanation for the human mortality rate plateaus.

56. DO LIPID RAFTS CONTRIBUTE TO T CELL ACTIVATION CHANGES WITH AGING?

T. Fulop¹, A. Tomoiu¹, C. Fortin¹, A. Larbi² (¹University of Sherbrooke, Qc, Canada; ²University of Tubingen, Germany; tamas.fulop@usherbrooke.ca)

Aging is associated with an increased susceptibility to infections, cancer, auto-immune disease. Adaptive immunity especially T-lymphocytes are the most affected by aging and this is mainly explained by impairments in T-cell receptor (TcR) signalling. Recent findings suggest that cholesterol-enriched microdomains called lipid rafts act as a platform in the initiation of T-cell activation by formation of the initial complex called signalosome. Since the age-related immune deficiencies are accompanied by defects in TcR signalling, our laboratories sought to determine the links between lipid rafts and immune senescence. We studied lipid rafts composition in CD4⁺ and CD8⁺ T-cells from young and elderly donors. We found that CD4⁺ T cells activation completely rely on lipid rafts polarization whereas that of CD8⁺ T cells did not need lipid rafts polarization, because resting CD8⁺ T-cells already possess triggered lipid rafts. Moreover, CD4⁺ T-cells signalling is severely impaired in aging while CD8⁺ T-cells respond to stimulation when compared to young donors. There is also an alteration in the SHP-1 tyrosine phosphatase activity. The age-related increase in cholesterol content of lipid rafts is accompanied with a decline in rafts fluidity. Studies on HDL-driven cholesterol transport indicate that the pool of cholesterol in lipid rafts is differentially extracted with aging suggesting defects in this process of membrane cholesterol regulation. Both CD4⁺ and CD8⁺ T-cell cholesterol content is increased in aging however, CD8⁺ T-cells did not rely on lipid rafts for their activation explaining why changes in rafts properties (cholesterol content, fluidity, signalling molecule composition) did not have such consequence on activation as observed in the case of CD4⁺ T-cells. In this context we found a differential signalling via CD28 co-receptor among CD4⁺ and CD8⁺ T cells with ageing. Altogether, our data suggest that some properties of lipid rafts are altered in aging and the differences observed in T cells subsets suggest different roles of lipid rafts in lymphocytes signalling as well as in immunosenescence.

57. BIOSTRUCTURE AND AGING

O.I. Galavina (Research Institute of Biology, V.N. Karazin Kharkov National University, Kharkov 61077, Ukraine; Galavin@yandex.ru)

In order to elucidate the fundamental cause of aging one must take into consideration the notion about the nature and structure of the living matter. E. Bauer has formulated the principle of «stable inequilibrium» of living organisms and came to a conclusion that «molecular structure of the living matter is an inequilibrium distorted lattice which under dying becomes an undeformed lattice» (Bauer, 1935). The idea that the living state is determined by a peculiar structure was developed in the works by E. Macovschi who founded the biostructural theory (Macovschi, 1976). He believes that one part of the living protoplasm is integrated into a particular structure, which he called «biostructure» and the other part is an intracellular solution. The biostructure exists only in the living cell and breaks down with death. The existence and integrity of biostructure depends on an influx of energy. In the living tissues treated with substances inhibiting the metabolism the partial breaking of the biostructure occurs and in consequence of this an amount of free water and of hydrosoluble substances increases. So the quantity of some fractions of bound water is in keeping with that of the biostructure. In connection with aforesaid of great interest is investigation of changes of bound water in ontogenesis. Experiments were carried out on Wistar male rats of 1-, 3-, 12- and 24 mos. old. The bound water was determined by method of Ocuntsov and Marinichik (1964) in the tissues of brain, diaphragm, liver and skin of tail. The specimens of tissue dipped into the solutions of sucrose of different concentrations. In 3 hours the index of refraction is determined and the quantity of water which passed into solution is calculated. A difference between the water that pass to 42% and 25% solution of sucrose represents a fraction of bound water which is supposed to be a part of biostructure and was referred as Fraction «Vita». In all the tissues Fraction «Vita» significantly decreases in ontogenesis. Such lowering of this fraction testifies to a decrease of quantity and presumably to a change in the quality of biostructure under aging. The decrease of biostructure must be accompanied by increase of hydrosoluble substances in intracellular solution. Indeed the absorption of water by all the tissues dipped in diluted sucrose solutions significantly increases during ontogenesis. These data confirm the supposition about the decrease of the quantity of biostructure in ontogenesis and this index may be used as a marker of aging. So the decrease of biostructure is a fundamental cause of aging. Irreversible changes of biostructure are supposed to evoke wide spectrum of adaptive changes. It is precisely this fact that probable explains an increase of thermostability of DNA and collagen in ontogenesis. Age changes of biostructure may be considered as a decrease of order and an increase of entropy.

58. NATURAL DEATH RATE, ATMOSPHERIC NUCLEAR TESTS AND RADIOCARBON MECHANISM OF AGEING

A.M. Germansky (Independent research; gealeksandr@narod.ru)

Radiocarbon mechanism of ageing (RMA) is based on the hypothesis according to which ageing is initially caused by formation of point defects in the deoxyribo-

nucleic acid (DNA) in the result of nuclear disintegration of DNA-incorporated radiocarbon occurring according to the following scheme: $^{14}\text{C} \rightarrow ^{14}\text{N}$. Hardly repairable DNA point defects initiate chain process of information loss at DNA level. Mathematical description of such a model of damages development has led to the basic equation establishing the dependence between death probability, on the one hand, and age and ^{14}C -concentration in a person's organism, on the other hand. This equation has allowed us to explain in a uniform manner such already known laws of age-determined and historically-determined variations of human death rate, as Gompertz's law, Strehler-Mildvan's and Kremenova-Konradov's correlations. With the purpose of approbation of the aforementioned hypothesis, human mortality statistical data related to the period including sharp increase of atmospheric radiocarbon concentration, caused by the nuclear tests taking place within the period between the year 1945 and 1963, has been studied. In the year 1963 peak value of ^{14}C atmospheric concentration made almost 200 % relatively to the natural level. The dynamics of human natural death rate growth, within this period, corresponding with the radiocarbon atmospheric content has been illustrated on the example of several West-European countries. Due to the newest database «Human Mortality Database» (<http://www.lifetable.de>), characterized by the highest level of detalisation, both relating to historical, and to age time scale, the existence of Z-shaped line of dependence between the parameters of Gompertz's equation, observed within the period of «bombing» splash in concentration of radioactive carbon, has been revealed. In its most distinct manner, this Z-shaped line of dependence found itself in such countries as: Germany, Spain, Canada, Netherlands, Norway, France, Switzerland, Sweden, Japan. From the position of RMA hypothesis the afore-mentioned Z-shaped line of dependence is caused by the fact of the existence in a human organism of such a phenomenon as isotope fractioning at the stage of carbon incorporation into DNA molecules. As a result, the difference between ^{14}C DNA-concentration, on the one hand, and its concentration in surrounding cellular structures, on the other hand, is observed. It follows from the results received, that the fractioning efficiency can vary for different human populations and depend on the effect of powerful external factors on a person. One of the factors causing the increase of the difference between DNA concentration of ^{14}C and its concentration in the surrounding cellular structures is such a factor, as sharp increase of biospheric radiocarbon content.

59. BIOCHIP TECHNOLOGY FOR GENE POLYMORPHISM DETECTION IN LONGEVITY INVESTIGATION

A.S. Glotov, O.S. Glotov, T.E. Ivaschenko, V.S. Baranov (D.O. Ott Research Institute of Obstetrics and Gynecology of RAMS, St. Petersburg, Russia; anglotov@mail.ru)

Research of the genetic markers which are responsible for hereditary predisposition to multifactorial diseases — the leading reasons of ageing is an overall objective modern of predictive medicine. In practice such purpose can be reached by molecular testing the genes which are «susceptibility» or «predisposition» genes. These studies are inevitable without new technology for precise and simultaneous identification of numerous genetic polymorphisms in the same subject. The method of DNA-chips incorporat-

ing multiplex PCR with the subsequent hybridization on oligonucleotide matrix is now one of the most perspective methods for the decision of this problem. We have already elaborated and use for routine studies two biochips: «pharmacogenetic biochip» (CYP1A1, CYP2D6, GSTM1, GSTT1, NAT2, MTHFR, CYP2C9 and CYP2C19), «cardiochip» REN, AGT, AGTR1, AGTR2, BKR2, MTHFR, ADRB2. New biochips are under development for the analysis of genes polymorphism associated with thrombophilia and osteoporosis. Biochip technologies enable quick, effective and precise estimation of many genes and thus pave the way to more objective estimation the physiological status of the organism, inherited predisposition to some common multifactorial diseases as well as give a clue to understanding longevity and ageing processes.

60. ANALYSIS OF POLYMORPHISMS OF AGT, ACE, AGTR1, PAI1, GPIIIa, MTHFR, NOS3, GSTT1, GSTM1 AND NAT2 GENES IN ASSOCIATION WITH PREDISPOSITION TO MULTIFACTORIAL DISEASES IN ELDERLY PEOPLE

O.S. Glotov, A.S. Glotov, G.S. Demin, M.V. Moskalenko, N.Y. Shved, M.V. Aseev, V.G. Vakharlovsky, T.E. Ivashchenko, V.S. Baranov (*D.O. Ott Research Institute of Obstetrics and Gynecology of RAMS, St. Petersburg, Russia; olgotov@mail.ru*)

The polymorphisms of 10 genes (*AGT*, *ACE*, *AGTR1*, *PAI1*, *GPIIIa*, *MTHFR*, *NOS3*, *GSTT1*, *GSTM1*, *NAT2*) responsible for multifactorial diseases were studied in the group of elderly people — 148 unrelated individuals over 70 years with and without CHD, essential hypertension, stroke, cataract and type 2 diabetes. The progressive decrease of genotype frequencies in the group with CHD compared to the group without CHD for 235T/235T(*AGT*) genotype (27.8% and 14.8%, respectively, $p=0.08$), I/D(*ACE*) genotype (61.1% and 46.3%, respectively, $p=0.12$), del/del(*GSTM1*) genotype (55.6% and 39.8%, respectively, $p=0.099$) and significant decrease of N/S(*NAT2*) genotype (63% and 38.8%, respectively, $p=0.028$); and increase of 677T/677T(*MTHFR*) genotype (0% and 7.4%, respectively, $p=0.093$) frequency were registered. Combined analysis revealed significant prevalence of C/-(*MTHFR*), N/S(*NAT2*), del/del(*GSTM1*) genotype in the group with CHD compared to the group without CHD (33.3% and 10.6%, respectively, $p=0.005$, OR=4.22, CI: 1.54-11.56). We have obtained decrease of genotype and allele frequencies in the group with type 2 diabetes compared to the group without type 2 diabetes for I/D(*ACE*) genotype (68.8% and 47.7%, respectively, $p=0.11$), del/del(*GSTT1*) genotype (29.7% and 12.5%, respectively, $p=0.15$), S(*NAT2*) allele (57.7% and 73.2%, respectively, $p=0.099$), A2/A2(*GPIIIa*) genotype (12.5% and 0.8%, respectively, $p=0.0021$; OR=18, CI: 2.86-113.21) and increase of the frequencies of 4/5(*NOS3*) genotype (12.5% and 33.6%, respectively, $p=0.086$), C/T(*MTHFR*) genotype (0% and 6.3%, respectively, $p=0.11$). The frequency of 235M/235M(*AGT*) genotype, which is protective for cardiovascular diseases, was 42.9% in the group with stroke and 22.4% in the group without stroke ($p=0.028$). We have found decrease of I/D(*ACE*) genotype frequency in the group with stroke compared to the group without stroke (64.3% and 46.6%, respectively, $p=0.092$). The decrease in frequencies of I/D(*ACE*) genotype in the elderly people with cataract compared to the elderly people without cataract (64% and 47.1%, respectively, $p=0.12$),

1166A/1166C(*AGTR1*) genotype (56% and 36.1%, respectively, $p=0.065$) and 4/4(*NOS3*) genotype (8% and 1.7%, respectively, $p=0.08$) and significant increasing of 4G/5G(*PAI1*) genotype (20.8% and 5.4%, respectively, $p=0.026$) were registered. Moreover, combined analysis revealed significant prevalence of genotype 4/4+5/5 (*NOS3*), 4G/4G+5G/5G (*PAI1*), 1166A/1166C(*AGTR1*) in elderly people with cataract group compared to the group without cataract (41.7% and 14.3%, respectively, $p=0.0018$, OR=4.29, CI: 1.72-10.67). So, it can be speculated that certain genotypes of studied genes are associated with some diseases in elderly people. Further, it is necessary to perform studies on various groups of different age, taking into account meta-analysis data to estimate the role of age-regulating genes and multifactorial diseases in aging.

61. ALTERNATIVE MONITORING SYSTEMS OF BIOLOGICAL TIME IN ONTOGENESIS MAMMALS

V.V. Golub (*Laboratory of zoological production, Cherkasy, Ukraine; golub@uch.net*)

The reversible stop of the development — «freezing» of biological age. Main principles of mammal development of an organism — the limited growth, the sizes of a brain as a major factor, defining the sizes of a body. Elevation hypothesis of ageing by V. Dilman, a role of hypothalamus as parts of a brain during ageing. The redusome hypothesis by A. Olovnikov. The age periods of mammal. Various speed of individual development fat dormouse — *Myoxus glis* in various light modes (rhythmic and arrhythmic). Hypothesis of two monitoring systems of biological time at mammals. Experiments with changes of light modes on fat dormouse and porpoises and their results: adjustable increase in duration of the current age period, opportunity reversible stops of development in an active condition. Obtained data testify in favour of the put forward hypothesis (two monitoring systems of biological time at mammals) and create preconditions for development of technology of prolongation of a life with reference to the human.

62. TELOMERE LENGTH DISTRIBUTION AS AN INDICATOR OF CELL POPULATION HISTORY

A. Golubev¹, A. Butov² (¹*State Research Institute of Experimental Medicine of RAMS, St. Petersburg;* ²*Ul'yanovsk State University, Ul'yanovsk, Russia; alalal@rol.ru*)

Telomere attrition may result from regular shortening events that accompany mitoses or from random free radical attacks. Because a critically short telomere length (TL) may trigger cell proliferation arrest, both mechanisms of TL decrease are believed to contribute to limiting cell proliferation. Exposure of cells to reactive oxygen species (ROS) is known to accelerate reaching of this so-called Hayflick limit (HL). However this may result from the ability of ROS to trigger cell proliferation arrest by mechanisms unrelated to TL shortening. To distinguish between these possibilities, we have developed a computer simulation model, which incorporates stochastic events occurring in virtual cells (VC) and resulting in VC division associated with regular TL decrease, in VC stochastic proliferation arrest, in random TL shortening, and in proliferation arrest upon achieving of a minimal TL. The model shows

changes in telomere length distribution resulting from the above events. Within the interval of about 1.05–1.20 of the ratios of the rates of the stochastic events that trigger cell division or proliferation arrest, TL distributions show bell-like shapes, which are skewed in the peculiar way often reported in published experiments. At these ratios and at reasonable estimated of TL and its amount lost upon VC division, realistic levels of HL are achieved. Interestingly, it is within this range of parameters, that HL is extremely sensitive to even minimal increases in the rate of cell proliferation arresting events. Random TL shortening at rates sufficient to result in HL decreases observed in published experiments has been shown to produce flattened bimodal or irregular TL distributions, which are very different from those ever reported in the literature. The modeling results are consistent with the clonal attenuation model of HL and suggests that ROS accelerate HL by mechanisms unrelated to their effects on TL, presumably by activation of the p53 protein.

63. IMPACT OF AGING ON HORMONAL REGULATION ON ANTI-OXIDANT ENZYME ACTIVITIES

N.D. Goncharova¹, T.N. Bogatyrenko², B.A. Lapin¹
¹*Institute of Medical Primatology of RAS, Sochi-Adler;*
²*Institute of Problems of Chemical Physics of RAS,*
Chernogolovka, Moscow, Russia; ndgoncharova@mail.ru)

Previously we reported that the diurnal changes in the erythrocyte superoxide dismutase (SOD) tightly correlate with the diurnal changes in the plasma levels of cortisol (F) and dehydroepiandrosterone sulfate (DHEAS) in monkeys and these diurnal rhythms of SOD, F and DHEAS are flattened with aging. *The aim* of the study was to examine chronobiological characteristics of the hypothalamic-pituitary-adrenal (HPA) axis functioning and the antioxidant enzyme activities in stress and aging. Female *Macaca mulatta* of 6–8 years (young mature) and 20–27 years (old) were subjected to acute psycho-emotional stress (two hours immobilization) at 9.00 or 15.00. Levels of ACTH, F, DHEAS, and testosterone (T) in peripheral blood plasma were measured before the stress and 5, 15, 30, 60, 120, 240 min and 24 h after the challenge. In parallel, activities of SOD, glutathione peroxidase, glutathione reductase (GR), and glutathione-S-transferase were measured in hemolyzed erythrocytes. Young monkeys demonstrated much higher increase of ACTH, F, T, DHEAS levels and GR activity in response to the stress imposed at 15.00 than to identical stress imposed at 9.00. However, no such circadian differences in dynamics of the hormonal secretion and GR activity after the stress were found for old animals. Young monkeys demonstrated also much higher accretion of ACTH, F, T, DHEAS levels and GR activity in comparison with old monkeys in response to the afternoon stress. The changes in GR activity with stress and aging correlated well with the changes in the corticosteroids level. SOD activity in old monkeys also increased in response to the stress and the dynamics of SOD activity correlated well with the changes of the corticosteroids levels. In contrast to old monkeys, young ones demonstrated decrease of SOD activity in response to the stress and there was no correlation between stress dynamics of F, T, DHEAS levels and SOD activity. The decrease of SOD activity with stress in young monkeys was accompanied by pronounced

increase of T level. These results suggest that the HPA axis plays an important role in regulation of erythrocyte antioxidant enzymes defense not only in basal conditions but also in stress conditions and that this regulation shows marked age differences. The age-related changes in hormonal regulation of the antioxidant enzyme activities may induce disorders in redox homeostasis, antioxidant defense and erythrocyte functions. *Supported by the RFBR (grant 06-04-97616-r_yug_a).*

64. CIRCADIAN RHYTHMS AND AGING IN NONHUMAN PRIMATES

N.D. Goncharova¹, S.A. Smelkova¹, A.A. Vengerin¹,
 V.Kh. Khavinson² (¹*Institute of Medical Primatology*
of RAMS, Sochi-Adler; ²*St. Petersburg Institute of*
Bioregulation and Gerontology of NWB RAMS, Russia;
ndgoncharova@mail.ru)

Circadian periodicities of physiological activity ensure adaptation of organism to changes of environment lightness that are conditioned by the rotation of the Earth around its axis and are mediated by melatonin — the hormone of pineal gland. The goal of this research was to investigate characteristics and mechanisms of age-related changes of circadian rhythms of pineal gland and the hypothalamic-pituitary-adrenal (HPA) axis functioning. Female *Macaca mulatta* monkeys, 6–8 years (young) and 20–27 years (old), were subjected to the two-hours' immobilization, corticotropin releasing hormone (CRH) or arginine vasopressin injection at 9.00 or 15.00. The concentrations of melatonin, cortisol, DHEAS and ACTH in peripheral blood plasma samples were measured before the stress, corticotropin releasing hormone (CRH) or arginine vasopressin injection (basal conditions) and 5, 15, 30, 60, 120, 240 min and 24 h after the challenge. The levels of ACTH and corticosteroids were also measured before epitalon (10 µg/animal/day, 7–14 days) or placebo injection and on 7th and 14th day of the drugs administration. In the basal conditions, young animals demonstrated the well-defined circadian rhythm in levels of F and DHEAS with maximum at 10.00 and minimum at 22.00 and in melatonin level with maximum at 22.00–03.00 and minimum at 9.00–10.00. With aging, the circadian rhythms of melatonin and corticosteroids smoothed out. Young monkeys demonstrated much higher increase of ACTH, F, DHEAS levels in response to the stress imposed at 15.00 than to identical stress imposed at 9.00. However, no such circadian differences in dynamics of the hormonal secretion after the stress were found for old animals. Young monkeys demonstrated also much higher accretion of ACTH, F, DHEAS levels in comparison with old monkeys in response to the afternoon stress. In response to CRH administration, both young and old monkeys demonstrated the well-defined circadian rhythms in dynamics of the hormonal secretion similar circadian rhythms of ACTH and corticosteroids secretion after the stress in young monkeys. In response to vasopressin injection at 15.00 old monkeys demonstrated much lower accretion of ACTH, F, DHEAS levels in comparison with young monkeys. Epitalon course induced the restoration of the circadian rhythm of the pineal melatonin secretion and diurnal rhythms of the HPA axis activity in basal and stress conditions in old monkeys. Thus, aging associated with disturbances in circadian rhythms of melatonin production and regulation of the HPA axis that evidently lead to damage of adaptation processes and development of age pathology. Pineal peptide epitalon is a promising factor for restoring the age-related circadian endocrine dysfunction of primates.

65. GLUCOSE TOLERANCE, GLUCOCORTICOID LEVEL AND LIPID PEROXIDATION INDICES AFTER X-IRRADIATION IN ADULT AND OLD RATS

E.N. Gorban, N.V. Topolnikova, N.V. Osipov (*Institute of Gerontology Academy of Medical Sciences of Ukraine, Kiev, Ukraine; topolnik@mail.ru*)

It was stated the possibility of correction of changes in glucocorticoid function of adrenal gland, glucose tolerance of organism and lipid peroxidation indices in some organs and tissues of adult and old X-irradiated rats using hypoxia. Male Wistar rats 6 and 24 months of age were used. Animals were divided into 3 groups: I — control; II — animals taken into experiment since 1, 2, 3 and 5 days after single X-irradiation in dose 5 Gy; III — X-irradiation + hypoxia (10 % oxygen, 1 min before X-irradiation and 1 min during X-irradiation). It was determined level of 11-oxy corticosteroids (11-OCS) in plasma, glucose tolerance of organism. Level of 11-OCS in blood was measured by fluorometric method. To study lipid peroxidation it was measured levels of malonic dialdehyde, catalase (Cat), superoxide dismutase (SOD) activities in blood and liver. Since 1 day after X-irradiation in adult rats in contrast to old ones it was noticed an increase level of 11-OCS in plasma and a decrease glucose tolerance of organism. Since 3 day after X-irradiation in old rats it was noticed an decrease glucose tolerance of organism. Since 1 day after X-irradiation in adult rats hypoxic influence prevented an increase of 11-OCS levels in plasma and a decrease of glucose tolerance of organism. Since 3 day after X-irradiation in old rats hypoxic influence prevented a decrease of glucose tolerance of organism. Since 2 day after X-irradiation in adult rats hypoxic influence prevented an activation of lipid peroxidation in blood and liver, an increase of Cat and SOD activities in blood and a decrease of SOD activity in liver. Since 5 day after X-irradiation in adult rats hypoxic influence prevented an activation of lipid peroxidation in liver and a decrease of Cat activity in blood. Since 2 day after X-irradiation in old rats hypoxic influence prevented an increase of Cat activities in blood and liver and an increase of SOD activity in blood. Since 5 day after X-irradiation in old rats hypoxic influence prevented an activation of lipid peroxidation and an increase of SOD activity in liver. Hypoxic influence prevented an increase of 11-OCS levels in plasma, a decrease of glucose tolerance of organism and an activation of lipid peroxidation in irradiated adult and old animals. The result demonstrated an efficiency of the use of hypoxic influence to correct radiation impairment of adrenal glands glucocorticoid function and lipid peroxidation in adult and old animals.

66. SIRT1 ACTIVITY PROMOTED BY EXERCISE TRAINING IN AGED RATS

G. Corbi¹, B. Rinaldi², V. Conti², P. Stiuso², S. Boccuti², F. Rossi², A. Filippelli², N. Ferrara¹ (*¹University of Molise, Dpt of Health Sciences and S. Maugeri Foundation, Scientific Institute of Telesse Terme, Italy; ²Second University of Naples, Italy; graziamaria.corbi@unina2.it*)

SIRT1 is a histone deacetylase, involved in oxidative stress and aging. Because the role of aging and exercise training on sirtuins activity in rats is unknown, we investigated the effects of exercise training on age-related changes in the SIRT1 activity, comparing heart and adipose tissue of sedentary young (n=10), sedentary old (n=10) and trained old (n=10) rats. The trained old rats

performed a 8-weeks moderate training on treadmill. On heart and adipose tissue of all rats SIRT1 activity was evaluated by assay kit, peroxidative damage measuring malondialdehyde (MDA) and protein-aldehyde adducts 4-hydroxynonenal (4-HNE), MnSOD, catalase and FOXO3a by western blot, and GADD45a, Cyclin D₂ and FOXO3a mRNA by RT-Pcr. Aging reduced SIRT1 activity in heart (p<0.0001) without effects in adipose tissue, producing an increase of MDA (p<0.0005; p<0.0001) and 4-HNE (p<0.005; p<0.0005), and a decrease of Mn-SOD (p<0.02) and catalase (p<0.0001) expression in both heart and adipose tissue. Aging did not affect FOXO3a protein expression in heart, and FOXO3a mRNA in adipose tissue. Exercise training produced an increase in heart FOXO3a protein expression (p<0.02) and in adipose tissue FOXO3a mRNA, associated to higher Mn-SOD (p<0.01; p<0.005) and catalase (p<0.0001; p=0.01) levels in both heart and adipose tissue of aged rats. In heart exercise-induced higher SIRT1 activity bring on decrease in Cyclin D₂ and increase in GADD45a mRNA expression. In adipose tissue we found a similar decrease in Cyclin D₂, without changes in GADD45a mRNA expression. These findings suggest that exercise training is able to increase SIRT1 activity in aged rats.

67. DEVELOPMENTAL PROGRAMMING OF ADULT DISEASE AS A LINK TO AGE-RELATED MECHANISMS: A ROLE OF GLUCOCORTICOIDS

V.I. Goudochnikov (*UNIJUI, DCSa, Ijuí — RS, Brazil; viktorig@unijui.tche.br*)

Introduction: It seems that David Barker was the first to propose an idea of fetal / early origins of adult disease. Thereafter, Jonathan Seckl suggested an essential function of glucocorticoids (GC) in these phenomena. On the other hand, Gyorgy Csaba has elaborated more broad concept of hormonal imprinting that was applied to environmental science by Andrei Tchernitchin. Here we overview the literature data, as well as our own results demonstrating various aspects of programming and regulating GC effects. *Methodology:* Bibliographic search was performed manually and using 3 databases, in at least 4 languages, during the last 25 years. Experiments *in vivo* included GC treatment of neonatal, prepubertal and young adult rats, with posterior evaluation of body and organ growth. Experiments *in vitro* employed primary cultures of cells obtained from animals of different age groups, evaluating the rates of total macromolecule synthesis and specific protein production. *Results:* Only neonatal GC treatment was able to cause irreversible growth retardation, suggesting programming influence. Besides, more expressive inhibitory GC action was observed on rat pituitary growth *in vivo*, as well as on DNA and total protein synthesis in primary cultures of neonatal rat pituitary cells *in vitro*. However, only small age-related differences were registered in hormonal regulation of serum albumin and growth hormone production by cultured rat liver and pituitary cells respectively, as well as of total RNA and protein synthesis by cultured liver cells. *Discussion:* Our studies suggest programming GC action on the level of pituitary gland, being mediated probably by inhibition of cell proliferation in this organ. In general, 3 aspects of fetal / early programming by bioactive substances are increasingly emerging: 1) long-term effects of hormones, especially GC; 2) action of psychotropic medications and drugs of abuse; 3) influence of endocrine disruptors. *Conclusion:* Nearly all authors agree in stressing indispensable role of experimental models,

especially as referred to studies of molecular mechanisms of programming. However, despite obvious organizational difficulties, future investigations really need to extend the monitoring of long-term effects of GC and other bioactive substances to senescence phase, most probably, using mice as laboratory animals of choice.

68. IN VITRO EVALUATIONS REGARDING REDOX STRESS PARAMETERS IN THE INVESTIGATION OF OXIDOPATHIES

D. Gradinaru¹, D. Margina², G. Constantin¹, C. Rusu¹
(¹Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; ²Carol Davila University of medicine and pharmacy, department of biochemistry, Bucharest, Romania; danielagrdr@yahoo.com)

Purpose: The main purpose of our study was to evaluate in serum samples from elderly patients some redox parameters and to correlate them with biochemical markers of oxidative stress: the low density lipoproteins and erythrocytes susceptibility to lipid peroxidation (LDLox and ESP). **Method:** Study subjects were 60 elderly patients aged 64±15 years, included according to their serum levels of glucose and lipidic parameters in: a normolipidemic and normoglycemic control group (n=20); a group with dyslipidemia (DL, n=20), and a group with diabetes mellitus (DM, n=20). Baseline Apparent Redox Potential of the serum samples (E_0) was evaluated with a 727 Tistand Potentiometer (Metrohm), with a combined glass electrode. The redox stability of the serum was studied as a result of the action of a mild oxidant 1, 4-benzoquinone (PBS). The difference between E_0 and E_1 defines the Redox Stability Index (RSI) of the serum; the lower the RSI, the greater the antioxidant capacity of blood is. **Results:** At baseline as well as after serum samples incubation with PBC, the lowest values in redox potential were recorded for control group (E_0 =-66±12 mV and E_1 =-40±8 mV), followed by DL patients (E_0 =-63±19 mV and E_1 =-29±13 mV) and DM patients (E_0 =-53±13 mV and E_1 =-22±8 mV). E_0 was significantly higher in DM patients ($p<0.05$). At baseline, no significant differences between control and DL patients were pointed out, this being possible only after the serum incubation with PBC ($p<0.001$). Control subjects had the lowest RSI (26±10 vs. 31±9 for DM; $p<0.05$, and 34±11; $p<0.001$, for DL), so the greatest antioxidative capacity of blood. LDLox levels were significantly higher for DL patients (9.48±4.4 vs. control subjects: 4.15±3.12 mmoles MDA/dL serum, $p<0.05$), and ESP values were significantly higher for DM patients (873±189 vs. 729±171 nmoles MDA/ gHb, $p<0.05$). Significant correlations between LDLox and redox parameters were pointed out in control ($r=0.583$; $P=0.009$) and DL subjects ($r=0.454$; $p=0.020$); the increase in the serum LDLox was found related to an increase in the serum RSI. **Conclusions:** These results showed the importance of evaluating these redox stress parameters in investigation and diagnosis of oxidopathies, and also as a possible application regarding the effectiveness of antioxidant therapies.

69. POLYMORPHISM OF THE GENES-CANDIDATES OF CARDIOVASCULAR DISEASES IN THE YAKUTS OF SENILE AGE

L.V. Grigoryeva¹, N.S. Arkhipova², E.K. Khusnutdinova³, E.S. Kylbanova¹, V.V. Pauk³, T.R. Nasibullin³, O.E. Mustafina³, E.K. Popova² (¹Yakut scientific center of RAMS, Yakutsk; ²Hospital №1 of the Health Department, Yakutsk; ³Institute of Biochemistry and Genetics of Ufa Scientific Center of RAS, Ufa, Russia; lenagrigror@rambler.ru)

One of the directions in the search of the genes participating in regulation of life expectancy is studying the

genes responsible for the development of multifactorial diseases. Presumptively, the genes-candidates of cardiovascular diseases (CVD) are involved in determination of life expectancy either. The purpose of this research is the estimation of frequencies of the genotypes and alleles of polymorphic markers of the genes-candidates of CVD in the Yakuts men of senile age. 368 tests of DNA of the Yakut men were examined. Men of 70 years and over with diagnosis of ischemic heart disease, 114 person (middle age 78.1±0.6 years) were included in the group of senile age. Comparison was made with the group of patients who suffered a large-focal myocardial infarction (MI) (102 persons) at the age of 30-62 years (middle age 50.8±0.62 years) and with sampling of the population (152 person, middle age 48.0±0.8 years). Genotyping was carried out by the means of PCR and RFLP methods. Following polymorphic markers of the genes-candidates of CVD are examined: an apolipoprotein gene E (2059C/T and 2197C/T), an apolipoprotein gene B (34622C/T and 41064A/G), a lipoproteinlipase gene (22125T/G), a cholesterol ester transfer protein gene (20200A/G), an endothelial nitric oxide gene (VNTR in intron 4), a paraoxonase gene 1 (16341G/A), a gene of angiotensin converting enzyme (I/D in intron 16), a gene of angiotensin II type 1 receptor (1166A/C). In the sample of old men in comparison with a population the polymorphism of APOE gene can be presented by the genotype APOE*3/*3 ($P=0.057$) and allele APOE*3 ($P=0.031$) less often. Polymorphism of the gene LPL in old men can be presented by the genotype LPL*H+/*H+ ($P=0.008$) and allele LPL*H+ ($P=0.002$); and less often by the genotype LPL*H+/*H- ($p=0.059$) and allele LPL*H- ($P=0.002$). In the group of old men in comparison with the patients with MI the individuals with protective to CVD genotype APOB*X-/*X- ($P=0.0002$) of polymorphism 34622C/T of gene APOB prevailed. Allele APOB*X- is more often detected in the group of old men ($P=0.000$). In the group of patients the genotypes APOB*X+/*X- ($P=0.026$), APOB*X/*X+ ($P=0.002$) and allele APOB*X+ ($P=0.000$) are detected more often. In the group of people of senile age the genotype LPL*H+/*H+ ($P=0.029$) and allele LPL*H+ ($P=0.025$) are detected more often than in the patients with MI. In the group of old men the genotype NOS3*4B/*4A ($P=0.004$) is detected less often than in the group of patients with MI. Thus, in the Yakuts population we have found out the distinctions of frequencies of genotypes and alleles between men of senile age and the population sample of young men and men of middle age basing on the polymorphism 2059C/T and 2197C/T of APOE gene, 22125T/G of LPL gene. In comparison between the group of old men and MI patients of young people the distinctions of polymorphism 34622C/T of APOB gene, 22125 T/G of LPL gene, VNTR of NOS3 gene were detected. In the old men with the signs of IHD the frequencies of genotypes of susceptibility impair according to the CVD genes-candidates. Probably, this is the consequence of selection based on cardiovascular pathology.

70. FUNCTIONAL RECOVERY IN SENESCENT MICRO-VASCULAR ENDOTHELIAL CELLS OCCURRED BY INDUCTION OF CAVEOLIN-1 AND/OR BETA-CATENIN EXPRESSION

M.K. Ha, S.C. Cho, J.H. Rhim, Y.H. Son, S.C. Park
(Department of Biochemistry and Molecular Biology, Aging and Apoptosis Research Center, Seoul National University College of Medicine, Seoul, 110-799, South Korea; pollenha@snu.ac.kr)

In order to study the mechanism of age-dependent changes in micro-vessel function, we screened the difference of protein expression between young and old endo-

thelial cells in one-dimensional gel electrophoresis and found 5 up- and down-regulated bands in CBB G-250 and identified using LC-MS/MS. β -catenin and caveolin-1 were observed to be altered by aging. Their age-dependent decreased pattern was confirmed by western blotting, same as 1-D gel pattern. Since endothelial cells do not have desmosomes different from epithelial cells, these changes might be paralleled with a decrease in cell-cell adhesion strength and an increase in paracellular permeability. For the functional study of those proteins in aging process of micro-vascular endothelial cells, we attempted to increase their expression with the respective adenoviral vectors and found that over-expressed cells of β -catenin and/or caveolin-1 are enforced with the higher tube formation capacity than control cells. These results suggest that β -catenin and caveolin-1 are deeply related with aging associated endothelial dysfunction and they can play the role in the improvement of those functions. Moreover, we observed that they were negatively regulated each other and co-localized at certain membrane portion both *in vitro* and *in vivo*. Taken together, these results suggest a novel mechanism that might partly explain the reduced compliance of aged micro-vessel.

71. EXPRESSION OF TOLL-LIKE RECEPTORS ON CD4 AND CD8 PERITONEAL LYMPHOCYTES FROM OLD MICE TREATED WITH SOYBEAN ISOFLAVONES

A. Hernanz¹, I. Baeza², N.M. De Castro², L. Arranz², M. De la Fuente² (¹La Paz Hospital, Biochemistry Department, Madrid, Spain; ²Complutense University of Madrid, Faculty of Biology, Department of Physiology, Madrid, Spain; ahernanz.hulp@salud.madrid.org)

Cells of the immune system recognize pathogens via Toll-like receptors (TLRs), which are the basic signalling receptors of the innate immune system and direct the course of acquired immunity by recognizing specific microbial products that activate immune cells for effector functions. It is well known that ageing correlates with a decline in immunity, as well as with an impaired production of several hormones, such as the estrogens. In recent years it has been proved that the estrogens play an essential role modulating the proinflammatory cell signalling. Soybean isoflavones, since they show a structural similarity to estradiol, are being investigated to find out if they can mimic estrogen actions. Since the expression of TLRs on cell membranes constitutes the first step in the proinflammatory cascade signalling, the aim of the present study was to determine the role of isoflavones and green tea as modulators of such TLR expression on CD4 and CD8 peritoneal T lymphocytes from old mice. ICR-CD1 female mice were used. At the age of 16 months they were fed diet supplemented with soybean or green tea + soybean (Diviser-Aquilea, S.L.) (1mg/mouse/day) for 25 weeks. Control group was fed standard diet (A04). Then, at the age of 20 months, peritoneal leukocytes were obtained and the expression of TLR 2 and 4 was analyzed, by flow cytometry, on both CD4 and CD8 subpopulations of T lymphocytes. Previous studies of our group have detected an increase in the expression of TLR2 and 4 with advancing age. In this experiment, diet enriched in soybean isoflavones reduces in these old animals the expression of TLR2 and 4 on cell membranes of CD4 and CD8 peritoneal lymphocytes, which could constitute a mechanism of control of the proinflammatory state that occurs with ageing. Combined

diet (soybean isoflavones + green tea) had no effect on the expression of these receptors. Supported by a grant from Ministry of Education and Science (BFU2005-06777) and RETICEF (RD06/0013/0003) (ISCIII) of Spain.

72. HUMAN PROGEROID DISORDERS AND MOUSE MODELS: IMPACT OF DNA DAMAGE AND REPAIR ON CANCER, AGING AND LIFE SPAN EXTENSION

J.H.J. Hoeijmakers¹, I. van der Pluijm¹, G. Garinis¹, L. Niedernhofer², K. Diderich¹, J. Mitchell¹, B. Schumacher¹, J. Pothof¹, R.B. Beems³, H. van Steeg³, G.T.J. van der Horst¹ (¹Erasmus University, Rotterdam, The Netherlands; ²University of Pittsburgh Cancer Institute, USA; ³RIVM, Bilthoven, The Netherlands; j.hoeijmakers@erasmusmc.nl)

One of the most versatile DNA repair systems is nucleotide excision repair (NER), which removes a wide class of helix-distorting lesions in a multi-step 'cut and patch' reaction. Two sub-pathways exist: global genome NER operates genome-wide and mainly prevents mutations, transcription-coupled repair removes damage that blocks transcription counteracting cytotoxic effects of DNA injury. Inherited, UV-sensitive NER disorders include xeroderma pigmentosum (XP), characterized by high cancer predisposition, most prominently skin cancer and the very severe neuro-developmental conditions Cockayne syndrome (CS) and trichothiodystrophy (TTD), in which patients, curiously, seem to be protected from cancer. Also combined XP/CS occurs. Mutations in NER helicases XPB and XPD are associated with all three disorders. XPD^{TTD} mice demonstrated that TTD is, like CS, in fact a premature ageing syndrome. XPD^{TTD} mice also exhibit reduced spontaneous cancer incidence, which is explained by the idea that the transcription-coupled repair defect triggers cell death from endogenous DNA damage, that blocks transcription. This response prevents DNA damage induced cancer. XPD^{XP/CS} mutant mice are highly predisposed to cancer, due to aberrant repair but also display premature ageing, demonstrating that both phenotypes can co-exist. Complete repair deficiency in XPD^{TTD}/XPA or CS/XPA double mutant mice dramatically aggravates premature ageing symptoms, including prominent neurodegeneration and an extremely short life span of ~3 weeks. Different mutants with mild to severe defects in the dual functional NER-crosslink repair endonuclease ERCC1 exhibit similar and in part distinct premature aging features over a period of 15 months to 4 weeks depending on the severity of the repair defect. The correlation between severity of compromised repair and rate of onset and severity of the clinical ageing manifestations both in mice and humans provides strong arguments for the DNA damage theory of ageing. We also generated conditional mutants in which dramatic aging is triggered only in e.g. the brain. These mice display many signs of neurodegeneration and only mild aging features in the remainder of the body. We propose that endogenous oxidative lesions, including crosslinks and transcription-blocking damage hamper transcription/replication and trigger apoptosis-senescence and consequently ageing. Thus, exaggerated cytotoxic and cytostatic responses to DNA damage may protect from cancer, but enhance aging. On the other hand, attenuated cytotoxic and cytostatic responses to DNA damage will favour cancer. Microarray, functional and physiological studies have revealed that persisting DNA damage triggers a systemic downregulation of the

IGF1 somatotrophic axis, causing a shift towards energy storage rather than energy production explaining the severe growth defect of the repair mutants. This 'survival' response also maximizes anti-oxidant defence and is aimed at protecting from cancer and aging-related diseases and extending life span. Interestingly, long-lived dwarf mice and mice subjected to caloric restriction exhibit a *grosso modo* similar response. This response was also found to be triggered by chronic exposure of wt mice to subtoxic oxidative DNA damage. These data link accumulation of DNA damage and the IGF1 control of life span, cancer and aging. *References:* [1] Niedernhofer L.J., et al., 2006. A novel progeria caused by a DNA repair defect reveals that genotoxic stress suppresses the somatotroph axis. *Nature* 444: 1038-1043; [2] van der Pluijm I., et al., 2006. Impaired genome maintenance suppresses the Growth Hormone-Insulin-like Growth Factor 1 axis in mice with Cockayne syndrome. *PLoS Biol.* 5, 23-38; [3] van de Ven M., et al., 2006. Adaptive Stress Response in Segmental Progeria Resembles Long-Lived Dwarfism and Calorie Restriction in Mice. *PLoS Genet.* 2, 2013-2025.

73. PEROXIDATIVE DAMAGE IN ALLOXAN TREATED WISTAR RATS

C. Ionescu, E. Lupeanu (Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; cristinaiones71@hotmail.com)

To estimate free radical stress, namely changes in glutathione peroxidase GPx, malondialdehyde MDA like products formation and serum total antioxidant capacity TAOC, as either due to alloxan metabolising or a consequence of overt hyperglycemia. Adult age of 7 months and old of 25 months Wistar rats were included in control and study groups, each of 10 animals. Alloxan dissolved in phosphate buffer was injected subcutaneously in single hyperglycemia inducing 100 mg alloxan/kg b.w. and non-inducing 50 mg alloxan/kg b.w. doses. Rats were given food to counteract overnight hypoglycemia. We evaluated in liver homogenates non selenium glutathione peroxidase acting on cumene hydroperoxide by use of a spectrophotometric assay along with MDA production by TBA testing. The total antioxidant capacity was estimated in the rat serum by measuring its inhibitory action on peroxidation in a standard rat brain homogenate and results were expressed in inhibition percentages. Significantly increased blood glucose concentrations after injecting 100 mg alloxan/kg.b.w. $p < 0.05$ were pointed out. After injecting the hyperglycemia inducing dose, except for old rats which showed a tendency to decrease for GPx, we found out few changes in this enzyme activity and also lowering in MDA production in adult and old rats. In contrast, we pointed out significant increases in MDA production $p < 0.05$ in adult rats injected with non-inducing 50 mg alloxan/kg b.w. initially and after one hour incubation, in comparison with results for the control group. We obtained no significant changes in serum total antioxidant capacity in animals treated with 50 mg alloxan/kg b.w. but significant rat serum total antioxidant capacity decrease under overt hyperglycemia in adult and old rats 59 ± 8 vs. $75 \pm 3\%$, $p < 0.05$ and 56 ± 7 vs. $77 \pm 5\%$ $p < 0.05$ respectively. Conclusions: At 100 mg alloxan/kg b.w. inducing hyperglycemia, there was a lowering in MDA production that in this case, may be accounted for, more by toxic injury to the liver and less by enhanced free radical stress during alloxan metabolising

and coexisting hyperglycemia. Results we obtained under development of overt hyperglycemia in rats, suggest as well that more detectable changes appear in the serum total antioxidant capacity.

74. INFLUENCE OF THE «NEOSELEN» AND VILON PREPARATIONS ON CONSEQUENCES OF RADIATION-MERCURY EXPOSURES WITH LOW DOSES

S.D. Ivanov¹, A.V. Kondratyeva², E.G. Kovanko¹, V.Kh. Khavinson³ (¹Central Research Institute of Roentgenology and Radiology, St. Petersburg; ²State Academy of Veterinary Medicine, St. Petersburg; ³St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; sdi44@mail.ru)

The purpose of the present study was to establish the peculiarity of action of two preparations as possible geroprotectors in case of radiation-mercury exposures with low doses (RMELD) in animals. Female rats at the age of 18 month received $Hg_2(NO_3)_2$ with drinking water in permissible concentration — 1.0 mcg/l in account to metal, and «Neoselen» preparation (Na_2SeO_2) with dose 1.3 ml/kg/day for 1 month before and 1 month after the whole-body single γ -irradiation with 25 cGy dose (¹³⁷Cs, dose rate=41 cGy/min). Investigation of geroprotective efficacy of vilon preparation (with 5.0 mcg/kg dose for 5+5 days after irradiation with interruption in 20 days) was carried out in male rats at the age of 6–7 months with the same above-mentioned injured doses administered twice during 4 months. Early cytological indexes and genotoxic ones (as alterations of the DNA leukocyte content and structure) were measured in blood in 24 hrs after irradiation, and the changes of postradiation restoration — in 30 days after irradiation. The enzyme activities of creatinine, aspartataminotransferase (AST) and alaninamonotransferase (ALT) were determined in serum in 30 days after last irradiation. The RMELD resulted in life span shortening in female rats. The peculiarities of the action for the radiation and mercury with low doses in combination with the «neoselen» preparation were revealed. The «neoselen» administration did not significantly change the cytotoxic and genotoxicity indexes, and life span shortening in rats after radiation-mercury exposures, but resulted in standardization of some enzyme activities in serum — creatinine, AST, ALT. The double RMELD resulted in lymphopenia in 24 hrs and 30 days after γ -irradiation in male rats. The vilon administration resulted in standardization of the lymphocyte amount in 30 days after last irradiation, and 25% reduction of animal death for 15 months after double radiation-mercury exposures. Thus, the «neoselen» preparation enables to improve quality of life of elderly female rats after the RMELD, but did not influence on the life span shortening in animals. The vilon preparation may be used as geroprotector at adverse ecologic environment, in particular, after double RMELD in male rats.

75. AGE AND GENDER INFLUENCE ON GENOTOXIC REACTIONS IN LEUKOCYTES AFTER RADIATION-MERCURY EXPOSURES WITH LOW DOSES

S.D. Ivanov¹, M.P. Sobutsky², E.G. Kovanko¹, S.I. Lyutinsky² (¹Central Research Institute of Roentgenology and Radiology, St. Petersburg; ²State Academy of Veterinary Medicine, St. Petersburg, Russia; crirr@peterlink.ru)

The purpose of the present study was to investigate the peculiarity of the DNA leukocyte postradiation reac-

tions in young and elderly animals of both genders after combined exposure of ionizing radiation with low dose and mercury ions with maximal permissible concentration. There were studied male and female of rats of young (4–5 months) and elderly (15–18 months) age at the experiment start. The animals received mercury salt — $\text{Hg}_2(\text{NO}_3)_2$ with drinking water (in concentration 1 mcg/l in calculation on metal) for 3 months before and 1 month after total single X-irradiation with dose 25 cGy. The evaluations of the leukocyte DNA content (pg/cell) as an DNA-index (DNAi) and DNA structure (by means of relative fluorescence coefficient — RFC, revealing polynucleotide supercoiling degree, which was measured by help of two fluorescent dyes — 4',6-diamidine-2-phenylindole and ethidium bromide) were carried out, as described earlier (Ivanov S.D. et al., 1999). Index measurements were performed in early term — in 24 hrs after irradiation and in 1 month of postradiation restoration period. The cytotoxic reactions in early term after radiation-mercury exposures with low doses were revealed mainly among young females, and genotoxic reactions — in young males; the leukocyte DNA structure alterations were observed in elderly females. The restoration in young females occurred in 1 month after combined exposures, whereas some elevation of genotoxicity was observed in young males; the DNA structure condensation after mercury administration took place in elderly males, and the RFC reduction was accompanied by leucocytosis in elderly females. Therefore, despite young females showed sensitivity in early term after the environment radiation-mercury exposures with low doses, then they revealed better restoration in comparison with young male and elderly rats of both genders.

76. AGE MORPHOLOGY OF THE EPIPHYSIS: THE CHRONOBIOLOGICAL ANALYSIS

S.V. Ivanov¹, M.A. Blank² (¹Komi Branch of Kirov State Medical Academy, Syktyvkar; ²Central Research Institute of Roentgenology and Radiology, St. Petersburg, Russia; ivanov400@yandex.ru)

According to the two-dimensional linear model, the ontogenesis is illustrated by a parabola, where the ascending part correlates with infancy and youth, the «plateau» — the period of stabilization — with maturity, and the descending part depicts the involution segment of ontogenesis. The three-dimensional model is adequately represented by the conception of the ontogenetic «whipping top» (Gubin G.D., 1984). In the context of both models of ontogenesis the circadian harmonies are crucial. The part of pineal body (epiphysis) in the hierarchy of the body's circadian system is fundamental, as well as its contribution to the realization of the program of ontogenesis. The age transformations of 24-hour variance of biochemical markers of functional pineal activity are studied minutely in men and laboratory animals. The integral morphometric correlates of functional pineal activity in circadian and age aspect are studied to a lesser degree. The data on substrate of tonic and cyclic components of circadian pineal activity is lacking. Making up for the deficiency is the subject of this report. In 5 age groups of cats (5, 30, 90 days old, mature and senile) and 3 groups of rats (1, 6 and 24 months old) the postnatal stability of the pattern of diurnal oscillation of cariometric rate of pinealocytes and the size of epiphysis is demonstrated: both criteria are characterized by the minimum in daytime and maximum in nighttime.

Becoming stable in maturity, the level of oscillation (the characteristic of the organ's tone) changes uncertainly in elder age groups. As the subjects grow older, the amplitude of diurnal oscillations (the cyclic characteristic) of morphometric pineal rates decreases to a greater extent than the amplitude of melatonin (the most thoroughly studied pineal hormone) content in blood and liquor. As a result of the lifetime (computer and magnetic-resonance tomography) research of the human epiphysis in eight age groups the normative rates of organ's linear size and volume were determined. The pattern of the age dynamics of pineal volume rate in human is generally identical to that in animals. The difference is in gender-determined «pubertate» lapse specific for humans. The experiment on rats proved that the substrate of tonic component of the diurnal pineal rhythm are the central nervous projections, and the sympathetic efferents are the substrate of the cyclic component of pineal rhythm. The correlation of these channels of regulation of the epiphysis is reciprocal (the hourglass model). The age involution affects mainly the sympatic (cyclic) channel, but not the central (tonic) channel.

77. MELATONIN STRUCTURE RESEARCH BY VIBRATIONAL SPECTROSCOPY

Ye.A. Ivanova (Technological Institute, St. Petersburg, Russia; yelena-spb@yandex.ru)

Melatonin, a hormone secreted by pineal gland, is sensitive to aging of mammal organisms. Aging, as well as all somatic diseases, including cancer, is defined by functioning of cells determined, in turn, by immunity resistance to diseases. So melatonin can serve as a marker of ageing and immunity. In the present report the methods of studying of melatonin structure by means of polarized vibrational spectroscopy are offered. Using polarized Raman and Infrared spectroscopy study of disordered structures made possible to determine the symmetry of the scattering cluster, to estimate the size of this scattering unit, to research the temperature structure transformations. The combination of spectroscopic approach and computer three-dimensional modeling can give visual picture of the model structure. In future it is supposed to use methods of vibrational spectroscopy for noninvasive diagnostics of diseases based on the melatonin level in living biological liquids and tissues.

78. INFLUENCE OF ZINC ON OXIDATIVE STRESS IN ELDERLY: RELATIONSHIP WITH LIFE STYLE AND PSYCHOLOGICAL CONDITIONS

J.M. Jajte¹, W. Flisikowska¹, I. Lewkowicz², J. Biasiak², A. Sapota¹, E. Mocchegiani³, F. Marcellini³ (¹Medical University of Lodz, Poland, ²University of Lodz, Poland, ³INRCA, Ancona, Italy; jmjajte@pharm.am.lodz.pl)

Purpose: Recent experimental evidences indicate that the low level of zinc can lead to increased reactive oxygen species (ROS) generation in the cell and to different oxidative injury. It has been also reported that a zinc deficiency in the diet and concomitantly a strong oxidative stress, due to chronic inflammation, is a common event in ageing. Moreover, cells from elderly subjects are less efficient in repairing the damaged DNA. The aim of our study was to examine the relationship between zinc status, oxygen free radicals production and DNA damage/repair in lymphocytes of polish healthy elderly subjects in relationship with life style and psychological conditions. *Methods:* The total number of subjects enrolled in the study is 140. The mean age of all the subjects is 74,7 years for male and 73,2 years for female. The healthy status was assessed through

a medical examination and by routinely clinical laboratory analysis. We have used spectrofluorimetry and/or flow cytometry (FACS) measurements to study ROS production in cells. The level of DNA damage and the kinetics of DNA repair were evaluated by the alkaline single cell gel electrophoresis (comet assay). The relationship between ROS production and respectively age, gender, zinc status and psychological dimensions (cognitive functions, mood, perceived stress) were assessed. Measures of the psychological dimensions level were obtained at baseline using the MMSE, GDS or PSS scale. *Results:* We have found significant correlation between ROS generation in lymphocytes in healthy elderly and zinc status. In general, women showed higher correlation with zinc status compared to men. The level of zinc may play also an important role in the reaction of cells to DNA damaging oxidative agents and this reaction may be age- dependent. In Poland old people showed impaired psychological conditions. The lower variety in consuming foods, including foods rich in zinc, may play an important role on the decreased of psychological functions in elderly from Poland. *Conclusions:* The results obtained suggest that zinc may play an important role in lowering oxidative stress in cells of elderly subjects and this reaction is age- and zinc status- dependent. Moreover, the psychological conditions in elderly, assessed by MMSE, GDS and PSS, show that these findings are related to zinc status, nutritional factors in food and are also related to oxidative stress in the cell. *Supported by the ZINCAGE project (FOOD-CT-2003-506850) of the EU 6th Framework Program.*

79. SOME INDICES OF STEROIDOGENESIS IN OVARIES OF DIFFERENT AGE RATS AFTER ADMINISTRATION OF MERCURY CHLORIDE

P.A. Kaliman, G.V. Ganusova (V.N. Karazin Kharkov National University, Kharkov, Ukraine; Pavel.A.Kaliman@univer.kharkov.ua)

Heavy metal ions, including mercury, induces oxidative stress in different tissues of rats. Reactive oxygen species can modulate reproductive functions such as ovarian steroidogenesis. In the ovary mitochondrial and microsomal cytochrome P-450s catalyze various NADP⁺-dependent hydroxylation reactions required for biosynthesis of oestrogens. Estradiol is known to induce the synthesis of Zn- and Hg-metallotioneins in the liver and kidneys of rats under HgCl₂ administration. However the mechanisms of Hg²⁺ action on steroidogenesis in the ovaries are not elucidated. The aim of the present study was to investigate activities of NADP⁺-dependent dehydrogenases in the ovary of Wistar rats of 1-, 3- and 24 months after HgCl₂ injection. HgCl₂ dissolved in 0.9% NaCl was injected intraperitoneally (0.7 mg/100 g body weight). Animals were decapitated under light ether anaesthesia 24 h after metal salt administration. Glucose-6-phosphate dehydrogenase (G6PDH, EC 1.1.1.49) and cytoplasmic NADP⁺-dependent isocitrate dehydrogenase (ICDH, EC 1.1.1.42) activities were assayed in ovarian cytosol spectrophotometrically. Cytochrome P-450 content was determined in the ovarian microsomal and mitochondrial fractions by differential spectrophotometry. Basal activities of G6PDH, ICDH as well as microsomal and mitochondrial cytochrome P-450 contents were more than 2-fold higher in ovaries of 3- and 24 months rats comparing with 1 month old. These differences may be associated with steroid hormone synthesis under development of

the ovaries. G6PDH and ICDH activities were increased 24 h after administration of HgCl₂ in 3- and 24 months rats (130% versus control level). Injection of HgCl₂ markedly raised microsomal cytochrome P-450 content in 3- and 24 months rats up to 315% and 268% against control, accordingly. The mitochondrial cytochrome P-450 content was increased in 3- and 24 months rats accordingly to 151% and 143% against control level after administration of HgCl₂. The increase of activity of NADP⁺-dependent dehydrogenases and cytochrome P-450 content gives the evidence about the stimulation of oestrogens synthesis in the ovaries of rats.

80. FEATURE OF LINEAR REGRESSION MODEL OF BIOLOGICAL AGE CREATED ON THE BASIS OF BIOMARKERS OF HEART BEAT VARIABILITY

E.V. Karnaukhova¹, N.N. Ivanova¹, I.A. Manokhina¹, V.A. Karnaukhov², A.V. Karnaukhov¹ (¹Institute of Cell Biophysics of RAS, Pushchino, Moscow region; ²M.V. Lomonosov Moscow State University, Russia; akarn@icb.psn.ru)

On the basis of the wide database on parameters of heart beat variability, composed by us in result of investigation of random sample of more than 1200 conditionally healthy patients, the linear model of biological age (BA) has been built. This model has 10 parameters, range of ages from 20 to 70 years, sufficiently high coefficient of correlation $r=0.8$ and stability with respect to changing of population sample. The linear model of BA has been additionally analyzed regarding widened range of ages from 5 to 90 years. It turned out that the dependence of BA on calendar age (CA), which has been calculated according to moving average, has nonlinear shape: monotonous growth in the range of 20-70 years and deflection from linear dependence for younger (overvaluation of BA) and older (undervaluation of BA) ages. In the range of 5-70 years the dependence has near resemblance with mortality curve. The fact of linear dependence in the middle range of ages is confirmed by linear dependence of different parameters of cardiovascular system on CA. We explain the nonlinear dependence of younger ages by underdevelopment of cardiovascular system (and other systems and organs) in result of accelerate growth of organism and irregular functional systems forming. For older ages, nonlinear range is strongly limited by values of BA which do not exceed 70 year, that may be explained by leave of peoples from capable group of population. As the heart beat variability reflect not only a condition of cardiovascular system, but else nervous, immune and other systems and organs of people, the conclusion has been made, that the mentioned peculiarities of model, just as a mortality curve, reflect degree of physiology perfection of human, in particular of cardiovascular system, in different periods of life.

81. 8-OXO-2'-DEOXYGUANOSINE AS A BIOMARKER OF AGING IN CYTOGERONTOLOGICAL STUDIES — CAN WE ESTIMATE?

G.A. Khairullina, T.A. Gorbacheva, V.K. Polyanskaya, D.S. Esipov, E.V. Sidorenko, A.N. Khokhlov (School of Biology, M.V. Lomonosov Moscow State University, Moscow, Russia; desipov@gmail.com)

8-Oxo-2'-deoxyguanosine (8-odG) is the major oxidative DNA lesion. As its content continuously increases with aging *in vivo* and *in vitro* both in nuclear and mitochondrial DNA (much faster in the last), many gerontologists (es-

pecially those who keep within the free radical theory of aging) consider it to be one of the most appropriate molecular biomarkers of aging. There are few methods with different sensitivity for detection of 8-odG in DNA from various tissues of organism (immune-enzyme assay, affine chromatography, chromatography with mass-spectrometry or electrochemical detection). Some of them allow us to carry out such estimation even in cytogerontological experiments, i.e. in cultured cells (in this case the main problem is small amount of the cellular material obtained), but these methods are rather expensive and usually are difficult to use in many laboratories. We have tried to elaborate a method for 8-odG detection in DNA from cultured cells using relatively inexpensive chemicals and equipment. We also tried to evaluate if we could investigate «stationary phase aging» of cell culture by this method and test geroprotectors-antioxidants on the model system. We chose the chromatography analysis of 8-odG content in DNA with ultraviolet and electrochemical detection. The analysis was carried out with the «Gold» chromatograph (Beckman Coulter, USA) at 254 nm wave length. For 8-odG detection an electrochemical detector by «Khimavtomatika» (Russia) has been used (+0,4 V electrode voltage). 8-OdG as a standard for the detector calibration was synthesized from 2'-deoxyguanosine (dG) with 20 mM EDTA, 20 mM ascorbic acid, and 2 mM FeSO₄ at 37 °C, bubbling through the mixture for 3 hrs. Isolation and purification of 8-odG were carried out by semipreparative reverse-phase HPLC. Structure of the compound isolated was tested by UV-spectroscopy, NMR-spectroscopy and mass-spectrometry. It was noticed that 8-odG in a solution at room temperature was hydrolyzed rather fast to 8-oxo-guanine. With the help of the standard synthesized the minimum amount (less than 5 pmol) of 8-odG that could be significantly detected at our conditions was evaluated. Thus, taking in account that usually the 8-odG:dG ratio makes approximately 1:10⁵, for the analysis it is necessary to isolate DNA from 10⁸ cells. The same cell number should be enough for detection of 8-oxo-guanine excreted by the cells to growth medium in the process of «stationary phase aging». Investigating effect of H₂O₂ at various concentrations on 2'-deoxyguanosine we found that our method allows us to adequately follow the process of its oxidation. Finally, in the preliminary experiments with Chinese hamster cultured cells abrupt increase of 8-odG level in their DNA at the last stages of «stationary phase aging» was demonstrated.

82. ENVIRONMENTALLY DEPENDENT INSTABILITY OF AN ORGANISM CONTROL SYSTEM CAN LEAD TO AGING

A.V. Khalyavkin¹, A.I. Yashin² (¹Institute of Biochemical Physics of RAS, Moscow, Russia; ²Duke University, Durham, NC, USA; ab3711@mail.sitek.net)

Recent findings reveal strong regulation of *Drosophila* life span by olfaction and food-derived odors (Libert et al., 2007). We have extended this principle on other organisms and different external signals. We have suggested strong modulation of a rate of aging and longevity by the gradual changes of environmental cues. There are a lot of evidences, that the set of extrinsic factors affects organisms' control system via sensors and adjusting units. Let us consider the two-parameter Gompertz's mortality rate and assume that these parameters depend on the third parameter *P* characterizing environmental pressure (total external influences).

Biological consideration allows for the conclusion that there is a range of environmental conditions (parameter *P*), which corresponds to adequate vital activity, i.e. reasonable amount of environmental pressure plays a stimulating role for organism's functioning and at this range of optimal functioning an organism can completely renew itself, i.e. it is ageless. However, this range is not optimal for survival since environment induces heavy death toll in population of such organisms. In other words, mortality rate of such organisms is high because of environmental reasons (extrinsic mortality). To reduce this mortality the organism chooses a less aggressive environment. It makes compromise sacrificing optimal functioning (complete renewal) for the benefits of less aggressive environment. As a result of such strategy the organism's renewal becomes incomplete and the senescence generates an age-related increase of the mortality rate. However, this increase because of senescence is compensated by more significant mortality decline due to external (environmental) causes. The optimal balance is kept by evolutionary forces, which optimize average fitness of the population of organisms. Taking this consideration into account one can assume that in current (compromised) situation the Gompertzian exponential parameter (which reflects contribution of the rate of individual aging) must decline when environmental pressure increases. At the same time age-independent part of Gompertz's mortality rate (another Gompertzian parameter) must increase when the environmental pressure increases. Thus there is a distinct reciprocal relationship between these two parameters, which one was repeatedly observed almost half century. This regularity indirectly indicates an actual capability for a control system to execute of full self-maintenance of an organism.

83. PROSPECTS OF PEPTIDE BIOREGULATORS APPLICATION IN GERONTOLOGY

V.Kh. Khavinson, V.V. Malinin (*St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; khavinson@gerontology.ru*)

The increase of active human life span is one of the most important aims of gerontology and contemporary prophylactic medicine as well. The development of modern gerontology not only promotes our understanding of mechanisms of ageing, but opens new prospects of geroprotectors, which are physiologically adequate for humans. Multipronged studies of peptides effect showed, that this class of compounds most definitely meet these requirements. It was established, that polypeptides obtained from the thymus, pineal gland, prostate, cerebral cortex and retina reconstruct the protein synthesis in these organs and tissues, normalize their functional activity in case of different pathologies and aging. This contributes to an increase in the mean life span of animals. Animals treated with polypeptides showed a restored level of melatonin and antioxidant enzymes. Probably, tissue specificity is the key to understanding the mechanisms of geroprotective effect of polypeptide medications. Geroprotective properties of peptides are also determined by their normalizing effect on basic homeostasis supporting systems of the organism. Peptides restore the intensity of tissue specific proteins synthesis and regulate the expression of genes, which are responsible for cell differentiation and proliferation. Peptides may be regarded as informational regulators of gene stability. The

study of structural and functional properties of peptides is fundamentally important for development of our concepts of the mechanisms of geroprotective effects of these substances. Several structural analogs were synthesized basing on the analysis of amino acid composition of polypeptides. Comparative study of biological activity of polypeptide medications and synthetic peptides revealed a range of similar effects on different organs and tissues in the norm and in pathology. The creation of peptide medications enabled to design a new technology of correcting the genetic predisposition of the organism to age-related pathologies and restoring cell functions disordered by ageing — bioregulation therapy, and to introduce it into clinical practice. It is based on the complex therapeutic and prophylactic application of peptide bioregulators of genetic stability and cellular metabolism, leading to the normalization of the main physiological functions, enhancement of adaptive capacities and delaying of organism aging. Administration of preparations of the thymus and pineal gland to elderly and old people restored the level of melatonin, the indices of antioxidant, immune, endocrine and cardiovascular systems, as well as brain functions, which was accompanied by a 2-fold mortality decrease in these groups of people during 8-12 years of the study. The results of studies of peptide geroprotectors point out the good prospects of their application for preventing premature ageing, age-related pathology and for increasing active human longevity.

84. GENE-SPECIFIC GEROPROTECTIVE PEPTIDES

V.Kh. Khavinson, L.K. Shataeva (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; khavinson@gerontology.ru)

Transcription factors (TFs) are proteins involved in the regulation of gene expression that bind to the promoter elements upstream the coding part of genes and initiate transcription. Through this process they control and regulate the gene expression in cell. The DNA-binding domain of TF contains block of amino acid residues that recognizes a specific sequence of DNA bases near the transcription start. This short peptide chain has unique pattern of proton-donor and proton-acceptor side groups for binding to DNA double helix. The DNA has complementary pattern of functional groups for peptide binding. Experiments have shown that DNA double helix was mainly expanded and double-helix chains were partially separated when TF interacted with gene promoter. It precedes the initiation of gene transcription by RNA polymerase II. Studies of today show that TFs are tissue specific because of their gene-specific binding in chromatin of differentiated cells. Nontranscriptable DNA part of gene may expose several binding sites for appointed TF. What is more, TFs of several different genes may cooperate together. We have analyzed amino acid sequences of macromolecular TF, and have found peptide blocks selectively interacting with promoter region of their gene. Then synthetic copies of the endogen peptide blocks were shown to have tissue specificity and activity commensurable with TF activity in various tissues culturing teSt. Spectroscopy measurements in several model systems «synthetic peptide-DNA» demonstrate a gene specificity of the peptides. Study of the molecular mechanism of recognizing between transcription factors and DNA binding site is the necessary basis for development of modern peptide medicines without any

side effects. Aged patients often afflicted by physiological changes and deficiencies in enzymes, peptide hormones, calorie intakes, etc. Endogenous peptide preparations and their analogs may be used in Molecular Gerontology for correction of gene activity and metabolism in a given cell type under certain conditions. Any new concept brings constructive confrontations with older concepts. Our concept — to use in medicines specific oligopeptides instead macromolecular TFs — has advantages: geroprotective and life span-prolonging effects in animals.

85. ON «IMMORTALITY» OF ANIMALS, PLANTS, AND CELL LINES

A.N. Khokhlov (School of Biology, M.V. Lomonosov Moscow State University, Russia; khokhlov@genebee.msu.su)

In gerontological papers we rather often use, with reference to living organisms, the term «immortal». Naturally, it does not mean the real immortality as in case of Koschei (the deathless character from fairy tales). Those organisms can die but they don't age, i.e. their mortality rate remains practically constant for a long enough period of time. At the same time it is obviously assumed that the death probability is very low and therefore these organisms live much longer than the «mortal» ones. However, it is the organisms with high mortality rate that really don't reach a great age and are certainly considered as «non-aging». Almost all long-living «non-aging» animals have unlimited growth capability (lobsters, flounders, sturgeons, some whales, alligators, turtles) or very high (in some cases — unlimited) regeneration capability (freshwater hydra). The first usually reach very big sizes, the second — permanently renew their cells. Thus, in both cases continuous cell proliferation is observed. The similar situation can be found in some sponges or corals as well as in many cloning plants. It should be emphasized that «super-long-livers» among aging plants, as well as long-living aging animals, usually reach very big sizes (a classical example — sequoia). Such plants possess only very low number of live cells continuing proliferation, all the other cells have died a long time ago. In «immortal» cell lines some of the cells are mortal. After every subcultivation of the culture up to 40% of cells die before the next passage. However, the others proliferate so fast that exponential growth of the cell population is observed. But in case of all higher animals (including humans) a kind of immortality also takes place. It is the «Weismann's immortality» that occurs because so called «germ plasma» is transferred from generation to generation almost infinitely. All the mentioned above leads us to rather pessimistic (for experimental gerontology) conclusions. At first sight, it seems that we could just stimulate cell proliferation and renewal in a multicellular organism. However, many of our tissues consist of absolutely non-dividing cells (cardiac myocytes, neurons, etc.) and propagation of, for instance, neurons is impossible for us without personality destruction as well as propagation of cardiac myocytes — without heart dysfunction (therefore we have so many problems with treatment of strokes and cardiac infarctions). Some advances in the field could be reached by stimulation of organism growth by propagation of «non-critical» cells but this will lead to very serious side effects (abnormal body size). Thus, the only possible approaches to significant aging slowing down are the reduction of the rate of age-related damage accumulation in

an organism's cells or the repair of already accumulated defects (mainly — DNA defects). Unfortunately, it is unlikely that we can completely solve the problems in the foreseeable future.

86. STUDY OF THE EXTRACT OF REINDEER ANTLER POWDER IN CYTOGERONTOLOGICAL EXPERIMENTS

A.N. Khokhlov, D.S. Esipov, L.Yu. Prokhorov,
E.V. Sidorenko, O.V. Korshikova, A.Yu. Yuminova,
V.V. Cygankov (*School of Biology, M.V. Lomonosov
Moscow State University, Moscow, Russia;*
khokhlov@genebee.msu.su)

Preparations from deer antlers are well known by their multiple medicinal properties. In particular, their health-giving effect on senescing organism has been repeatedly shown. In the study we investigated effect of water extract of reindeer mature antler powder (ERAP) on the kinetics of growth and «stationary phase aging» of M-HeLa (clone 11) cell line as well as on the cloning efficiency of Chinese hamster cultured cells (B11-dii FAF28 cell line). In the first part of the work HeLa cell suspension was placed in the wells of 24-well plastic tissue culture plates with seeding density of $15 \times 10^3/\text{cm}^2$. The growth medium contained ERAP at 0, 10 or 100 $\mu\text{l}/\text{ml}$. In every 1–3 days microscopic evaluation of live cell number in the wells has been made. In the second part of the work Chinese hamster cells were seeded in twenty 35 mm Petri dishes (100 cells per dish). The growth medium contained ERAP at the concentrations mentioned above. In 7 days after seeding the number of colonies consisting of 16 and more cells was counted. It turned out, that ERAP at 10 $\mu\text{l}/\text{ml}$ increased proliferation rate of HeLa cells as well as their saturation density, i.e. acted as a geroprotector. The result was also confirmed by the observed «stationary phase aging» slowing down leading to increase of the «average life span» of cell culture. However, effect of ERAP at 100 $\mu\text{l}/\text{ml}$ was different. In that case the evident decrease of cell culture saturation density was observed indicating increase of the culture «biological age». Besides, the cell death began earlier leading to decrease of the «average life span» of the cell culture. We think that ERAP contains some compounds with geroprotector activity as well as some geropromoters, or cell proliferation inhibitors. At the lower ERAP concentration in growth medium content of geropromoter(s) is too low for its effect manifestation and the evident «rejuvenation» of the cell culture is observed. At the higher concentration of ERAP (100 $\mu\text{l}/\text{ml}$) the content of geropromoter(s) reaches the «working» value and this not only masks the effect of geroprotector(s) but also leads to the cell culture «senescence». In experiments with Chinese hamster cells it was found that ERAP at 10 $\mu\text{l}/\text{ml}$ had no effect on cell cloning efficiency and at 100 $\mu\text{l}/\text{ml}$ almost completely inhibited it. We think that mass cell culture is much less sensitive to geropromoter activity of ERAP and therefore in the cell kinetic experiment we could only observe accelerated cell death and «biological age» increase but not the complete inhibition of cell culture propagation.

87. MITOCHONDRIAL DNA MUTATIONS AND AGING

K. Khrapko (*Harvard Medical School, Boston, MA, USA;*
khrapko@hms.harvard.edu)

Mitochondria are abundant cellular organelles, whose primary function is to provide the cell with ATP by burning

food, i.e. combining it with oxygen we breathe via oxidative phosphorylation, a process known to generate chemically aggressive reactive oxygen species. Mitochondria possess their own 16kb-long DNA densely packed with genes coding for a few polypeptides essential for oxidative phosphorylation and RNAs needed for their translation. Mitochondrial environment apparently is not safe for DNA and, as we age, mitochondrial DNA (mtDNA) accumulates high levels of somatic mutations. The hypothesis that these mutations are involved in aging has been suggested decades ago but it remains controversial, in part because of the insufficiency of reliable data regarding abundance and fine spatial distribution of mutations in aged tissues. Recently, this hypothesis suffered unprecedented swings of credibility as data from mtDNA mutator transgenic mice were first interpreted to strongly support the hypothesis and later to equally strongly reject it. However, mutator mice may not be an adequate model for natural murine aging, and even more so, human aging, because of the differences in the spatial-temporal distribution of mtDNA mutations in normal vs. mutator mouse and in human vs. mouse. Several models of how mtDNA mutations may affect aging, which take into consideration cell-type specificity (mutations can concentrate in rare but critical cell types within tissue), and clonal expansion of mutations within individual cells, will be discussed. It appears that mtDNA mutations are either indeed driving certain aspects of aging or at least are on the verge of doing so. The origin of mtDNA mutations remains as controversial as their role in aging. The prevailing view is that abundant oxidative mtDNA damage caused by reactive oxygen species is converted to mutations during DNA replication. However the data are mixed, and other studies imply pure polymerase error or damage other than oxidative. Apparently the picture is complex as different mtDNA mutations may have different origin, prevalence and role in different cell types. The progress in this field is slow, as existing measurements of mtDNA mutations differ by orders of magnitude and it is still not clear which ones are correct and what do the real mtDNA mutations look like.

88. REGULATION OF REPLICATIVE SENESCENCE BY INSULIN-LIKE GROWTH FACTOR-BINDING PROTEIN 3 (IGFBP3) IN HUMAN UMBILICAL VEIN ENDOTHELIAL CELLS

J.-R. Kim¹, K.S. Kim¹, M.S. Kim¹, Y.B. Seu², Y.H. Chung³
(¹*Department of Biochemistry and Molecular Biology, College of Medicine, Yeungnam University, Daegu, Korea;*
²*Department of Microbiology, College of Natural Science, Kyungpook National University, Daegu 702-701, Republic of Korea;*
³*Department of Pharmacy, College of Pharmacy, Pusan National University, Pusan 609-735, Republic of Korea; kimjr@med.yu.ac.kr*)

Insulin/insulin-like growth factor (IGF) signaling pathways are among the most conserved processes in aging from yeast to mammals. Previously, using cDNA microarray technology, we reported that expression of IGFBP3, one of the IGF-binding proteins, was increased with age in human dermal fibroblasts. In this study, the role of IGFBP3 on cellular senescence was studied with human umbilical vein endothelial cells (HUVECs). The expression levels of IGFBP3 mRNA and protein were increased in HUVECs with age. Knockdown of IGFBP3 in

old cells with IGFBP3 shRNA retrovirus resulted in the partial reduction of a variety of senescent phenotypes, such as changes in cell morphology, and decreases in population doubling times and senescence-associated β -galactosidase (SA-beta-gal) staining. Down-regulation of IGFBP3 rescued the growth arrest induced by p53 overexpression in young HUVECs. In contrast, up-regulation of IGFBP3 in young cells and prolonged IGFBP3 treatment accelerated cellular senescence, confirmed by cell proliferation and SA-beta-gal staining. The FOXO3a protein level was increased in old IGFBP3 shRNA cells. The treatment of young HUVECs with IGFBP3 repressed the levels of FOXO3a protein. Furthermore, calorie restriction reduced IGFBP3 protein levels, which were found to be increased with age in the rat liver and serum. These results suggest that IGFBP3 might play an important role in the cellular senescence of HUVECs as well as *in vivo* aging.

89. EFFECT OF DELTARAN ON MEDIATOR BALANCE IN LEFT-SIDE PROFILE RAT BRAIN IN AGEING

T.K. Kim¹, A.M. Mendzheritsky¹, G.A. Ryzhak² (¹Rostov State Pedagogical University; ²St. Petersburg Institute of Bioregulation and Gerontology, Russia; galina@gerontology.ru)

Vascular pathology of the brain is one of the most complicated problems of present-day gerontology as it is extremely widespread among the populations of the developed countries and is frequently a cause of death or disablement in old and very old persons. This substantiates the importance of the search for new efficient methods of treatment for cerebrovascular pathology and prevention of the stroke. This study was aimed at the evaluation of Deltaran effect on mediator balance in left-side profiled rat brain for the correction of pathophysiological disorders, which develop after carotid arteries occlusion in both old and young animals. The study was performed on 46 Wistar rats with body weight of 180–200 gr. aged 3 mos. and 46 rats with body weight of 450–480 gr. aged 20 mos., with left-side brain profile. The animals were randomly divided into 6 groups. Animals of different groups had their left or right carotid artery (LCA or RCA) vasoligated, after which they intraperitoneally received Deltaran in the dose of 1.25 mg/kg. The study showed, that survival rate made 62.5% in left-side profiled animals in case of 3-min. RCA or 24-hr LCA occlusion. In the conditions of intermittent brain blood circulation disorders (3-min. RCA occlusion) the right hemisphere of left-side profiled animals' brain showed serotonin level reduced by 24% ($p < 0,05$), and serotonin metabolite by 26% ($p < 0,05$). The ratio of noradrenalin to dopamine was reliably increased as compared to the control (by 24%, $p < 0,05$), as did the ratio of noradrenalin to serotonin (by 50%, $p < 0,05$). Thus, the right hemisphere showed a shift in neuromediators balance towards the activation of noradrenergic system. Deltaran contributed to the growth of serotonergic system activity in cortical hemispheres, and of noradrenergic system in stem structures of animals with predominant left hemisphere. The administration of Deltaran before the arterial occlusion contributed to the increase of survival rate and to the redistribution of neuromediator balance towards the higher extent of activation of serotonergic system in the brain structures of left-side profiled rats.

90. GENDER-DEPENDENT CHANGES OF CELLULAR ATHEROSCLEROTIC INDICES PRODUCED BY STEROID HORMONES

R.A. Kireev¹, I.V. Andrianova², A.N. Orekhov³ (¹Research Institute for General Pathology and Pathophysiology, Moscow; ²Institute of Experimental Cardiology, Moscow; ³Institute for Atherosclerosis Research, Moscow, Russia; KireevRA@mail.ru)

Objective: The aim of present investigation is to *in vitro* study the effect of sex hormones on atherosclerotic indices in the primary culture monocyte/macrophages (MC/M ϕ) and intimal cells from female and male aorta. *Material and Methods:* Primary 7-days cultures of cells isolated by digestion with collagenase either atherosclerotic regions of female and male aortic intima were used for experiments. Monocytes were obtained after separation of blood samples by gradient centrifugation on Ficoll-Paque and were used either after 1st day in culture or after their maturation to macrophages over 10–14 days. Cholesterol accumulation in cultured MC/M ϕ was induced by incubation with 100 μ g/ml LDL from CHD patients. Estradiol (Es), testosterone (T), or dihydrotestosterone (DHT) (10^{-7} – 10^{-9} M) were added to cells culture. Androgen receptor antagonist (flutamide) was added to monocyte/macrophages culture in concentration 10^{-6} M. After 24 h incubation, intracellular cholesterol content was measured using enzymatic kits. DNA and protein synthesis was evaluated by [³H]-thymidine and [³H]-leucine incorporation into cells. *Results:* In atherosclerotic cells (initial lesion, fatty streak) Es reduced intracellular cholesterol content at concentration 10^{-7} – 10^{-9} M and inhibited proliferation of cells from female and male aortic intima. However, T increased intracellular cholesterol content and proliferation in intimal male, but not female cells. DHT increased intracellular cholesterol content and DNA synthesis in any case. Both, T and DHT increased [³H]-leucine incorporation in intimal male cells. In cultured female MC/M ϕ the intracellular cholesterol accumulation was prevented by Es treatment, but the effect was dependent from donor's age and menopausal status. Androgens significant increased intracellular cholesterol accumulation in MC/M ϕ culture in female and male. This androgen-associated increase in cholesterol accumulation was eliminated by coincubation with the AR antagonists. ER α , β and AR immunoreactivity were clearly observed in MC/M ϕ cells by immunocytochemistry. *Conclusions:* These data demonstrated that the possible role of sex hormones in atherogenesis is unequivocal since they produce different regulatory effects due to the physiologic role and tissue-specific cellular response to stimulation. *Supported by Regional Public Foundation of Russia Medicine Support and President of Russia for Young Scientist grants (MK-5010.2006.4).*

91. EFFECT OF EXOGENOUS ADMINISTRATION OF MELATONIN AND GROWTH HORMONE ON PRO-AANTIOXIDANT FUNCTIONS OF THE LIVER IN AGING MALE RATS

R.A. Kireev¹, A.C.F. Tresguerres², C. Ariznavarreta², E. Vara³, J.A.F. Tresguerres² (¹Research Institute for General Pathology and Pathophysiology, Moscow, Russia; ²Department Physiology, Medical School, University Complutense of Madrid; ³Department Biochemistry and Molecular Biology, Medical School, University Complutense of Madrid, Spain; KireevRA@mail.ru)

Ageing is accompanied by changes in the morphology and physiology of organs and tissues, such as the liver.

This process might be due to the accumulation of oxidative damage induced by reactive oxygen (ROS) and reactive nitrogen species (RNS). Hepatocytes are very rich in mitochondria and have a high respiratory rate, so they are exposed to large amounts of ROS and permanent oxidative stress. Twenty-four male Wistar rats of 22 months of age were divided into three groups. One group remained untreated and acted as the control group. The second was treated with growth hormone (GH) (2 mg/kg/d sc) and the third was submitted to treatment with 1 mg/kg/d of melatonin in the drinking water. A group of 2-month-old male rats was used as young controls. After 10 wk of treatment the rats were killed by decapitation, and the liver was dissected and homogenized. Mitochondrial, cytosolic and microsomal fractions were obtained and cytochrome C, glutathione peroxidase, s-transferase and nitric oxide (NO) were measured. Aging induced a significant increase in mitochondrial nitric oxide. An increase in cytochrome C in the cytosolic fraction and a reduction in the mitochondrial fraction with age was also observed. Both GH and melatonin treatments significantly reduced the enhanced measures and increased the reduced values. A reduction in glutathione peroxidase and glutathione S-transferase was found in old control rats when compared with the group of young animals. Treatment for 2.5 months of old rats with GH and melatonin were able to increase the enzymes reaching values similar to those found in young animals. In conclusion, GH and melatonin treatment seems to have beneficial effects against age-induced damage in the liver. *This work was supported by grants from C.A.M. (8.5/0062/2001). Dr. Kireev Roman was supported by FEBS Fellowship.*

92. AGING VERSUS RELIABILITY: STOCHASTIC FREE-RADICAL MODULATIONS OF THE PROGRAMMED GENETIC MELODIES

V.K. Koltover (Institute of Problems of Chemical Physics of RAS, Chernogolovka, Moscow, Russia; koltover@icp.ac.ru)

Despite phenotypic variety of organisms, aging is governed by the common quantitative laws. First, each species is characterized by a species-specific maximal life-span potential (T_1). Second, the growth of mortality rate with age obeys to Gompertz law of mortality that has been confirmed for people, other mammals, flies, mollusks and even for prokaryotes. Third, T_1 values are inversely related to the resting metabolic rates of the species (Rubner scaling relation). The universal laws of aging are naturally explained on the basis of the systems reliability approach. The regular conferences, which were initiated by the Committee on Reliability of Biological Systems of the Academy of Sciences of the former USSR, starting from 1975, to deal with the problem of reliability of biological systems, have given a strong impetus to research in this direction (Grodzinsky et al., 1987; Koltover, 2004). Our reliability theory of aging has its origin in the principles that (i) all biomolecular constructions are designed in keeping with the genetic programs in order to perform the preprogrammed functions; (ii) all constructions, starting from the level of enzymes, perform their functions with limited reliability, parameters of which are preset by the genetic programs (Blumenfeld, Koltover, 1972; Koltover, 1981). Additionally, it was postulated that there is a finite number of critical longevity-assurance structures (LAS), the genes of the highest hierarchical level, which govern the aging process (LAS). Since all reliability facilities, among

them — preventive maintenance, repair, and redundancy of functional elements, are limited, stochastic damages in LAS accumulate up to the threshold dysfunction levels. As a result, each organism has the limited life-span. The mortality rate functions, generated from this theory, supply the good quantitative fits to the experimental data, contrary to other models, which provide only qualitative descriptions. Using the experimental mortality curves, we estimated that the numbers of LAS is about 10. It corresponds, by the order of magnitude, to the numbers of the so-called longevity-assurance genes which have been recently discovered in nematodes and other species. Random malfunctions of the respiratory mitochondrial enzymes are of the first importance since they result in the advent of oxygen anion-radicals ($O_2^{\bullet-}$) and their chemically reactive toxic products. These stochastic free radical failures crucially modulate the melody of longevity, filed in the LAS. Basing on this reliability-theory approach, we estimated that longevity of human brain could essentially exceed 120 years, should the antioxidant defense against $O_2^{\bullet-}$ and NO^{\bullet} be perfect.

93. ANTIOXIDANT THERAPY OF AGING: THE SYSTEMS RELIABILITY OVERLOOK

V.K. Koltover (Institute of Problems of Chemical Physics of RAS, Chernogolovka, Moscow, Russia; koltover@icp.ac.ru)

In physical chemistry, antioxidants are, by definition, the chemicals which intercept active free radicals thereby inhibiting free radical chain reactions of oxidation (Hinshelwood & Semenov, 1957). In biomedicine, however, true mechanisms of the antioxidant defense are not that straightforward. Contrary to popular opinion neither natural antioxidants, like vitamin E, ascorbic acid or flavonoids, nor synthetic antioxidants like butylated hydroxytoluene (BHT) are able to operate *in vivo* the simple anti-radical way, i.e. — as free radical scavengers, if one take into account that the rate constants (k) and the real concentrations of the so-called antioxidants are negligibly low to compete for reactive oxygen species (ROS) with the specialized anti-oxidative enzymes, such as superoxide dismutase (SOD), glutathione peroxidase (GSH-Px) and catalase. For example, SOD scavenges superoxide radicals ($O_2^{\bullet-}$) with $k \approx 10^9 M^{-1} c^{-1}$ while the k values for ascorbic acid and other antioxidants with $O_2^{\bullet-}$ do not exceed $10^4 M^{-1} c^{-1}$. For OH^{\bullet} , k is about 10^{11} – $10^{12} M^{-1} c^{-1}$ with any organic molecules and, therefore, there is nothing able to intercept it *in vivo* (Koltover, 1996). In engineering, meanwhile, preventive maintenance of functional elements (prophylaxis) is known to be the main line of keeping the high reliability. The same reliability-theory idea of the prime importance of preventive maintenance seems to be rational in biology (Koltover, 2004). Besides, it is known that vitally important processes are controlled by hormones. Following this line, we showed that antioxidant BHT can decrease the mitochondrial production of $O_2^{\bullet-}$ thereby performing the preventive, prophylactic, antioxidant protection against $O_2^{\bullet-}$ and its toxic products (Koltover, 1996). Before then, we revealed the dramatic increase of ACTH and corticosteroids and decrease of TSH and T_3 in blood of the rats administered with BHT (Frolkis et al., 1990). Furthermore, in the experiments with *Macaca mulatta* monkeys a strong positive correlation between the levels of hormones (cortisol, DHEAS) and the SOD activity in the animals' blood has been discovered (Goncharova

et al., 2006). However, under the psycho-emotional stress, when there is an obligatory growth in production of $O_2^{\cdot-}$ as the by-product of respiration, no changes in activity of SOD or GPx have been detected (Bogatyrenko, Koltover, Goncharova et al., 2007). It is apparently this transient dynamics deficiency in activity of SOD and other antioxidant enzymes that can be made up with flavonoids or other antioxidants, the introduction of which provides the prophylactic maintenance against ROS via the timely induction of the defense enzymes.

94. EARLY-LIFE HYPOXIA IN THE DEVELOPMENT OF BEHAVIORAL DYSFUNCTIONS IN ACCELERATED-SENESCENCE OXYS RATS, CORRECTION WITH ANTIOXIDANTS

E.E. Korbolina¹, I.G. Agafonova², S.V. Sergeeva¹, N.A. Trofimova¹, N.P. Mishenko², N.G. Kolosova¹

¹Institute of Cytology and Genetics, of SB RAS, Novosibirsk;

²Pacific Institute of Bioorganic Chemistry of FEB RAS, Vladivostok, Russia; lungry@yandex.ru

The OXYS rats have shortened lifespan as compared with Wistar and show early development of several pathological phenotypes similar to geriatric disorders observed in humans, including early cataract and retinal disrotrophy, osteoporosis, accelerated involution of thymus, high blood-pressure. Our previous studies showed that behavior of young OXYS rats is similar to the behavior of old Wistar animals. Initially mitochondrial dysfunction increasing with age was supposed to play the key role in accelerated senescence and in the development of cognitive deficits in OXYS rats. In support of this suggestion, supplementation with those antioxidants that prevented mitochondrial dysfunction and energy deficiency increasing with ageing also significantly improved exploratory activity and learning ability in OXYS rats. Recently we have found that the specific behavioral alterations in senescence-accelerated OXYS rats e.g. increased anxiety, significantly reduced locomotor and exploratory activity, abnormal associative learning are not congenital and develop during the period from 4 to 12 weeks of age, earlier than mitochondrial dysfunction was registered. It is known that early postnatal energy deficits resulting either from alterations in the cerebral vascularity or from mitochondrial dysfunction strongly affect energy-consuming processes in brain contributing to the development of cognitive decline and dynamics of ageing process in brain. The investigation of high-energy phosphate metabolism by means of ³¹P-NMR spectroscopy did not reveal any signs of energy deficiency in OXYS rat's brain at the age of 2, 3, 4 and 12 weeks. However, altered phosphocreatine metabolism i.e. phosphocreatine accumulation and its active involvement in ATP synthesis was found in 3 weeks that is considered the typical manifestation of brain adaptation to hypoxia. Therefore, it was plausible to suggest that behavioral alterations in OXYS rats can be associated with oxygen deficiency during the period of intensive brain growth and can result from delayed development of cerebral microvascular network which is sharply defined at the age of 4 days and 2 weeks. The further investigation of cerebral blood flow velocity and diameter of cerebral vessels by means of MR-tomography revealed the significantly lowered means of these parameters in the brain of 13-month-aged OXYS rats as compared to Wistar confirming the presence of chronic brain ischemia in OXYS rats. Antioxidant histochrom (2,3,5,6,8-pentahydroxy-7-ethyl-1,4-naphtho-

quinone, 2 successive five-day courses by 1 mg/kg) had beneficial effects on the cerebral blood flow most probably acting as vasodilator and improved OXYS rats locomotor and exploratory activity and lowered anxiety. Supported by grants RFBR 05-04-48483 and 06-04-48068.

95. ACTIVITY OF THE IMMUNE SYSTEM FUNCTIONS DURING AGEING, STRESS AND ITS CORRECTION BY SHORT PEPTIDES

E.A. Korneva¹, A.V. Gumen², E.G. Rybakina¹ (¹State Research Institute of Experimental Medicine of RAMS, St. Petersburg; ²St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; korneva@vk5270.spb.edu)

Based on a number of lines of evidence, it has been proposed recently that development of age diseases of different etiology is due to changes in the activity of the immune system functions, which change during ageing. Experimental models for these studies, besides ageing itself, may include stress that is also accompanied by changes in the activity of the immune functions and therefore may be used to a certain extent as a model of ageing. Informative indicators of this activity are modifications of Lymphocyte-Activating Factors (LAF) production by macrophages, proliferative activity of thymocytes initiated by Interleukin-1 β (IL-1 β), cytotoxic activity of splenic natural killer (NK) cells. The aim of the work was to study changes in these parameters of host defenses during ageing and stress as well as the possibility of their correction by short synthetic peptides with immunomodulatory activity, namely Vilon (Lys-Glu), Epitalon (Ala-Glu-Asp-Gly) and Cortagen (Ala-Glu-Asp-Pro), designed at St. Petersburg Institute of Bioregulation and Gerontology. It was shown that lipopolysaccharide (LPS) stimulated LAF production by peritoneal macrophages of aged 18 month mice was 65% weaker than in case of young 2 month ones. Ageing of mice was also accompanied by the reduction of LAF production by cells of mice exposed to rotation stress. Vilon, Epitalin and Cortagen — structural analogs of peptides from thymus, epiphysis and the brain cortex correspondingly — in doses 0,0025; 0,025 and 0,25 ng/ml induced LAF production by non-stimulated macrophages of young mice, but only Vilon revealed the same action on macrophages of aged mice. Vilon and Cortagen enhanced LPS induced LAF production by macrophages of aged mice, thus revealing age-protective properties. These peptides also exerted stress-protective effects by changing stress-induced LAF production by cells of young and aged mice. Stress-protective properties of Vilon, Epitalin and Cortagen were confirmed on the models of stress-induced alterations of functional activity of murine thymocytes, activated by IL-1 β , and NK cells from rat spleen. These data demonstrate one of possible mechanisms of impairment of the immune functions activity during ageing and form basis for creation of means for their correction by short peptides with age- and stress-protective properties. Supported by RBRF grant № 06-04-48609.

96. AGE DEPENDENT CHANGES IN LIPID METABOLISM AND THROMBOCYTES INTRAVASCULAR AGGREGATION IN CARDIOVASCULAR PATHOLOGY DEVELOPMENT

L.S. Kozina, T.V. Kharitonova, I.M. Kirichenko

(St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; milakozina@mail.ru)

The aim of the investigation was to study of dependence of ischemic heart-disease and atherosclerotic cardiosclerosis development risk on age related changes in

thrombocytes intravascular aggregation and lipid metabolism. The morphological assessment of thrombocytes intravascular aggregation (the total content of thrombocytes and their active forms, thrombocytes aggregation along with the formation of low, middle and large aggregates) in all patients examined has been carried out. Besides, some indices of lipid metabolism including their peroxidation was also investigated (triglycerides and cholesterol content, HDL, LDL, TBA-active compounds, total antiradical and antioxidative activities). The imbalance between lipid peroxidation intensity and antioxidant system activity observed in cardiovascular pathology development was discovered in all the studied age groups: 40–50, 50–60, 60–70, 70–80 and 80 year old and older. This imbalance was the most distinct with the patients of middle and elderly age. The most obvious manifestation of oxidative stress was revealed in the group of 50–70 year old patients. At the same time the improvement of thrombocytes intravascular aggregation and lipid metabolism indices was noticed in the aged patients (80 year old and older). The damaging effect of oxidative stress, as well as enhancement of thrombocytes intravascular aggregation, became particularly apparent in chronic forms of ischemic heart disease and atherosclerotic cardiosclerosis, which could be due to the derangement of the structure and function of cardiomyocytes in lingering ischemia and reperfusion of myocardium. The data obtained gave grounds for using antioxidants in treatment of cardiomyopathies underlain by the imbalance between the demand of heart for the blood supply and the functioning of vascular system.

97. STUDY OF SHAPE DYNAMICS OF HUMAN AND ANIMAL LIFE-SPAN DISTRIBUTIONS

A.V. Kremntsova (Emanuel Institute of Biochemical Physics of RAS; kremntsova@sky.chph.ras.ru)

Dynamics of shape of human and animal life-span distributions was investigated in this activity. We compared patterns of life-span distributions without additional influence for estimation ranges of survival curves variability (plasticity). To fit the survival curve we chose two-parametric Gompertz function. Starting from Strehler-Mildwan correlation (linear correlation between Gompertz function parameters), we obtained theoretical dependence between mean life-span and variance. This dependence had nonlinear shape and was in accordance with actual (experimental and demographic) data. The value of mean life-span and variance appears limited above for all biological species. Our estimations of maximum mean life-span for humans is approximately 100 years. It has been shown that developed method of life-span analysis can be applied to life-span data processing with additional influence (high temperature, ionizing radiation, antioxidants).

98. EFFECT OF ANTIOXIDANT — PHENOSAN ON THE DEVELOPMENT OF SPONTANEOUS LEUCOSIS IN AKR MICE

A.V. Kremntsova, V.N. Erokhin, V.A. Semenov, E.B. Burlakova (Emanuel Institute of Biochemical Physics of RAS; kremntsova@sky.chph.ras.ru)

The effect of synthetic antioxidant β -(4 hydroxy-3,5-ditertbutylphenyl)propionic acid (phenosan) at various doses on the development of spontaneous leucosis in AKR mice was studied. The effectiveness of the substance was determined from the curves of survival, life-spans of the animals, and the incidence rate of leucosis. Phenosan ex-

hibited an antitumor activity at the therapeutic dose (10^{-4} mol/kg, 4 administrations) and at the ultra-low dose (10^{-14} mol/kg, 4 administrations). The use of the nonparametric Kolmogorov-Smirnov two-sample test made it possible to conclusively demonstrate significant ($p < 0.05$) differences between life-span distributions in the check experiments and experiments where phenosan were applied. The 10^{-4} mol/kg dose increased significantly the life-span of the short-lived subpopulation, and 10^{-14} mol/kg dose increased the life-span of the long-lived subpopulation. The findings are indicative of the phenosan, at low and ultra-low doses, like a regulative biologically active factor. The ultra-low dose of the substance appeared promising to be used for prophylactic purposes.

99. THE GENERAL THEORY OF HEALTH AS A BASIS FOR SIMULATION OF AGEING PROCESS IN A COMPLETE ORGANISM

V.N. Krutko (Institute for Systems Analysis; krutkovn@mail.ru)

Developed by the author «General Theory of Health» (GTH) is a result of generalization of existing in scientific literature concepts and theories concerning the most important principles of organism action in environment and mechanisms of pathology. On this generalization was created conceptual base of GTH. This base includes in itself 16 conceptions, united in three groups: phenomena of illness, norms and pathology; criteria of organism functions quality; mechanisms of organism functioning. GTH rests on contemporary theories of pathology, human ecology, theories of needs and theories of life quality. GTH deals with such general entities as functional reserves, adaptation, compensation and human-environment interactions. Within given theory condition of organism is characterized by such state variables as: Z — vector of the structural condition of organism; F — vector of the functional condition of organism; R — vector of the current functional reserves; RA — vector of the functional reserves of adaptation; RG — vector of the maximum potential attainable in onto genesis value of functional reserves; S — organism state vector; $\$$ — vector of the non biological possibilities and limitations of organism. The system of the models describing dynamics of given variables is developed. Created models were used for investigation of such a high generalization level phenomenon as function recruitment, adaptation and compensation. It was also considered phenomenon structure-function provisions of organism life. These models can be effectively used also for simulation age changes of an organism within the limits of T. Kirkwood theories «disposable soma» and «the system theory of ageing» by V. Dontsov and V. Krut'ko.

100. PREVENTION OF AGEING AS A SYSTEM TECHNOLOGY

V.N. Krutko, V.I. Dontsov (National Gerontology Center; krutkovn@mail.ru)

In the Institute for Systems Studies of the Russian Academy of Sciences in cooperation with the National Gerontology Center the development of complex Aging Prevention Technology (APT) is conducted. APT includes: computer-controlled procedures for speed definition of natural ageing of a human organism as a whole and of its separate subsystems (biological age assessment); definition of expected life span on this basis; choice of personal age retardation measures set and help in putting these means into daily practice. The principal novelty of the APT lies in the fact that it is oriented to diagnostic and

correction of inner processes of wearing and exhaustion of reserves even in an absolutely healthy organism during its normal functioning, instead of dealing with particular diseases. APT surpasses the available similar techniques for solution of the given problem. Five features may be pointed out. First, it exceeds them in the general methodology, offering an author's development of the system theory of ageing. Second, the advantage is embodied in the algorithm of diagnostics, as it gives capability of definition of both integral biological age, and partial ages of separate systems of an organism and it helps to calculate an expected life span as well. Third, the APT comprises a developed computer system for optimization of personal diets enabling to retard the process of ageing. Forth, the advantage of the APT is in its methodology of selection and applying of age retarding means, as it employs an integral method of simultaneous impact on basic processes of ageing of different levels. Fifth, it uses original ageing constraining means. We consider the under listed types of means the most perspective for ageing retardation: nootropic and neurometabolic drugs; antioxidants; enterosorbing and endoecology means; caloric restricted diets; physical exercises; hormone replacing therapy; etc.

101. SYSTEM APPROACH TO AGING

V.N. Krutko¹, A.V. Khalyavkin² (¹*Institute of System Analysis of RAS, Moscow*; ²*Institute of Biochemical Physics of RAS, Moscow, Russia*; ab3711@mail.sitek.net)

Almost three decades ago C.F. von Weizsacker said «I do not see why it should not be physically possible to have immanently immortal individuals as well as it is possible to have immanently immortal species. Why should it not have been possible for life to «construct» individuals, which also last indefinitely? I see no physical reason why this should not be possible». In order to find the plausible answers let us recall that the basic life processes are self-reproduction, self-development and self-maintenance of complex organic systems. Aging is characterized by incomplete self-maintenance of an organism. But what is the reason of such incompleteness? For understanding of the causes and mechanisms of aging the application of system approach is rather useful, as the organism represents a super complex system. It consists of hierarchy of cooperating subsystems. The functioning of subsystems is subordinated to general purposes, is coordinated and managed by control systems of organism. For this reason an individual functioning as a single unit. The steady disturbances in coordination of activity of subsystems can result in aging. The grandfather of a general theory of systems A.A. Bogdanov as far back as the 1928 has called a «system divergence» (an increasing of subsystems' non-coordination) as the main cause of an aging. It is possible that the inadequate interaction of an environment and an organism is the main reason of such kind of non-coordination. The findings are published last time from cellular level to population level that are compatible with this approach.

102. THE PROBLEM OF HIGH-GRADE PSYCHOLOGICALLY COMFORTABLE DIET CONSTRUCTION AT CALORIC RESTRICTION BY MEANS OF MODERN COMPUTER TECHNOLOGY

V.N. Krutko, N.S. Potyomkina (*National Gerontology Center*; krutkovn@mail.ru)

The problem: Modern gerontology considers a caloric-restricted but complete well balanced diet as being one of

the most effective means of prolonging healthy and active life. The complexities of individual diet selection, and the difficulties of changing individual nutritional habits are the main problems here. *Results:* We are created a method and computerized technology for solving of these problems, realized in the form of computer system (CS) «Nutrition for health and longevity». Diet is selected with the help of an optimization procedure. The system enables to construct an optimized menu on the basis of existing specifications of nutrients consumption, individual needs and preferences of the client and restrictions established by his doctor. A number of problems appear in the process of linear optimization of ration endowed with the chemical structure conforming to the specified norms and the main one is that the system of equations determining the solution turns out to be incompatible. The removal of top restrictions on the content of a great number of vitamins and minerals has allowed to overcome this problem. This decision is based on the assumption proved to be true that under restrictions both on the caloric content and the content of fibers and lipids, the content of vitamins and minerals can't exceed physiologically allowed and even useful volumes. Moreover, numerous calculations of various rations have shown that the satisfaction of restrictions on the minimal content of some limiting components presumes the significant excess over the norm of some other components. The component that often exceeds the official norm is, for example, vitamin C. CS includes some data and knowledge bases: «Chemical Composition of Foodstuffs», «Properties of Nutritional Components», «Food Components Consumption Norms», and «Recommendations for Healthy Diets». CS was used for analysis of nutrition for various individuals, groups of people, and also for the analysis of quality of the standard officially recommended diets in sanatoria. Even in this last case significant deficiencies of essential nutrients which have been corrected by means of CS have been revealed.

103. THE PROBLEM OF OPTIMIZATION OF BIOLOGICAL AGE ASSESSMENT METHOD

V.N. Krutko, T.M. Smirnova, V.I. Dontsov (*Institute for Systems Analysis*; krutkovn@mail.ru)

Purpose: The analysis of efficiency of the standard technique of biological age (BA) assessment for particular group of patients and optimization of this technique was the purpose of research. *Material and methods:* 195 essentially healthy people (159 women and 36 men) in the age of 20–74 years who addressed the aging prevention center in 1995–1999 were inspected. The set of biological age biomarkers (BAB) and the conditions of examination corresponded to the «Kiev test» of BA definition [Voitenko V.P., Tokhar A.V., Polyuhov A.M., 1984], based on the model of multiple linear regression. The set of utilized statistical methods included correlation and regression analysis, analysis of variance, t-test, chi-square test and factor analysis. The coefficient of multiple determination between BA, defined by the set of biomarkers, and calendar age was used as BA definition quality criterion. *Results:* The quality of BA estimates by equations of the «Kiev test» as in its full version including 13 biomarkers, and in reduced version (4 biomarkers) for the ours inspected population has appeared worse as compared with the base Kiev population, for which one these equations were obtained, in 1.5 times for women and in 2.5 times for men.

The analysis of age dynamics of biomarkers has revealed for some of them reliable non-linear, and in a number of cases even nonmonotone nature. The nonlinear regression has allowed to construct new formulas for BA estimates (full and reduced for both sexes) with quality of approximation superior to the «Kiev test». *Conclusion:* The efficiency of methods of BA estimation (mathematical models and sets of biomarkers) can be unequal for different populations. The optimization of methods of BA definition requires reference to non-linear nature of age dynamics of BA biomarkers.

104. MENTAL PERFORMANCE AND SENSOMOTORIC COORDINATION AS MARKERS OF BIOAGE: SEXUAL DIFFERENCES, NONLINEAR EFFECTS, PSYCHOPHYSIOLOGICAL CORRELATIONS

V.N. Krutko¹, T.M. Smirnova¹, I.M. Larina²,
G.Y. Vasilieva² (¹Institute for Systems Analysis; ²Institute for Biomedical Problems; krutkovn@mail.ru)

Parameters of mental performance (MP) and sensorimotoric coordination ability (SCA) are widely used as markers of bioage. To use these markers correctly it is necessary to consider that not only age but other factors may affect them systematically. To study age trends and regular influences on MP and SCA we have fulfilled a longitudinal and a cross-section research by means of computer tool «Mental Performance Assessment System» developed in National Gerontology Center for quick estimation of MP, SCA and psychoemotional state. It includes computer versions of Spielberger–Khanin, SAN and SCA tests and an arithmetic task. Professionally homogeneous group of 10 men (21–59 years) and 17 women (28–67 years) participated in cross-section research. Testing was conducted within the working day. Arterial pressure and heart rate were registered before and after the test session. The level of salivary cortisol was defined the day of testing. The longitudinal research was carried out within 2 years by the woman of 52 years on the beginning usually once a week while awake and working as in the day as in the night time. Significant decrease of MP with age revealed only for men, and decrease of SCA — only for women. Impairment of somatic state, tone and mood was characteristic for both sexes. Growth of state anxiety with age and correlation between anxiety and MP took place only in men. Cortisol level in men rose with age and was in negative correlation with somatic state. Cortisol level in women was positively correlated with MP and did not show any age trend. The physiological cost of the test session increased with age manifesting in growth of arterial pressure and heart rate values after testing. Significant dependence of MP and SCA on months and daily periodicity of MP and state anxiety is revealed. The results received allow to suppose circadian and circannual components in the dynamics of MP and SCA probably due to the influence of biorhythms of hormonal systems.

105. EFFECT OF SMALL PEPTIDES ON ADAPTIVE AND SEXUAL BEHAVIOR OF AGEING RATS

I.A. Kudriavtseva¹, A.A. Bairamov², O.M. Efremov²,
I.N. Zaichenko², G.A. Ryzhak¹, E.I. Grigoriev¹
(¹St. Petersburg Institute of Bioregulation and Gerontology;
²State Research Institute of Experimental Medicine;
ibg@gerontology.ru)

One of the priorities of modern gerontology is the design of peptide medications capable of correcting age-

related disorders in the central nervous system. Reduced stress resistance and involution of reproductive system, accompanied by significant neuroendocrine changes in the organism reduce the quality of life in older people. Peptide bioregulators are in many cases capable of resolving this problem. Our work was aimed at studying the possibility of correcting age-related disorders in adaptive and sexual behavior (SB) in male rats with two peptides — Vilon (Lys-Glu) and its analogue (Glu)-Lys in the experimental model of ageing male reproductive system — hemigonadectomy (HGE). «Open field» adaptive behavior test of HGE animals showed that Vilon enhanced the spontaneous motional activity in the animals, which was earlier reduced by surgery, this effect being more noticeable in case of the dose of 0,1 µg per rat, than 1 µg per animal. The analogue of Vilon caused an insignificant increase in the motional activity, but the animals treated with it showed a low level of anxiety, lower dosage again producing a stronger effect. Dipeptides effect on SB of HE animals was studied using high doses — 100 µg and 250 µg per animal. It was shown that Vilon did not cause any significant changes in SB of the animals, exerting only a weak stimulating effect on their motivation and copulative behavior. Administration of the analogue of Vilon to HGE male rats stimulated their SB, and higher dose improved SB parameters of old animals up to the level of young ones. Thus, we may conclude that small peptides and their synthetic analogues have good prospects in the correction of age-related adaptive and reproductive behavior disorders.

106. PECULIARITIES OF BONE MARROW ECTOPIC GROWTH IN OLD ANIMALS

I.N. Kurilov (Chelyabinsk State Institute of Laser Surgery;
inkurilov@rambler.ru)

Organism ageing is accompanied by lower intensity of reparative processes in different organs and tissues. Timely restoration of bone marrow integrity in case of different traumas is extremely important for the organism. To find out the difference between bone marrow reconstruction and osseous coat restoration we made an attempt of ectopic transplantation of hematopoietic tissue to the intestinal mesentery. Punctured bone marrow was taken from thighbones of young and old rats, basing on the fact that bone marrow cells and osseous tissue form a combined functional system. Experiments showed, that in a week after transplantation of young animals' bone marrow to the mesentery hematopoietic foci appear, accompanied by extensive growth of fibroblasts. Erythroblast islets are formed, and erythroid cells with different degrees of maturity surround the central macrophage. By the 30th–35th day hematopoietic cells are gradually enveloped with newly formed osseous tissue. The same phenomena take place in case of transplantation of bone marrow taken from old animals, but their development is slower, which has an effect on the formation of bone coating around hematopoietic tissue. This fact may be explained by drastically reduced ability of old animals' bone marrow osteoblasts to form osseous tissue. Many authors explain this effect by the suppression of growth factors, which stimulate synthetic activity of the osteoblasts. In particular, higher level of steroids in the blood accompanies the loss of glucocorticoid receptors in the ageing organism, and thus insulin-like factor I transcription in the osteoblasts is significantly in-

hibited. Besides that, lower rate of osteoclasts formation is observed in the ageing organism due to reduced secretion of hormones, in particular of parathyroid hormone. Basing on the above, we may come to a conclusion on the drastic age-related inhibition of osseous tissue remodeling due to the loss of functional properties by main participants of these processes — osteoclasts and osteoblasts, leading to reduced mineralization and mass of the bones, manifested in the form of osteoporosis.

107. MELATONIN AS PROMISING BIOLOGICAL MARKER OF ONCOLOGICAL AND NEURODEGENERATIVE PROCESSES IN ELDERLY PEOPLE

T.V. Kvetnaia, O.E. Antropova, E.S. Golubitskaia, A.V. Antropov, I.V. Knyazkin (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; kvetnaia@gerontology.ru)

Melatonin (MT) initially discovered in bovine pineal glands was subsequently detected also in a number of extrapineal tissues, including the retina, gut, as well as the endocrine and immune systems. MT shows a wide spectrum of activities: it plays a key role in coordinating neuroendocrine signals, affects the nervous, endocrine and immune systems as well as the organism as a whole. In addition, MT can inhibit cell division. Being most endogenous powerful antioxidant, MT involves in the mechanisms of neurodegenerative disorders. Since MT secretion and the urinary excretion of its main metabolite 6-sulphatoxymelatonin (aMT6s) appear to be affected by tumor growth, Alzheimer's diseases and other pathologies, which are associated with aging, a possible use of MT and aMT6s for diagnosis and prognosis could be considered. It is now well established that the proliferative activity of tumor cells plays a key role in neoplastic growth, invasiveness and metastatic formation. Therefore the measurement of this property has been suggested to be effective in judging the malignant potential of various carcinomas. From this point of view PCNA is one of the most suitable markers. However, it is necessary to emphasize that PCNA is an immunohistochemical marker of proliferative activity and its determination is possible only in tissue specimens of tumors obtained during surgery. Using either immunohistochemical method and radioimmunoassay we have studied the excretion of 6-sulphatoxymelatonin (aMT6s) in urine, the expression of proliferating cell nuclear antigen (PCNA) and the number of melatonin-immunopositive cells in different primary gut and lung tumors (cancer of colon, rectum, stomach and lung) without metastases in 527 old patients (average age is 70 years). Our results showed strong positive correlations between the expression of PCNA in tumors and aMT6s excretion in urine. As opposed to that strong negative correlations were observed between melatonin-immunoreactivity and proliferative activity of tumor cells. These parameters were independent of the sex and histological type and localization of tumor. Thus, it has been established a new non-invasive method allowing a determination of the degree of tumor proliferation at different stage of malignant disease in daily clinical practice. In all cases of Alzheimer's diseases (85 patients, average age was 74 years) the decrease of aMT6s excretion has been registered. The results of this study testify about the promising value of MT as new biological marker, the determination of which could be useful for diagnosis and prognosis of the pathological processes, which are associated with aging.

108. EXTRAPINEAL MELATONIN: KEY ROLE AS PARACRINE SIGNAL MOLECULE IN AGING

I.M. Kvetnoy¹, M.A. Paltsev² (¹D.O. Ott Research Institute of Obstetrics and Gynecology of RAMS, St. Petersburg; ²Sechenov Moscow Medical Academy, Moscow, Russia; kvetnoy48@mail.ru)

During last decade, attention has been especially centred on melatonin (MT) — one of the hormones of the diffuse neuroimmunoendocrine system (DNIES), which was many years considered only a hormone of pineal gland. As soon as highly sensitive antibodies to indolealkylamines became available MT could be identified not only in pineal gland, but also in extrapineal tissues. In order to study the extrapineal production of MT in detail, we have used immunocytochemical methods with specific antibodies to MT, its main precursors — serotonin (ST) and N-acetylserotonin (N-ACS) as well as to main enzyme of MT synthesis — N-acetyltransferase (N-ACTF). Also the computer analysis of microscopical images and morphometrical methods have been applied. The expression of extrapineal MT were registered in neuroendocrine cells, located in gut mucosa, airway epithelium, liver, kidney, adrenals, thymus, thyroid, pancreas, ovary, carotid body, placenta and endometrium. Also, the immunoreactivity to MT was obtained in non-neuroendocrine cells, such as mast cells, natural killer cells, eosinophilic leukocytes, platelets and some endothelial cells. All cell types above demonstrated the immunopositive stain with antibodies to ST, N-ACS and N-ACTF. It enables to consider these cells as extrapineal sources of MT synthesis. The morphometrical analysis showed the hyperplasia and increase of functional activity of extrapineal MT-producing cells in aging. The above list of the cells synthesizing and storing MT indicates that MT has a unique position among the hormones of the DNES, being found in practically all organ systems. Functionally, MT-producing cells are certain to be part and parcel of the DNIES as a universal system of response, control and organism protection. Taking into account the large number of MT-producing cells in many organs, the wide spectrum of biological activities of MT and especially its main property as a universal regulator of biological rhythms, it should be possible to consider extrapineal MT as a key paracrine signal molecule for the local co-ordination of intercellular relationships, especially in aging, when the involution of pineal gland (and it follows, the decrease of MT synthesis there) takes a place.

109. THE TRAINED BRAIN COUNTERACTS AGEING BY RESTORATION OF MORPHOGENETIC GRADIENTS IN TISSUES

O.V. Kvitko (Institute of Genetics and Cytology, National Academy of Sciences of Belarus, Minsk, Belarus; O.Kvitko@igc.bas-net.by)

The cause of ageing is the accumulation of random epigenetic changes that disturb the gene expression. During embryogenesis and postnatal growth the special signalling mechanism reverses epigenetic mistakes and, thereby, rejuvenates the cells. This developmental antiageing mechanism insures the delay of functional decline to the point of the organism's ability to produce progeny. That is why complex species with extended growth periods have long life-spans. The natural process of rejuvenation is driven by the same extracellular spatio-temporal concentration gradients of morphogenetic molecules that regulate em-

bryogenesis. Various growth factors can function as morphogens. Morphogenetic gradients trigger the restoration of physiologically optimal gene expression by regulation of enzymes that modify DNA (cytosine methylation) and DNA-associated histone proteins (phosphorylation, acetylation and other modifications). After the end of growth concentration fluctuations of morphogens in tissues decrease and become insufficient for initiating the cascade of events resulting in rejuvenation of the whole body. For counteracting ageing and extending life of the adult organism intensive (embryo-like) morphogenic oscillations should be produced in many or all tissues. Such systemic stimulation of morphogenetic gradients may be achieved with the aid of specific brain-induced sequences of electrical impulses that can be named the antiageing brain waves. These invigorating signals trigger fluctuations of the levels of morphogens in tissues directly (through nerve endings) or indirectly, through modulation of the rhythmicity of hormonal production by endocrine glands. Antiageing waves are generated effectively by the brain which reaches the special functional state that is termed the developmental dominant. This salutary state of the brain insures a continuous improvement of the informational processing. The developmental dominant can be created by the combination of the two psychological approaches. The first is the formation of the priority of the infinitely expanding and harmonious spiritual development in the whole system of the person's motives. The second approach is a new kind of meditation. Many secular and religious meditation techniques generate unusual states of consciousness (which have favourable effects of mental and physical health) by concentration of the mind on some selected thoughts. In contrast, the proposed developmental mental practice trains the ability of the brain to embrace simultaneously variable and infinitely expanding information.

110. MORPHO-FUNCTIONAL CHANGES IN THYMUS DURING AGING AND AFTER PINEALECTOMY

T.Yu. Kvitnitskaya-Ryzhova, S.P. Malysheva (Institute of Gerontology, Kiev, Ukraine; smalysheva@bigmir.net)

Age changes of immunity, which lead to development of numerous diseases, related to deterioration of immune defense and increase of autoimmunity, depend substantially on different derangements in neuroendocrine-immune interactions. 73 thymuses of male Wistar rats (2, 7, 13, 26 mo) have been studied by means of light, electron microscopy, cytochemistry and morphometry. Histological study revealed the dramatic reduction of lymph tissue area and appropriate increase of fat tissue area (24 times) during aging. Starting with 13 months of age, the following changes occur: change of thymic cellular elements ratio, disconnection of cells, vacuolization of epitheliocytes, destruction of their organelles and decrease in their amount. Two types of thymic capillaries have been discovered, each of them having not only different structure and function, but also different changes during aging. After pinealectomy, age involution of thymus of old animals was delayed. That was confirmed by increase of lymph tissue area as compared to controls, increase of vascularization level, less expressed destruction of cellular elements, increase of functional activity of thymocytes, epitheliocytes and capillary endothelium, higher activity of alkaline phosphatase in microcirculatory bed. In young animals, on the contrary,

the volume of lymph tissue decreased due to increased level of thymocytes death by the mechanism of apoptosis that can be a consequence of failure of their differentiation. It was accompanied by increase of functional activity of thymocytes and epitheliocytes that was combined with development of destructive changes in mitochondria, their vacuolization and swelling. Different reaction on pinealectomy in thymus of rats of different age groups can be of primary importance for understanding of mechanisms of its involution.

111. MORPHO-FUNCTIONAL CHANGES IN MEDIAL AND LATERAL HYPOTHALAMUS DURING AGING AND IN STRESS CONDITIONS

T.Yu. Kvitnitskaya-Ryzhova, S.A. Mikhalsky (Institute of Gerontology of Ukraine AMS, Kiev; morphology@geront.kiev.ua)

Objective: to determine age-related structural, ultrastructural, ultracytochemical, immunohistochemical and morphometrical changes in ventromedial nucleus (VMN) and lateral hypothalamic area (LHA), which participate in regulation of autonomic and emotional manifestations of stress, as well as age-related structural peculiarities of their reaction to emotional-painful stress (EPS). *Materials and methods:* A comparative study of age-related changes of VMN and LHA of male Wistar rats of three age groups — adult (6 months), old (27 months) and extremely old (32 months) has been performed by means of light and electron microscopy, morphometry, ultracytochemistry and immunohistochemistry. EPS was simulated on rats of 8- and 27 months of age according to the method developed by F.P. Vedyayev and T.G. Vorobyeva (1983): 10 minutes daily within two weeks. *Results:* Numerical density of VMN neurons remained unchanged with age (from 8 to 27 months), decreasing only in extremely old rats. Numerical density of LHA neurons decreased already at the age of 27 months and remained unchanged in extremely old animals, i.e. the loss of neurons in this area took place earlier than in VMN. Numerical density of VMN gliocytes decreased only in extremely old rats (mainly satellite glia) and to the same extent as numerical density of neurons. The number of free gliocytes and satellite glia in LHA remained stable in all age groups. The glial index in VMN didn't change considerably in aging. This fact can be an evidence of age stability of neuron-glia relations in VMN in normal conditions in contrast to LHA, where this index increased with age. The activity of alkaline phosphatase in capillary wall was found to decrease with age. This decrease was considerably more pronounced in LHA. Age-related increase in the content of glial protein S100B was more pronounced and occurred earlier in LHA than in VMN. The total number of neurons in conditions of emotional-painful stress remained stable but the qualitative redistribution of neurons by different types occurred. Distribution of neurons by type in adult stressed animals corresponded to distribution of neurons in old intact rats. The number of glial cells decreased in both VMN and LHA. However in LHA this decrease was explicit only in old rats, whereas in VMN it was equal in adult and old animals. *Conclusions:* Age-related changes developed earlier and appeared to be more distinct in LHA compared to VMN. This can be a reason for prevalence of negative emotions, some types of arterial hypertension and other functional disorders, observed during aging. Thus, morphological manifestations of stress and aging were found to be similar.

112. AGE-RELATED ULTRASTRUCTURAL AND ULTRACYTOCHEMICAL CHANGES OF CARDIAC ATRIAL AND LEFT VENTRICLE REACTIONS TO VASOPRESSIN

T.Yu. Kvitnitskaya-Ryzhova, A.S. Stupina, G.V. Khablak
(Laboratory of morphology and cytology, Institute of Gerontology of AMS of Ukraine, Kiev-04114, Vishgorodskaya st., 67; fc@geront.kiev.ua, hgalka2@yandex.ru)

Heart secretory function is realized by atrial cardiomyocytes (CMC) synthesis and release in blood of natriuretic peptides, which take part in regulation of water-salt metabolism and arterial pressure, being in opposing interaction with renin — angiotensin — aldosterone- and vasopressinergic systems. *Purpose:* to establish the differences in ultrastructural and ultracytochemical age-related changes of atrial and left ventricle CMC and capillaries, as well as the difference in their reaction to functional loading. *Material and methods:* Ultrastructural and ultracytochemical analysis of right atrial (RA) and left ventricle (LV) myocardium was carried in Wistar rats — 6 and 24 months. Arginine — vasopressin (AVP) was introduced intravenously in a dose of 0.285 mg/kg. *Results:* It has been shown that RA CMC to a lesser degree undergo age-dependent destructive changes in comparison with LV CMC. Age-dependent changes of capillaries also appeared more expressed in LV. Thus in RA capillaries there was a lesser decrease of ultracytochemical activity of alkaline phosphatase, glucose-6-phosphatase, Ca^{2+} ATPase, 5'-nucleotidases versus LV capillaries, suggesting a relative maintenance of transcapillary exchange in the atrial histo-hematic barrier in aging. Under an increased functional load (AVP injection) young rats displayed an enhanced secretory activity. AVP caused appearance of single secretory granules even in cytoplasm of LV CMC, as well as more expressed, than in RA, destructive changes. Introduction of vasopressin to young rats resulted in edema of endotheliocytes cytoplasm and increase of the number of transport vesicles in both RA, and LV capillaries. In response to AVP in RA CMC of old rats there was a sharp increase of destructive changes (disorganization of organelles, heterochromatinization of nuclei, edema of cytoplasm, vacuolization of mitochondria, and fragmentation of myofibrils). Thus, differences of the reactivity of RA and LV CMC with aging leveled due to accumulation of destructive changes in the both departments of heart. Under APV effects, in the old experimental animals it was possible to observe the swelling of endotheliocyte cytoplasm, a marked swelling of pericapillary space, as well as considerable decrease of ultracytochemical activity of study enzymes.

113. AGE CHANGES OF INTERFERON STATUS IN MONKEYS AS ONE OF FACTORS OF NATURAL RESISTANCE

B.A. Lapin, V.Z. Agrba, D.D. Karal-ogly, L.A. Yakovleva, I.G. Ignatova (Research Institute of Medical Primatology of RAMS, Sochi-Adler, Russia; iprim@mail.sochi.ru)

Monkey is considered to be the best animal to study human pathology (Lapin B.A. et al., 2004). Many physiological systems of the organism have been studied on different species of monkeys but data on interferon (INF) status as indicator of one of natural resistance lack. The aim of this investigation was comparative study of age INF status differences and cell link of the immunity (B- and T-lymphocytes) in healthy *M. mulatta* at the age of 6–26 years. Definition of INF status included study of INF- α and INF-

γ after stimulation of whole blood lymphocytes by the virus of Newcastle disease and Con A respectively. Spontaneous INF was determined in whole blood without any additional influence and circulating INF was determined directly in the blood serum (Ershov F.I. 1996). Quantitative INF production was measured by the method of titration of the preparations on monolayer kidney culture of swine embryo against 100 cytopathic doses of indicating murine encephalomyocarditis virus. Value reciprocal to maximum dilution of the preparation producing 50% reduction of specific cytopathic effect of encephalomyocarditis virus was accepted as INF titer. Quantity of B- and T-lymphocytes was determined by the method of rosetteformation with erythrocytes covered with MoAT (Novikov D.K. et al., 2000). MoAT to lymphocyte clusters of differentiation CD3, CD4, CD8, CD16, CD22, CD25 were used in this investigation. Results of comparative study of INF status in monkeys proved development of important functional disorders in lymphoid system in connection with age. This was manifested in depression of lymphocyte function in response to adequate induction: INF- α titers in old monkeys were 3.4 times lower and INF- γ were 2.6 times lower than in young monkeys. Quantitative amount of B- and T-lymphocytes and their subpopulations did not change markedly in old monkeys in comparison with young ones. Obtained data are analogous to those described in human aging.

114. CHROMOSOMES HETEROCHROMATINIZATION IS A KEY FACTOR OF AGING

T. Lezhava (Tbilisi State University, Georgia; lezhavat@yahoo.com)

Purpose: The object of present investigation is to study functional characteristics of chromosomes (total heterochromatin; nucleolus organizer heterochromatin regions; structural heterochromatin; facultative heterochromatin (condensed euchromatin) and, in particular, telomeric and centromeric heterochromatin regions under the influence of bioregulators and heavy metals in cultured lymphocytes from old individuals. *Methods:* The level of MUTATIONS (chromosome aberrations), MODIFICATION of CHROMOSOME STRUCTURE (level of condensed chromatin identified by the method of Differential Scanning Microcalorimetry; level of C-banded constitutive heterochromatin; Ag-positive NORs and associations of acrocentric chromosomes) and REPARATION (unscheduled DNA syntheses and frequency of sister chromatid exchanges -SCE) under the single and combined effect of heavy metal salts ($NiCl_2$ and $CoCl_2$) and bioregulators (Epitalon and Livagen) have been studied in lymphocyte cultures from individuals at the age of 80 and over. *Results:* Chromosomes progressive heterochromatinization — condensation of chromosome eu- and heterochromatin regions occurs in aging, that determines inactivation of the genes having been active before; Decrease in repair rate and increase in the frequency of chromosome disorders — characteristic features of aging, are secondary to the phenomenon of heterochromatinization. Chromosomes heterochromatinization may be the reason for some senile pathologies; Peptide bioregulators induce deheterochromatinization of chromosomes in old age; Have demonstrated that heavy metal salts alone and in combination with the

bioregulators have different chromosomal target regions proceeding from the intensity of SCE induction, deheterochromatinization of precentromeric and telomeric heterochromatin in lymphocytes of old individuals *Conclusions:* Chromosomes heterochromatinization is a key factor of aging. Chromosomes heterochromatinization is the area where one should seek solutions for the prolongation of the span of life.

115. «OPENING» OF TELOMERIC AND PERICENTROMERIC HETEROCHROMATIN IN CULTURED LYMPHOCYTES FROM OLD INDIVIDUALS

T. Lezhava, T. Jokhadze, J. Monaselidze (*Tbilisi State University, Georgia; lezhavat@yahoo.com*)

To reveal functional characteristics of chromosomes at late stages of ontogenesis (level of total heterochromatin, chromosome instability and sister chromatid exchanges (SCEs) were studied in cultured lymphocytes derived from 80–90 yr-old and 20–30 yr-old (control group) individuals under the single and combined effect of heavy metal ions salts (NiCl_2 and CoCl_2) and bioregulators. The peptide bioregulators Epitalon and Livagen were used to determine their ability to correct chromosome alterations. Our results indicated that metal salts (NiCl_2 and CoCl_2) induced statistically higher level of chromosomal aberrations in old donors compared with the control group. The peptide bioregulators were effective in decreasing the changes induced by metal ions. The effect on the SCE level in lymphocytes from old individuals was seen just in telomeric heterochromatin when the Ni^{2+} were used separately, as well as in combination with Epitalon ($5.9 \pm 1.0\%$ sce and $5.0 \pm 1.0\%$ sce respectively) (control $2.8 \pm 0.5\%$ sce). Co^{2+} ions alone and Co^{2+} ions in combination with Livagen changed the distribution of SCEs in chromosomes: pericentromeric heterochromatin was more sensitive to the effect of CoCl_2 ($15.4 \pm 1.8\%$ sce); while SCEs were mostly registered in telomeric heterochromatin upon combined effect of CoCl_2 and Livagen ($12.0 \pm 1.2\%$ sce) (control individuals $4.5 \pm 0.6\%$ sce and $2.8 \pm 0.5\%$ sce respectively). Thus, it was demonstrated for the first time that Ni^{2+} and Co^{2+} ions alone and in combination with the bioregulators have different chromosomal target regions proceeding from the intensity of SCE induction, deheterochromatinization of precentromeric and telomeric heterochromatin in lymphocytes of old individuals.

116. INFORMATION MODELING IN GERONTOLOGY ON RUSSIAN FAR EAST

V.D. Lindenbraten, N.E. Kosykh, N.E. Posvaluyk, S.Z. Savin (*Computer Center of FEB of RAS; admvc@as.khb.ru*)

We are developing a general approach to the creating of mathematical models of ecologies-economic systems for gerontology researches. The model of ecologies-economic system for gerontology is built as an association of models. Social-industry activity age subpopulation within the framework of given ecosystem is formulated as a problem of building and making a game, corresponded to formed game-theoretical descriptive models. As bases of such study are to enter structured game-theoretical models, their main notions, components and structure for deciding medico-ecological problems. We study processes of so-

cial significant diseases and social-information neuroses spread in age subpopulation on Russian Far East. We use the principles of virtual information modeling of medico-ecological objects and geoinformation systems. We develop methodological approaches to make an information system for the account ageing and age-invalids on the base of modern information networks and databases for epidemiological studying an influence of social, physician-genetic and natural factors on the risk of invalid in the age subpopulation. We study levels, structure and dynamics of the age invalidity and accompanying her different nozological forms in «small» points of the Khabarovsk Krai in 1985–2005 years. Within the framework of the medico-geographical study to conduct a system analysis of influence of contents of complex of microelements in ground and underground water, radon-radiology risk of territory, parameters of climatic mode on the risk of age diseases, define regularities of territorial spreading age-invalids in different climatical-geological-chemical areas of Khabarovsk Krai. We also study particularities of territorial-temporary spread of some forms of malignant tumors in age subpopulation of aborigenos in Russian Far East depending on local ethno-ecological and social-economical conditions. As a result we created computer GIS-card of Far East territory on the base of geoinformation technologies and databases on different aspects of life lengths, social help and protection ageing and age-invalids.

117. THE EFFECT OF REGULATORY PEPTIDES ON AGING INTENSITY IN RATS WITH DIFFERENT ANXIETY LEVEL

A.V. Lysenko¹, E.V. Morgul¹, R.G. Sheykhova², T.A. Finochenko³, L.S. Kozina⁴ (¹*Southern Federal University, Rostov-on-Don*; ²*Dagestan State University*; ³*Rostov-on-Don State University of Railway Communications*; ⁴*St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; neuronal@pochta.ru*)

The aim of the present study was to investigate effects of some regulatory peptides on aging intensity in rats with different genetically determined anxiety level. Relying on measurement of free radical oxidation, the phagocytic activity of leukocytes, the activity of antioxidant defensive system enzymes and chromosomal aberration level, it has been shown that speeded up aging is predominantly typical of rats with high genetically determined anxiety level. A comparison of various stress models has demonstrated that hypokinesia surpasses exercise stress and hypoxia in its negative aging effect. Prophylactic administration of dipeptide GVS-111 possessing an anxiolytic effect under the conditions of 24-hour hypokinesia hampered stress reaction development and behavioral circadian rhythm disturbance, which was accompanied by antimutagenic and immunostimulating effects, probably, due to the ability of the preparation to maintain optimal balance between free radical oxidation intensity and the activity of antioxidative defensive system enzymes. On the contrary, administration of neoketorphine prior to hypokinesia did not only failed to prevent stress reaction development in animals with different anxiety level, but that also exacerbated its manifestations, which was, probably, due to the quite significant anxiogenic effect of the peptide. The data obtained enable to conclude that the effectiveness of use of peptide preparations as protectors from stress depends on their anxiolytic or anxiogenic properties.

118. REPARATIVE PROPERTIES OF SMALL PEPTIDES IN CASE OF AGEING AND AGE-RELATED PATHOLOGY

V.V. Malinin (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; vvm@gerontology.ru)

Ageing and age-related pathology are accompanied by a decline of immune reactivity and antioxidant protection, disordered regeneration processes, chromatin consistence, accumulation of chromosome aberrations, gene expression and structure disturbances. This emphasizes the actuality of the design and study of geroprotectors for stimulating reparative processes. The development of effective stimulators of reparative process is of ever growing importance due to the range of adverse environmental impacts on human organism and the development of premature age-related pathology. Adaptive transformations under the impact of age-related-pathology factors accompany the age-related changes in neurohumoral regulation and reduced synthesis of tissue-specific proteins. This ultimately undermines the reserve capacities of the organism, causes the accumulation of catabolism products, disturbs cell functions and entails disease development. Clinical and experimental studies of small peptides showed that these substances normalize the multilevel hierarchy of disordered reparation processes in different organism structures. Peptides directly take part in tissue-specific regulation of genes expression and biosynthesis. Peptide regulation reduces the rate of pathological changes accumulation (DNA damages, mutation, malignant transformation etc.) and increases the activity of reparative processes in the restoration of cellular homeostasis. It was found, that small peptides such as Thymogen (Glu-Trp), Vilon (Lys-Glu), Epitalon (Ala-Glu-Asp-Gly), Cortagen (Ala-Glu-Asp-Pro), Livagen (Lys-Glu-Asp-Ala) and Prostamax (Lys-Glu-Asp-Pro) restore DNA structure and reduce the occurrence of chromosomal aberrations in case of irradiation, chemical impacts and hypokinesia. Peptides introduction into the culture of lymphocytes taken from older people caused a decondensation of tightly packed chromatin fibrils, which correlates with restored expression of genes repressed due to euchromatin zones concentration in case of ageing. Small peptides stimulate tissue regeneration, restore cell metabolism in lymphocytes, macrophages and fibroblasts, normalize vessel permeability, activate neoangiogenesis, reduce inflammatory reactions and accelerate wound healing. The results prompt a conclusion that small peptides are a new group of cell transmitters, playing the key role in the regulation of histogenesis, immunity, inflammation and regeneration. The mechanisms of reparative effect of small peptides point out good prospects of their application in case of premature ageing and age-related pathology accompanied by disordered regeneration processes.

119. GREEN TEA EXTRACT MITIGATES STRESS-INDUCED HIPPOCAMPAL NEURONAL OXIDATIVE STRESS AND DEGENERATION IN OLD RATS

F. Marotta¹, D.H. Chui², A. Lorenzetti¹, T. Liu², P. Marandola¹ (¹GAIA Foundation, Milano, Italy; ²Neuroscience Research Institute, Peking University, Beijing, China; fmarchimede@libero.it)

Ageing and stress are both indicated as common ground for neurodegenerative disorders. Given the suggested potential neuroprotective effect of several nutraceuticals, our aim was to assess the possible beneficial effect of a concentrated green tea extract in stressed aged rats. Male Wistar rats, aged 16 months, were divided into 2 groups:

A) subjected to immobilization stress (kept in ventilated tightly fit boxes for 4 hours a day up to 30 days); B) as A but fed for 30 days with 250 mg/Kg/bw of an high-concentration, purified and caffeine-free green tea extract (Super Green Tea[→], LEF, USA), as single dose daily just after the stress regimen. Control group rats also considered. Rectal temperature was measured before/after the stress together with other stressful reactions. On the 31st day rats were sacrificed. The brain tissue was quickly removed for assessing: protein carbonyl content (PC), glutathione peroxidase (GPx), reduced glutathione (GSH) and malonyldehyde (MDA). Sagittal 10µm-thick sections of the hippocampal subregion were used for neuronal cell counting directly by micrometer and Abercambie's formula recalculation. Serum concentration of superoxide dismutase (SOD), catalase (CAT) activity, MDA and glucocorticoid was also determined. Unlike B, group A animals displayed a significant neuronal degeneration in CA₁-Dg hippocampal regions and in all the six layers. Cell count was significantly lower through CA₁-CA₃ and in Dg (p<0.01) but this was significantly improved or normalized in B group (p<0.05). Stressed rats had significantly increased brain level of MDA and PC and depletion of GPx and GSH (p<0.005) but this was partially mitigated in B animals (p<0.05). Serum assay showed a parallel decrease of SOD, CAT and enhanced corticosterone and MDA (p<0.01) while such changes were almost totally prevented in B animals (p<0.05). These data suggest that a formulated nutraceutical with high-concentration catechins represents an amenable intervention in stress-induced neuronal degeneration also in old animals.

120. REDOX STATUS IMPAIRMENT IN LIVER AND KIDNEY OF PREMATURELY-SENESCENT MICE: EFFECTIVENESS OF DTS PHYTOTHERAPEUTIC COMPOUND

F. Marotta¹, M. Harada², S.K. Ono-Nita³, E. Minelli¹, P. Marandola⁴ (¹WHO-Cntr for Biotech. & Trad. Medicine, University of Milano, Italy; ²MCH Hospital, Tokyo, Japan; ³Hepato-Gastroenterology Dept., Sao Paulo University, Sao Paulo, Brazil; ⁴G.A.I.A. Age-Management Foundation, Pavia, Italy; fmarchimede@libero.it)

Introduction. Aging process is associated with a drop of protein-bound thiols and its related antioxidant capacity with oxidative modification of DNA, proteins, lipids and small cellular molecules by ROS. In particular, thiols compounds (cysteine 80%, glutathione 17% and homocysteine 2-3%) hold a relevant role as key factors in regulating the intracellular and extracellular redox buffer capacity. The aim of this study was to test the novel phyto compound DTS (panax pseudoginseng, eucommia ulmoides, ginseng radix, kindly donated by the Institute of Health Care Oriental Medicine, Tokyo, Japan) which in preliminary in-house experiments had shown to be endowed by significant antioxidative/anti-inflammatory effects in a model of T-maze test-selected prematurely senescent mice (PSM). *Methods.* Animals were allocated into two groups: A) given DTS (150mg/kg) orally 30 days and B) untreated PSM with age-matched fast T-maze-performers as control. After sacrifice, the liver and kidney were analysed for catalase activity (CAT), glutathione peroxidase, superoxide dismutase (SOD), malondialdehyde (MDA) and plasma thiols. *Results.* Untreated PSM showed decreased plasma thiols and tissue level of CAT, SOD, GPx with higher MDA (decrease of 30-33%, p<0.01 vs fast performers) while DTS significantly improved glutathione and cyste-

ine ($p < 0.05$) and tissue concentration of the above redox parameters either in liver and in the kidney ($p < 0.05$). The subcellular analysis revealed that while cytosol SOD was unaltered in PSM, the mitochondrial compartment was significantly ($p < 0.01$) depleted in both tested tissues. Both parameters were partially improved by DTS. *Conclusion.* While senescence-accelerated mice represents a valuable source of investigations in aging research, the present model in normal strain animals may provide useful insights into «physiological» aging process. While more detailed studies on the mechanisms of action of DTS are in progress, given also its inner components variety, DTS seems a promising nutraceutical in old age with a likely action on the cytoplasm and mitochondrial matrix.

121. STUDY OF EPIGALLOCATECHIN-3-GALLATE'S EFFECT IN MITOCHONDRIAL INTEGRITY AND ANTIOXIDATIVE ENZYME EFFICIENCY IN THE AGING PROCESS

Q. Meng, R. Ruan (*National University of Singapore, Singapore; g0304838@nus.edu.sg*)

According to the free radical theory of aging, the accumulation of oxidative damages as a result of reactive oxygen species (ROS) attack is probably a direct reason of cell senescence. Epigallocatechin-3-gallate (EGCG), which is the main component of the green tea extract, is well known for its radical and oxidant scavenging activity. Over the years, however, most of the studies have been focused on EGCG's cancer chemopreventive properties, whilst its anti-aging effect has seldom been touched. In this study we firstly test EGCG's anti-aging effect on the human diploid fibroblast (HDF) and found that in the acute treatment, EGCG dramatically increased the antioxidative enzyme (catalase, superoxide dismutase (SOD), Cu/Zn-SOD, Mn-SOD and glutathione peroxidase) gene expressions as well as the enzyme activities. And in the hydrogen peroxide (H_2O_2) induced premature senescence, EGCG effectively protected HDF against oxidative damage. The intracellular ROS accumulation was significantly depressed and mitochondrial inner membrane potential was well maintained. HDF chronically treated with EGCG showed less intracellular ROS with higher mitochondrial inner membrane potential, more intact mitochondrial DNA and much elevated antioxidative enzyme efficiency except for a decrease in the glutathione peroxidase activity. The treated HDF also inclined to show a prolonged life span compared to the control group. Meanwhile, we also firstly correlated mitochondrial malfunction with the decreased antioxidative enzyme efficiency in the spontaneous senescence *in vitro*. Taken together, in this study we have systematically investigated the mitochondria integrity and antioxidative enzyme efficiency with/without EGCG treatment, and suggested EGCG as a powerful anti-aging agent.

122. COMPENSATE-ADAPTIVE ARRANGEMENTS OF LIPID METABOLISM INDUCED CALORIC RESTRICTION FOR YOUNG AND OLD RATS

N.G. Menzyanova (*Research Institute of Biology, V.N. Karazin Kharkov National University, Kharkov, Ukraine; menage@inbox.ru*)

Diet nutrients as epigenetic factors inducing compensate-adaptive arrangements of lipid metabolism of animal and human are under active investigation now. It had been shown that lipid metabolism arrangements can result in functional epigenotypes with resistances to various pathologies, or can provoke of development of pathological epigenotypes. In view of all the known facts diet engineering

(specifically, caloric restriction) is perspective direction in creating of strategies of successful ageing, forming on the late ontogenetic stages functional epigenotypes devoid of age-dependent pathology. In approaching this problem it is important to keep in mind that biological effects of same type of diet characterizes temporal variability: compensate-adaptive arrangements of lipid metabolism, induced the same diet factors can be found age-specific features on different ontogenetic stages. In this connection reactions of lipid metabolism of young and old rats effected by caloric restriction diet (CRD), standard diet (SD) and partial hepatectomy (PH, 24h after PH) were studied. It have been found that after PH serum lipid concentration for 6-monthly rats on CRD was 1,8 time as great as for 6-monthly rats on standard diet (SD). PH-induced lipid mobilization from fat depots and lipid transport into regenerating liver were blocked on CRD: lipid droplet pool had a sharp reduction (in 68-fold) in comparison with SD. Reduction of lipid droplet pool in regenerating liver was accompanied by quantitative and qualitative changes of lipid droplets composition. Cholesterol ethers were accumulated in lipid membrane pool of liver microsomes on CRD, but on SD cholesterol ethers in microsomal membranes were absent. Ratio cholesterol/phospholipids (integral microviscosity parameter) in liver microsomal membranes on CRD were considerably highly compared with SD. Specific PH-induced lipid metabolism arrangements for 6-monthly rats on CRD were accompanied by decrease of nuclear RNA and cytosolic RNA radioactivity (1,6 and 1,9-fold, accordingly, compared with SD) in regenerating liver. Serum lipid concentration and radioactivity of serum lipids, quantitative and qualitative composition of microsomal lipids for 22-monthly rats on SD and CRD after PH had the same levels. Lipid droplet pool in regenerating liver for animal on CRD was lesser (1,5 time) compared with animal on SD. Radioactivity of lipid fractions in cell compartments of regenerating liver (cytosol, lipid droplets, microsomal membranes) for animal on CRD were increased in comparison with animal on SD. It may be connected with induction of lipid synthesis *de novo* in regenerating liver for 22-monthly rats on CRD. DNA synthesis activity in regenerating liver for animal on CRD and SD were the same. These date point to CRD-induced compensate-adaptive arrangements of lipid metabolism are determined by age of animal. As a result the considerable variation exists in the PH-dependent arrangements of regenerating liver for young and old animals on CRD. It appears reasonable to assume that diet-determined functional epigenotypes on different stages of ontogenesis are characterized by variable resistance (adaptive potential) to an additional influence of environmental factors. These do imply that investigations of age-dependent biological effects of diets are needed.

123. MATHEMATICAL MODELING OF DIETARY AND CALORIC RESTRICTION INFLUENCE ON MEXFLY LONGEVITY

A.I. Michalski¹, J.R. Carey², V.N. Novoseltsev¹, A.I. Yashin³ (¹*Institute of Control Sciences of RAS, Moscow;* ²*Department of Entomology, University of California, Davis, USA;* ³*Center for Demographic Studies, Duke University, Durham, USA; mpoctok@narod.ru*)

Many contradictory observations describe the influence of dietary restriction on longevity in different species. The main attention is devoted to the role of caloric contents and food composition (Holliday, 2006). The most significant results are obtained in flies (Carey et al., 1998;

Magwere et al., 2004; Cooper et al., 2004). Investigations show that the increase in life expectancy in *Drosophila* is determined by reduction of either dietary yeast or sugar but not only by a reduction of the caloric content (Mair et al., 2005). Life span of *Drosophila* was extended much more by reduction of yeast concentration than by the equivalent reduction in sugar. The report investigates the longevity in Mexfly under various regimes of calorie limitation and different proportions of sugar and yeast in food. 4 diets were investigated experimentally: full sugar diet, sugar yeast mix in proportions 24:1, 9:1 and 3:1. The mix was diluted with water to make the standard caloric content of the food 133.2 (ckal/g). After this the fixed diet food was diluted with the water in proportions 100%, 75%, 50%, 25%, 10% and 0% to prepare the food with different caloric intake. Under each of 24 regimes the individual life span and daily reproduction was registered. The analysis of longevity under different diets with fixed caloric content confirms the statistically significant effect of the mean life span increase in both sexes when yeast are added. The amount of eggs produced during the lifetime under fixed caloric content increases with the increase of the amount of yeast and takes global maximum at 50% dilution of the food with water. The role of reproduction in longevity was modeled under the hypothesis of energy reallocation between reproduction and life support systems. This is supposed to be a mechanism for physiological adaptation (Novoseltsev et al., 2002; Romanyukha et al., 2004). In the model the hypothesis is reflected by reallocation of energy, proportional to the amount of sugar in food, and of energy, proportional to the amount of yeast. In addition the model accounts for the energy spent for reparation of damages, which were produced by the energy used for the life support. The results of modeling show good agreement with experimental data which confirms the right direction of the modeling. The account for protein, received with yeast, used for reparation of damages explains the life extension in the presence of yeast.

124. EXPERIMENTAL RESEARCH ON AGING IN RUSSIA: PERSPECTIVES OF INTERNATIONAL COOPERATION

O.N. Mikhailova (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; ibg@gerontology.ru)

Present-day situation in Russian biogerontology reflects growing economic and social changes in the country. High quality study results of Russian researchers are regularly published in international journals. In 1994, just after the collapse of the USSR, a deep crisis hit the Russian science, and there appeared only about 20 papers on biology of aging written by Russian authors. In 1997, the annual number of publications increased 3.5-fold, in 2001 — 5.5-fold, and 11.1-fold in 2005. The books and papers published by Russian researchers in international journals constitute a rapidly growing proportion of all publications in the field. Main issues of research on biology of aging in the country are: premature aging prevention, the role of free radicals and endocrine system (in particular, the pineal gland) in the mechanisms of aging, carcinogenesis and aging, population genetics of aging. Several groups of researchers are fruitfully working on theoretical aspects of biology of aging. Gerontology *in silico* (mathematical and

computer modeling of aging and age-related pathologies) is one of the most advanced topics in Russian gerontology. Special attention is paid to the results and prospects of mathematical modeling in experimental gerontology including modeling of aging and longevity in laboratory animals (nematode worms, fruit flies, mice, rats) and humans.

125. THE ROLE OF MELATONIN AND PEPTIDE PREPARATIONS FROM THE PINEAL GLAND IN PREVENTING DISTURBANCES OF THE HYPOTHALAMIC REGULATION OF REPRODUCTION IN FEMALE RATS

Yu.P. Milyutina, A.V. Korenevsky, M.G. Stepanov, A.V. Arutjunyan (D.O. Ott Research Institute of Obstetrics and Gynecology of RAMS, St. Petersburg, Russia; milyutina1010@yandex.ru)

The earliest sign of disturbances of estrus cycles in female rats, which occur in the aging process or as a result of the effect of xenobiotics, is an elimination of diurnal rhythms of the activity of monoaminergic and opioid systems in the hypothalamic areas responsible for the synthesis and secretion of gonadoliberin (the medial preoptic area, MPA, and the median eminence with the arcuate nuclei, ME-Arc). According to the data obtained by us, a neurotoxic xenobiotic 1,2-dimethylhydrazine (DMH) caused the elimination of diurnal changes of norepinephrine (NE) in MPA at the expense of a disturbance of a normal decrease in this neurotransmitter level in the evening. Highly relevant and of current importance is the task to seek compounds that are able to prevent disturbance of the transmitting of the information about diurnal periodism from the suprachiasmatic nuclei (SCN) of the hypothalamus to the neurotransmitter systems of MPA and ME-Arc that participate in the regulation of reproduction. In order to this, we have attempted to use the pineal gland hormone melatonin, receptors to which were found in SCN, as well as in MPA and ME-Arc. Melatonin is known to participate in synchronization of diurnal rhythms of the organism. Besides, it plays a role of no lesser importance in regulation of reproduction. Along with that, it seemed to be expedient to use compounds that are able to trigger the synthesis and/or to synchronize the secretion of the pineal gland hormone melatonin and in this way, possibly, to affect central mechanisms of regulation of reproduction that are disturbed because of the old age or under the influence of xenobiotics. The investigation of the protective effect of melatonin, epithalamine and epitalon on circadian rhythms entrained by SCN and disturbed under the influence of the neurotoxic compound DMG has revealed a progonadotropic effect of the former (administered intraperitoneally in the evening in the dose of 1 mg per kg weight for 5 days). Also, reestablishment of the diurnal dynamics of biogenic amines has been discovered, NE level falling from 9:30 till 11 hours of the circadian time, which was typical of animals in control. The similar effect has been shown by the polipeptide preparation from the pineal gland epithalamine, which proved to be more effective when compared to the synthetic tetrapeptide epitalon. The data obtained testify to the possibility for melatonin and peptide preparations from the pineal gland to be used for correction of disturbances of reproduction caused by xenobiotics and aging.

126. A GENERAL MODEL OF AGE-RELATED DEFICIT ACCUMULATION

A.B. Mitnitski¹, K. Rockwood² (¹*Department of Medicine, Department of Mathematics and Statistics, Dalhousie University, Halifax, NS, Canada;* ²*Department of Medicine, Geriatric Medicine Research Unit, Dalhousie University, Halifax, NS, Canada; Arnold.Mitnitski@Dal.Ca*)

Background & Objectives: Aging is manifested in multiple physiological declines, caused by environmental challenges and by decreasing stress-resistance capacities of the organism. Our objective is to suggest a model of the organism / environment interactions that give rise to the accumulation of deficits with age. **Methods:** We analyzed 7 population-based and clinical/institutional surveys in 4 developed countries of people (over 36,000) aged 65+ years. A state variable (the 'frailty index') is defined as the average number of accumulated deficits (symptoms, signs, laboratory abnormalities, and disabilities) expressed in a given individual. This state variable evolves over time according to a stochastic Markov process, which accounts for the random flux of the environmental insults, and in the ability of organisms to sustain or repair environmental damages. Different differential equations for the state variable are derived and analyzed both analytically and numerically. **Results & Discussion:** The observational data show an exponential increase in the deficits accumulated in individuals over long periods (decades) with a rate of about 3 ± 1 % per annum. The statistical distribution of the number of deficits is markedly asymmetrical, being skewed to the left, and the coefficient of variation in deficit accumulation decreases with age. The probability of death exponentially increases with the number of deficits at any age. A Markov model shows that under a broad range of conditions, the number of health deficits that accumulate can be represented as a ratio of two essential characteristics of the model — the average intensity of the environmental challenges to the average intensity of recovery. The model operates with two time scales — 'fast' (an order of weeks to months) defined by the average recovery time, and 'slow' (an order of years and decades) defined by the slow changes in stress resistance capacity of the organism. The model's parameters are estimated from the databases and fit well with the observational data for the frailty index, and for two related state variables: social vulnerability and cognitive impairment. **Conclusions:** A general stochastic mechanism of organism — environment interactions coupled with a decrease of stress-resistance might explain the observed patterns of how deficits accumulate with age. This allows an understanding the origin of health deficit accumulation, can be used to classify different populations, and suggests that the pursuit of state variables is a pragmatic means of dealing with the complex nature of older people who have multiple, interacting medical and social problems.

127. HEALTH TRANSITIONS, AGING AND MORTALITY: A MULTI-STATE STOCHASTIC MODEL

A.B. Mitnitski¹, X. Song², K. Rockwood³ (¹*Department of Medicine, Department of Mathematics and Statistics, Dalhousie University, Halifax, NS, Canada;* ²*Institute for Biodiagnosics, Geriatric Medicine Research Unit, Dalhousie University, Halifax, NS, Canada;* ³*Department of Medicine, Geriatric Medicine Research Unit, Dalhousie University, Halifax, NS, Canada; Arnold.Mitnitski@Dal.Ca*)

Background & Objectives: Generally, physiological functions decline with age, and mortality risks increase

exponentially. On the other hand, many people improve their health, by making changes in their lifestyles, and/or through good health care. We investigated a stochastic model of health transitions in a large Canadian population cohort and discuss the implications of the model for understanding biological aging. **Methods:** The National Population Health Survey is a longitudinal study conducted in four waves, in 1994, 1996, 1998, and 2000. From >17,000 participants, 4330 people (2548 women) aged 55+ at baseline were followed. Those who survived were assessed using the using a standard health questionnaires at each waves. Thirty-three dichotomized variables (coded as deficits), including medical conditions, disabilities and health history were used to calculate the deficit accumulation count (frailty index) in each individual. **Results & Discussion:** Deficits accumulated linearly over 2 years, and accelerated over 6 years. Empirical transition probabilities between different states of health (defined by the number of deficits) were calculated. Multistage transitions between health states were represented by a modified Poisson distribution, with four interpretable parameters, which fitted the observed data with very high accuracy ($R=0.96$). These four parameters are: the ambient chance of accumulating additional deficits, the chance of incurring more or fewer deficits, given the existing number, and the corresponding probabilities of dying. Apart from the age-related increase in background mortality and deficit accumulation (the 0-state risks) most parameter estimates showed little variation with age. Like declines, improvements in health were also related to the starting number of deficits and to the duration of follow-up, e.g. there was more improvement over 2 years than over 6 years. Older people had more problems, but age itself had no effect on the pattern of deficit accumulation. In short, deficits accumulated over each interval in relation to the number of deficits present at the beginning of the interval, with little difference across the age range. **Conclusions:** From late middle age, near-term changes in health occur with a regularity that is readily summarized by a simple stochastic model that has a few interpretable parameters. Two consequences are most important: health changes are predictable with high accuracy, and; even small mean changes in health from late middle age could have important clinical and public health consequences.

128. FUNCTIONAL CHANGES OF MOUSE SPERMATOZOA IN VITRO

S. Mohammadzadeh (*Animal dep., Khorram abad, Iran, Lorestan university; gondol@mail.ru*)

In suspensions epididymal spermatozoa *in vitro* at +10°C and +37°C all nuclei- and mitochondria-containing structures (normal spermatozoa, spermatozoa with the bent and coiled tails, complexes of head and neck) are labeled by Propidium Iodide and Rhodamine123, respectively. Intracellular ATP concentration determined by a bioluminescent method in mitochondria containing elements of suspension. ATP concentration was decreased at 37°C and at 10°C, but decreasing rate at 37°C was faster than at 10°C, then received in unchangeable level containing $2.5 \cdot 10^{-8}$ M/l at 37°C and $1.6 \cdot 10^{-8}$ M/l at 10°C for each of 10^6 mitochondria-containing elements. Mechanisms of spermatozoa destruction and aging process were discussed.

129. AGE DEPENDENT CORRELATION BETWEEN CEREBRAL BLOOD CIRCULATION, CEREBRO-SPINAL FLUID DYNAMICS AND CRANIAL COMPLIANCE

Yu.E. Moskalenko¹, P. Halvorson², T.I. Kravchenko³, G.B. Weinstein¹, N.A. Ryabchikova⁴, A. Feilding⁵, A.A. Panov¹ (¹Sechenov Institute of Evolutionary Physiology and Biochemistry of RAS, St. Petersburg, Russia; ²ITAG Foundation, Philadelphia, USA; ³Russian School of Osteopathic Medicine, St. Petersburg, Russia; ⁴M.V. Lomonosov Moscow State University, Moscow, Russia; ⁵Beckley Foundation, Oxford, U.K.; ymos@iephb.ru)

Brain metabolic supply is determined by interaction between cerebral blood flow (CBF), movements of cerebrospinal fluid (CSF) inside the skull and between the cranial and spinal spaces, and the level of cranial compliance (CC). These physiological parameters change over the life span. *Objective:* The study examines the peculiarities between CBF, CSF dynamics and CC for different age groups of healthy persons using a method that is both modern and original. *Method:* The recordings of linear blood velocity in middle cerebral artery (MCA) by transcranial dopplerography (TCD) while simultaneous recordings of blood/CSF volume changes in the brain region supplied by MCA by rheoencephalography (REG; electrodes were applied at fronto-mastoidal position) were performed. The data collected were PC-processed (using A-D PowerLab-4 running Chart 3.52 and Canvas 6.0 with statistical software) and analyzed by pattern and phase comparison of their pulse wave forms which are indicative to CBF, CSF mobility and CC. Every age group (15–25; 26–35; 36–45; 46–55; 56–65 and 66–75) was represented by 12–15 persons. Mental status was examined by psycho-physiological tests. *Results:* CBF decreases gradually from the youngest group to the oldest by as much as 40–45% while CSF movements inside the cranium and between the cranial and spinal spaces increased in the older group. CC was slightly decreased for the oldest group as compared to the youngest, but CC was found to have its minimal value in the group aged 46–55, which corresponds to some decline in values of their psycho-physiological testing. *Conclusion:* A decrease in CBF level during aging is compensated for by an increase in CSF mobility and by CC once age 56–65 is attained. For the group aged 46–55 the CSF mobility has not yet increased while CBF has already decreased and CC is at the minimal level of all the age groups. The cerebrovascular reserve for age group 46–55 is comparatively low and deserves further attention.

130. LIFE SPAN OF DROSOPHILA MUTANTS WITH DEFECTS OF DNA DAMAGE SENSING AND REPAIR AFTER LOW DOZE GAMMA-IRRADIATION

A.A. Moskalev, E.N. Plusnina (Institute of biology of Komi Science Center of RAS, Syktyvkar, Russia; amoskalev@list.ru)

Life span is an integrated parameter of individual fitness. It is very interesting to understand the mechanisms of low dose gamma-irradiation influence on life span. It is possible that the main factor of life span after irradiation is DNA repair capacity. We compared the life span of irradiated wild type and DNA repair defective *Drosophila melanogaster* strains. It was shown that life span of wild type strain *Canton-S* increased after low dose gamma-irradiation. It was revealed the decrease of life span after

irradiation in *Drosophila* mutants with defects of DNA damage sensation and repair genes *mei-41* (*ATM* homolog) and *mei-9* (*XPF* homolog), both in homozygous and heterozygous lines. In *mei-41* line males' lives longer than females in contrast to other lines. Homozygous females *y¹mei-9^a l(1)ESHS26^l mei-41^{D5}/FM7c* (simultaneously bearing *mei-9* and *mei-41* mutation in *cis*-position) have unusual high life span (at 1.5 times higher than *Canton-S* females).

131. GENETICS ASPECTS OF DIFFERENT LIGHT REGIME INFLUENCE ON DROSOPHILA LIFE SPAN

A.A. Moskalev, O.A. Shostal (Institute of biology of Komi Science Center of RAS, Syktyvkar, Russia; amoskalev@list.ru)

Undoubtedly that life span can be affected by external factors, such as temperature or light regime. But the exact mechanism of different light regime influence on longevity is unknown. In this work it was analyzed the difference of *Drosophila* life span in strains with low activity of Sod or excision repair enzyme Mus210 (homolog of yeast RAD4 and mammal XPC) in comparison with wild type strain *Canton-S* in conditions of 24 h and 0 h light. Mutants having low capacity to detoxify free radicals and DNA repair are characterized by stronger difference between life span at 24 h and 0 h light in comparison with wild type strain. Thus the life span increasing in the dark is due to decline of free radical and DNA lesions production. In wild type strain the effect of 12 h dusky light had not more effect on life span than intensive 24 h light. In most cases the difference between life span at 0 h and 24 h light was too much in males than in females, especially in Sod strain.

132. POLYMORPHISM OF SOME GENES IN ETHNIC TATARS: FROM YOUNG TO LONG-LIVERS

O.E. Mustafina, V.V. Pauk, I.A. Tuktarova, T.R. Nasibullin, L.P. Zueva (Institute of biochemistry and genetics, Ufa scientific centre of RAS, Bashkortostan, Ufa, Russia; anmareg@mail.ru)

The aim of our study was to evaluate gene polymorphisms of apolipoprotein E (*APOE*, *Cys112Arg*, *Arg158Cys*), angiotensin-converting enzyme (*ACE*, *ID*), paraoxonase 1 (*PON1*, *Q192R*), paraoxonase 2 (*PON2*, *C311S*) and catalase (*CAT*, *-262C/T*) in different age groups in Tatars from Bashkortostan (Russia). We examined 1627 healthy persons: young (n=180, 1–20 years), maturity (n=446, 21–55 years), elderly (n=361, 56–74 years), senile (n=486, 75–89 years) and long-livers (n=154, 90–109 years). Genotyping was performed using PCR and PCR-RFLP. Fisher's two-tailed exact test (Statistica v. 6.0) was used for age groups comparison. *APOE**3/*3 genotype and *APOE**3 allele frequencies were raised in age from elderly to long-livers (P<0.05) and *APOE**4 allele frequency was reduced among long-livers in comparison with young (P=0.034), elderly (P=0.011) and senile (P=0.003). *APOE**3/*4 genotype frequency was reduced upon aging, beginning from elderly (P<0.05). Among long-livers the number of *ACE**D/*D genotype carriers was reduced in comparison with elderly (P=0.036) and senile (P=0.007). *ACE**I/*D genotype carriers were more frequent among long-livers than in senile (P=0.026). *PON1**Q/*Q genotype frequency was lower in group of long-livers than

among maturity ($P=0.039$), elderly ($P=0.035$) and senile ($P=0.021$) groups. *PON1**R/*R genotype frequency was raised among long-livers than in senile ($P=0.014$). *PON1**R allele frequency was higher among long-livers in comparison with other age groups, excluding young: $P=0.018$ for maturity, $P=0.015$ for elderly and $P=0.004$ for senile. *PON2**C/*C genotype frequency was lower among senile in comparison with young ($P=0.006$) and elderly ($P=0.011$). As for -262C/T polymorphism *CAT* gene, we have not revealed statistically significant differences between elderly, senile and long-livers. Thus, our data have shown the diversities of genotypes and alleles frequencies of *APOE*, *ACE*, *PON1* and *PON2* genes polymorphisms between different age groups.

133. AGING IS AN ADULT GROWTH HORMONE (GH) DEFICIENCY SYNDROME: MAY THIS STATEMENT BE THE BASIS OF A GENERAL CONSENSUS OF GERONTOLOGISTS?

I.Zs. Nagy (University of Debrecen, Debrecen, Hungary; izsnagy@dote.hu)

The unusually strong confrontation of views between the American Medical Association (JAMA Commentary, October 26, 2005) and The American Academy of Anti-Aging Medicine (A4M) (Official A4M Response, November 14, 2005) called our attention once again to the problem of the lack of consensus of gerontologists, regarding the basic nature of the aging process. The style used in those two documents was really rough and unusual. On the one hand, according to the JAMA Commentary, this method of anti-aging interventions is illegal, criminal, and requires persecution. On the other hand, A4M is of the opinion that the JAMA Commentary is «...filled with incorrect, misplaced references and studies, and multiple basic scientific errors, in apparent attempt to damage the anti-aging medical profession...». Evidently, in a short lecture is impossible to treat all the relevant aspects of this complicated story. Nevertheless, this author will attempt to point out the main issues of theoretical feasibility of the human GH replacement therapy. There is no doubt that this replacement shows extensive beneficial effects. The comprehensive explanation of the aging process called «membrane hypothesis of aging» (MHA) offers a well-established, solid basis for the interpretation of the observed beneficial effects of the hGH. Namely, this species-specific pituitary peptide hormone has receptors in the plasma membrane of practically all types of cells. The activation of those receptors stimulates the membrane transport functions, rehydrates the intracellular colloids, speeds up protein synthesis and turnover, and activates a great number of cellular functions, all observed so far. Independently from the above conflict of views, all these anti-aging phenomena require an independent, open-minded approach to the problem, and forces us to better understand the results of aging research. This may help to clarify also the wide variety of contradictions of the theoretical gerontology, which had resolved very few issues so far. On the other hand, both the human society and the health authorities expect from the basic research that gerontologists can finally identify at least the basic biological characteristics of aging. The achievement of such a consensus seems to be feasible and useful for the future of both the aging population and the actually existing field of aging research.

134. EFFECT OF SYNTHETIC REGULATORY PEPTIDES ON EXPRESSION OF NEPRILYSIN IN HUMAN NEUROBLASTOMA NB7 CELLS

N.N. Nalivaeva¹, E.G. Kochkina¹, N. Makova², N.D. Belyaev², A.J. Turner², L.S. Kozina³, V.A. Arutyonov³, A.V. Arutjunyan³ (¹Institute of Evolutionary Physiology and Biochemistry of RAS, St. Petersburg, Russia; ²Institute of Molecular and Cellular Biology, University of Leeds, Leeds, United Kingdom; ³St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; milakozina@mail.ru)

Neprilysin (endopeptidase 24.11, NEP) is a metallo-peptidase with a wide range of biological functions. In the nervous system it mostly acts as an enkephalinase and main enzyme of substance P metabolism. Recently NEP was found to be capable of degrading amyloid- β peptide (A β). Pathological accumulation of A β in the brain is considered as a hallmark of Alzheimer's disease (AD) and might be a result of decreased activity of NEP and other amyloid-degrading enzymes in the ageing brain. In this connection up-regulation of NEP is regarded as a therapeutic target in AD. In this study using method of rt-PCR we analysed the effect of synthetic peptides vilon (Lys-Glu, V) and epithalon (Ala-Glu-Asp-Gly, E) on expression of NEP in human neuroblastoma NB7. Both these peptides were previously shown as capable to up-regulate expression of various genes (Anisimov et al, 2002). Our data have demonstrated that incubation of NB7 cells with V or E (24 hours, 50 nM) had no significant effect on the levels of NEP mRNA expression in NB7 cells under control conditions. However, both peptides were able to restore the levels of NEP mRNA decreased after chronic hypoxia (1% O₂, 24 hours) and E had a more pronounced effect than V. A similar effect on NEP mRNA expression under hypoxia has been observed when NB7 cells were incubated with a potent antioxidant epigallocatechin-3-gallate. These data suggest that V and E might act as antioxidants protecting expression of various proteins from damaging effects of hypoxia which often accompanies the process of ageing.

135. THE EXPERIMENTALLY-THEORETICAL ANALYSIS OF ANTI-OXIDANT SYSTEM STATUS AT AGING OF ORGANISM

Yu.V. Nikitchenko, V.N. Dzyuba, V.V. Bondar, A.A. Sheremet (Research Institute of Biology, V.N. Karazin Kharkov National University, Kharkov, Ukraine; yunikitchenko@univer.kharkov.ua)

Spent in a wide age range at natural aging and in conditions of modulation of life-span research of antioxidant system (AOS) status of organism have allowed to establish new principles and defining factors of age reorganizations of system of regulation of biomolecules free radical oxidation. It is shown, that the essence of reorganization of AOS during postnatal ontogenesis is defined by the features of changes of non-enzymatic and enzymatic AOS activity and activity of the enzymes providing AOS by GSH and NADPH. Depending on the age it was found out three basic statuses of AOS: 1) high activity of non-enzymatic AOS and low activity of enzymatic AOS in young non-pubescent and pubescent animals; 2) low activity of non-enzymatic AOS and high activity of enzymatic AOS in adult and old animals; 3) low activity of non-enzymatic AOS and essentially lowered activity of enzymatic AOS in animals of senile age. Unlike the first, second and third statuses of AOS are characterized by decrease in provision

of antioxidant enzymes by GSH and NADPH. The established features of change of AOS status at late stages of ontogenesis allow to explain the mechanisms of decrease in stability of a growing old organism to action of adverse factors of an environment and mechanisms of occurrence and development of age diseases. It is confirmed by our earlier data about more expressed increase in intensity of lipid peroxidation in old rats after ischemia, sharp cooling, full starvation, injection of tetracycline, paracetamol, phenobarbital, actinomycin D, thyroxine and CCl_4 . It is shown, that at prolongation of animal life-span by application of calorie restricted diet activity of AOS was increased, and at acceleration of aging (the unbalanced diet or long-term use of thyroxine) it was decreased. Most strongly these changes have been expressed for GSH-dependent AOS. The analysis of the received data allows to assume, that one of effective approaches to essential increase of lifespan can be the use of the geriatric means leading to increase of activity of own enzymatic AOS and, especially, of activity of GSH-dependent antioxidant enzymes.

136. CHROMOMERES, EPIPHYSIS, AGING

A.M. Olovnikov (*Institute of Biochemical Physics of RAS, Moscow, Russia; olovnikov@dol.ru*)

Aging of a human organism is determined by the shortening of special DNA molecules — chromomeres, the hypothetical perichromosomal organelles, which are located in postmitotic cells of hypothalamus. The process of chromomere shortening is under the control of the signals from epiphysis that plays the role of a pacemaker ordering in time the acts of truncation of the chromomere termini. Chromomeres are the central part of the Lifelong clock of vertebrate's brain. Though shortening of telomeres does correlate with the aging of dividing cells, telomere attrition is not its cause, however. The Hayflick limit and a cell aging *in vitro* are determined by the end underreplication of another type of perichromosomal DNA molecules, namely printomeres, normally playing the key role in cell differentiation and morphogenesis.

137. COMPARATIVE ANALYSIS OF PEPTIDE EFFECTS ON LIFE SPAN AND LIPID PEROXIDATION IN DROSOPHILA MELANOGASTER

T.I. Oparina¹, **S.V. Mylnikov**² (¹*D.O. Ott Research Institute of Obstetrics and Gynecology of RAMS, St. Petersburg;* ²*St. Petersburg State University, St. Petersburg, Russia; oparinat@mail.ru*)

The object was HA^{\square} *Drosophila melanogaster* line pre-selected for low male mating activity. It has been characterized by high level of spontaneous mutation rate, high concentration of deleterious mutations and lowered fitness. Parents of the flies investigated were subjected to different peptide diet at the second larva age. Peptides were developed by the Institute of Bioregulation and Gerontology. Substance doses were 0.015 mg/100 ml nutrient medium for peptides and 15 mg/100 ml for epithalamin. Calculated traits were median of annuity curve and its slope, which allows to refer substances to one of the three types of geroprotectors. In adults flies homogenates we detected and calculated initial and terminal products of lipid peroxidation: conjugated hydroperoxides (CHP) and Schiff Bases (ShB). **Results:** The probed preparation differed in influence on annuity curve: enlarging (+), not changing (0) or reducing

(–) curve median or its slope (table 1). The probed preparation differed in influence on lipid peroxidation level not changing (0) or reducing (–) it (table 2).

Table 1. Modification of annuity curve parameters in different samples variants

Variant	Females		Males	
	median	slope	median	slope
Cortagen	+	–	0	–
Vilon	+	–	+	0
Epitalon	+	–	+	0
Livagen	+	–	+	+
Prostamax	+	–	+	–
Epithalamin	+	–	+	0

Table 2. Effect of peptides on lipid peroxidation products in different samples variants

Variant	Females		Males	
	CHP	ShB	CHP	ShB
Cortagen	–	0	0	0
Vilon	–	–	–	0
Epitalon	–	–	0	0
Livagen	–	0	0	0
Prostamax	–	0	0	0
Epithalamin	–	–	0	0

Conclusions: Geroprotecting effects of the studied preparation in females seemed to be stipulated by antioxidant mechanism. Geroprotecting effects in males did not correlate with free radical level in tissues.

138. TELOMERE CAP UNBLOCKING ALLOWS EFFICIENT TELOMERE ELONGATION

N. Osipov (*Institute of Gerontology of Ukraine AMS, Kiev; nosip@rambler.ru*)

Telomeres are nowadays considered to be the most possible «lifespan clock». Telomeres are the ends of chromosomes and are non-coding DNA end-capped with proteins. Telomeres become shorter after each cell division, which is one of the mechanisms of gradual ageing and cancer. Delay of telomere shortening may inhibit senescence. Telomerase is the reverse transcriptase responsible for the extension of telomere length. Another factor involved in the regulation of telomere length is a telomere cap, which covers the telomere end from telomerase action and is implicated in telomerase regulation. The goal of this work is to open telomere cap and make telomere end free for telomerase. To achieve that, an experiment with human lymphocytes was performed. No telomere elongation was observed when white blood cells were cultivated in a mere presence of telomerase activator phytohemagglutinin, because there is a cap on the telomere end which preventing telomerase from reach the telomere end and to elongate it. An in-house developed method was used for the telomere cap removal, which resulted in the increase of telomere length, compared to the telomere length of the control group. Our opinion is that unblocking of telomere

caps allows efficient telomere elongation. This approach will be of interest for future anti-ageing therapies.

139. ETIOLOGY OF SYNCOPE DIAGNOSED IN GERIATRIC EXTERNAL CONSULTING

R. Padilla, A. Cruz, B. Cobos, T. Fernandez-Dorado, C. Yera, M.A. Carbonell, R. Daimiel, F.J. Tarazona, M.A. De la Torre (Hospital Virgen del Valle, Toledo, Spain; tarazona71@tiscali.es)

Background: Syncope is a frequent cause of attention in External Consulting of Geriatric Hospitals. Only a small percentage, however, obtains a specific diagnosis of syncope. We analyzed the characteristics and etiology of syncope episodes in patients studied in consultation of a geriatric hospital. **Material and methods:** 186 case histories were taken from patients who went to external consultations during 2005 and 2006 for some of the following reasons: fall, syncope, TIA, sickness and dizziness. We made a clinical study with ecocardiography, cranean tomography, carotid doppler and electroencephalography. **Results:** 49 patients (26,34%) out of 186 were diagnosed of syncope. The average age was of 83,28±4,87. 35,48% were men and 64,52% were women. 71,51% did not present cognitive impairment. 55, 38% were diagnosed of high blood pressure, 19,35% of diabetes, 38,17%, some kind of cardiopathy; 28,49%, some kind of neuropathy and a 27,41% suffered a known psychiatric pathology. They took 4.97±2,64 medicaments of average. 66,12% presented normal blood pressure in the consulting room and 79,03% had a normal electrocardiographic registry. anaemia 9,13%; ionic alterations, 31,18%. 62,36% presented some structural alteration in ecocardiography and 91,39% presented a normal Doppler study of supraaortic trunks. 37,09% of the EEG showed some pathological alteration. 63,44% of cranean TAC showed pathological alteration. The diagnoses achieved in external consulting were: vasovagal etiology syncope in 45,16% of studied patients, ictus in 25,26% of the cases and 15,05% were related with other diagnosis. **Conclusions:** In our sample, the most frequent cause was the vasovagal etiology, followed by the stroke. These results emphasize the high age of the patients, more than 50% of whom presented some dependence and an elevated drug consumption. It is necessary to emphasize the importance of a correct evaluation of the episodes to avoid their repetition.

140. REMODELLING OF BIOCHEMICAL-CLINICAL PARAMETERS DURING HUMAN AGING: A FACTOR ANALYSIS IN A LARGE ITALIAN POPULATION

M.P. Panourgia¹, L. Spazzafumo², F. Olivieri³, M. Cardelli³, F. Marchegiani³, R. Testa⁴, M. Scurti¹, D. Mari⁵, A. Gaddi⁶, G. De Benedictis⁷, G. Zuccala⁸, C. Franceschi¹ (¹ICIG, Interdepartmental Center L. Galvani, University of Bologna, Italy; ²Statistical Centre, I.N.R.C.A., Ancona, Italy; ³Center of molecular biology and genetic, Research Department, I.N.R.C.A., Ancona, Italy; ⁴Diabetology Unit, I.N.R.C.A., Ancona, Italy; ⁵Department of Internal Medicine, University of Milan, Maggiore Hospital IRCCS, Italy; ⁶Clinical Medicine and Applied Biotechnology Department D. Campanacci, University of Bologna, Italy; ⁷Department of Cell Biology, University of Calabria, Italy; ⁸Geriatric Medicine Department, Catholic University of the Sacred Heart, Rome, Italy; maria.panourgia@unibo.it)

Human aging can be considered as the product of an interaction between genetic, environmental, and lifestyle

factors. Recently, factor analysis has been applied to investigate risk factors clustering in some age-related human diseases. **Aim:** To investigate the clustering patterns and age-related changes of several clinical-biochemical parameters, in a sample of Italian adult subjects of different ages. **Materials and Methods:** In 1377 healthy subjects (age range 40–108 years, including 130 centenarians), selected by a large middle Italian Regions population, we considered the following biochemical and haematological parameters, related to some important pathways involved in the aging processes (lipidic, glucidic and inflammatory-immunological): total cholesterol (TC), triglycerides (TG) glucose (GLU), C reactive protein (CRP), fibrinogen (FIBR), white blood cell count (WBCC) and haemoglobin (Hb). To perform statistical analysis subjects were divided into three age groups: young (40–60 years, n=334), old (61–85 years, n=719) and oldest-old (>86 years n=324). **Results:** Factor analysis showed that the seven chosen parameters are combining differently in the three age groups, creating diverse factors: (I) Young group: **factor 1:** Hb, GLU, TG; **factor 2:** PCR, WBCC and FIBR; **factor 3:** TC. TG is also associated with factor 3, WBCC with factor 1 and FIBR with factor 3. (II) Old group: **factor 1:** FIBR, PCR and WBCC; **factor 2:** TG and TC; **factor 3:** Hb and GLU. WBCC is also associated with factor 2 and Hb with factor 3. (III) Oldest-old group: **factor 1:** TC, TG and Hb; **factor 2:** WBCC, PCR, GLU and FIBR. GLU is also associated with factor 1. Factors obtained by factor analysis explain the 58% of variance in younger and old group and just the 48% of variance in the group of oldest-old subjects, suggesting an increase of variability in this group. **Conclusions:** Factor analysis applied to our data revealed consistent clusters of variables that were different in subjects of different age: we observed a decrease of complexity in the group of oldest-old subjects respect to younger and old groups and a concomitant increase of variability. Additionally, it is suggested by these results, that the inflammatory profile represents an essential factor in the oldest-old group, while it's power in the other two age groups is less important. These data could be considered as the result of the combined effects of selective and remodeling forces that act together to achieve longevity.

141. BIOMARKERS OF IMMUNE AGEING: THE IMMUNE RISK PROFILE, IRP

G. Pawelec (University of Tuebingen, Germany; graham.pawelec@uni-tuebingen.de)

Ageing of the immune system (immunosenescence) contributes to the increased susceptibility of the elderly to infectious disease, and to the poor outcome of vaccination. Defence against pathogens is compromised by many changes, eg. in barrier function and innate immunity, but mainly because of changes in adaptive immunity mediated by T lymphocytes. We are now beginning to appreciate the potential clinical impact of T cell immunosenescence to health and longevity. Longitudinal studies of the elderly reveal a cluster of immunological parameters, collectively the «immune risk profile» (IRP) which predicts 2, 4 and 6 year mortality on follow-up. The IRP as originally defined included factors such as the CD4:8 ratio, T cell proliferative responses and the number of B cells. Importantly, the IRP seems independent of genetic background or state of health at baseline, although it is anticipated that its poten-

tial extension to younger individuals may reveal an influence of the former. More recent studies suggest that immunosenescence may be greatly exacerbated or accelerated by the requirement for constant immunosurveillance against persistent viruses, especially cytomegalovirus (CMV). Longitudinal studies reveal that the number of different T cell clones specific for CMV in elderly people increases with age, as does the absolute number of terminally-differentiated CMV-specific CD8 cells in the blood. These are characterized by resistance to apoptosis, expression of a unique pattern of cell surface proteins and functional dysregulation in response to specific antigen. In the terminal phase of life, however, the clonal diversity of these CD8 T cells decreases again, although the overall number remains elevated. Thus, oligoclonal expansions followed by clonal attrition within the T cell repertoire, together with increased accumulation of CMV-specific dysfunctional cells, is associated with incipient mortality in old people. Such anergic T cells already begin to accumulate in middle age, and this continues throughout life. These cells may exert direct immunosuppressive effects, and may also be indirectly immunosuppressive by filling the «immunological space». Due to peripheral T cell homeostasis, this might prevent any residual potential thymic output of naïve T cells, thereby contributing to further shrinkage of the T cell repertoire for new antigens. Recent awareness of an overriding effect of CMV on age-associated changes in T cell immunity in humans, and the association of these markers with survival, offers a range of potential remedial interventions, both prophylactic and therapeutic. Longitudinal studies *ex vivo* in the elderly, as well as the utilisation of long-term cultured T cell clones as *in vitro* models of behaviour under chronic antigenic load, are essential for defining immune biomarkers of immune ageing, and for testing interventions to achieve healthy longevity.

142. THE ROLE OF THE FAS AND TNF-ALPHA CYTOKINE SOLUBLE RECEPTORS IN THE PROCESS OF PHYSIOLOGICAL AGEING AND SYSTEMIC ATHEROSCLEROSIS AT OLDER PEOPLE

C.M. Pena, R.M. Pircalabu (*Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; penacata@yahoo.com*)

The study was aimed at bringing new informations concerning the molecular mechanisms responsible for the programmed cell death induced in the pathology of atherosclerotic lesions as part of the ageing process. In particular, the implications of the receptor/ligand Fas/FasL and sTNF-RI/TNF systems in affecting through apoptosis of the arterial wall cells were analysed. We have researched the role of the Fas hyperexpression in inducing the apoptosis, atheromatosis and the rupture of the atheromatosis plaque, as well as the existence of possible co-relations between the soluble receptors Fas and TNF-alpha. The study included 3 samples composed of 23 subjects, which underwent the necessary selective tests in accordance with the Senieur protocol. The sFAS and sTNF-RI plasma immuno-enzymatic determinations were done using the ELISA Sanofi Diagnostics Pasteur PR 1100 equipment and R&D Systems kits. The results obtained demonstrated the existence of a considerable breakaway/disjunction of the cytokine receptors at elder subjects, with an inhibitor effect on the cells' apoptosis. Taking into account the fact that these receptors are active in the instability mechanism of atheromatosis plaque, we sustain their role as markers of the senescence health status and in outlining the inflammatory processes

pertaining to the atherosclerotic pathogenesis. The results point towards obtaining synthetic soluble receptors in order to utilize them as therapeutic agents for controlling the apoptotic process in some degenerative diseases, with particular reference to the reduction of inflammation at the level of the atheromatosis plaque.

143. AGE CHANGES IN ANTIOXIDANT DEFENSE SYSTEM IN RATS AFTER SERIAL INJECTION OF FETAL CELLS

A.Yu. Petrenko¹, Yu.V. Nikitchenko², A.A. Sheremet², O.V. Ochenashko¹ (¹*Institute of Problems of Cryobiology and Cryomedicine, NAS Ukraine, Kharkov;* ²*Research Institute of Biology, V.N. Karazin Kharkov National University, Kharkov, Ukraine; payua@yahoo.com*)

A promising approach to prolong a lifetime is an increase of antioxidant defense system. The aim of this study was to investigate the pro-oxidant/antioxidant state in rat blood and liver after serial intravenous administration of human fetal liver or neural cells. Cryopreserved human fetal liver cells (FLC) or fetal neural cells (FNC) were injected into femoral vein of 13 months old rats on 16, 19, 22 and 25 months. Blood index were determined after each injection. Animals were sacrificed after last cell injection and thiobarbituric acid-reactive substances (TBARs) and antioxidant system activity were determined in liver homogenates. Serial FLC and FNC administration resulted in the decrease in TBARs level in liver homogenates on 36,3% and 34,4%, respectively, compare to control group receiving equal volume of medium. Whereas in control group TBARs level in blood serum monotonically increased up to 25 months, this value was not changed in rats treated with fetal cells. After FLC and FNC injection the level of protein free-radical oxidation products, carbonyl, in blood serum was on 24,1 и 38,7%, respectively, lower than in control group. Activities of superoxide dismutase and selenium-dependent glutathione peroxidase significantly decreased to 25-month age in rat blood serum of control group, but did not change after fetal cell injection. In liver of 25 month rats treated with FLC activities of selenium-dependent glutathione peroxidase in cytosol and mitochondria, selenium-independent glutathione peroxidase in cytosol, glutathione-S-transferase in mitochondria and glutathione reductase in mitochondria were higher then in control. Serial FNC administration allowed to keep more higher cytosolic activities of catalase, selenium-dependent glutathione peroxidase and glutathione reductase. Obtained data indicate that serial injection of fetal liver and neural cells by similar manner decreases accumulation of protein and lipid free-radical oxidation products in ageing organism due to enhancement of antioxidant system reliability. Following investigation of anti-ageing activity of fetal tissues, which are a rich source of multipotent stem/progenitor cells, is considered as a promising approach to prolong the lifetime.

144. ACCELERATION OF AGING AND SPONTANEOUS CARCINOGENESIS IN POLY(ADP-RIBOSE) POLYMERASE-1 (PARP-1) — DEFICIENT MICE

I.S. Piskunova¹, M.N. Yurova¹, A.I. Ovsjannikov¹, A.N. Semenchenko¹, M.A. Zabezhinski¹, I.G. Popovich¹, Z.-Q. Wang², V.N. Anisimov¹ (¹*N.N. Petrov Research Institute of Oncology;* ²*Leibniz Institute for Age Research — Fritz Lipman e.V., Jena, Germany; ostach@list.ru*)

PARP-1 and poly(ADP-ribose)ylation were proposed to play an important role in DNA repair, genomic stabil-

ity, cell death, inflammation, telomere maintenance, and suppressing tumorigenesis. To study the PARP-1 in aging process, we monitored biomarkers of aging and tissue homeostasis, as well as parameters of life span and spontaneous carcinogenesis in mice lacking PARP-1. There was a great reduction of life span and a significant increase of aging rate in PARP-1 knockout mice. All aging markers examined were found significantly elevated in PARP-1 knockout mice, including body weight, body temperature, estrous function, behavioral, biochemical parameters. In the knockout mice, earlier puberty and age-associated disturbances of estrus function (increase of the estrus cycle length and relative incidence of irregular cycles) were observed. Behavioral studies revealed that PARP-1^{-/-} mice were active at young age, but were physically weaker as comparison with wild type counterparts. PARP-1^{-/-} mice showed a great reductions in the total proteins, albumines, calcium and triglycerides content, and an increased glucose levels, suggesting a disturbed metabolic homeostasis in mice deficient in PARP-1. Although the incidence of spontaneous tumors in both PARP-1^{-/-} and PARP-1^{+/+} groups was similar, tumors developed earlier in PARP-1 knockout mice compared to the control group, which is associated with a higher lethality rate. Histological analysis revealed a wide spectrum of neoplasms in various organs, including uterus, ovaries, liver, lungs, mammary gland, soft tissues, as well as lymphoid organs. However, the frequency of malignant neoplasms (72 %), including uterus tumors, lung adenocarcinomas and hepatocellular carcinomas, of PARP-1^{-/-} mice was significantly higher than the control group (49%). These results testify that inactivation of DNA-repair gene PARP-1 leads to acceleration of aging, a reduction of life span, and promoting tumorigenesis, testifying the role of PARP-1 in aging.

145. NEUROIMMUNOENDOCRINE MOLECULAR AND CELLULAR COMMUNICATIONS IN HUMAN THYMUS

V.O. Polyakova¹, I.M. Kvetnoy², S.S. Kononov¹, P.N. Zezulin¹ (¹St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS; ²D.O. Ott Institute of Obstetrics and Gynecology of RAMS, St. Petersburg, Russia; vopol@yandex.ru)

The study of the expression of signaling molecules (hormones and transcriptional proteins) in human thymic cells *in vitro* has been performed to clarify possible correlations of their expression with proliferative activity of T-lymphocytes. Thymic epithelial cells and T-lymphocytes have been studied in 1 passage (young culture), 4 passage (mature culture) and 7 passage (old culture). It has been shown, that different subpopulations of T-lymphocytes are able to produce hormones: precursors of T-lymphocytes (CD4⁺CD8⁻) produce serotonin and melatonin, immature cortical cells (CD4⁺CD8⁺) only serotonin, mature medullar cells (CD4⁺CD8⁻) demonstrate the immunoreactivity to serotonin, melatonin, beta-endorphin and histamine. The expression of serotonin, somatostatin and gastrin is localized in thymic epithelial cells. During 7 passages of cell culture the expression of serotonin and somatostatin in thymic epithelial cells is increased. In co-cultures (thymic epithelial cells plus mature T-lymphocytes) at the same time the proliferative activity of T-lymphocytes is decreased in 4 and 7 passages of cell culture. The presence of correla-

tions between hormonal expression and cell proliferative activity could be considered as the bright illustration of the important role of close neuroimmunoendocrine mechanisms for paracrine regulation of local thymic homeostasis. The expression of transcriptional proteins — Pax1, Hoxa3 и TLP, which are responsible for T-lymphocytes differentiation — has been registered in thymic epithelial cells of all passages studied (1, 4 and 7). Their expression is most decreasing in cells of 7 passage. At the same time the total number of T-lymphocytes also decreased in 4 and 7 passages. Taking into account the important role of above transcriptional factors for regulation of differentiation and for maintenance of T-lymphocytes' population, this phenomenon could be considered as the key mechanism of immune disorders in aging. Supported by the grant of the President of Russian Federation MK-9343.2006.4.

146. TARGETING NEWLY DISCOVERED CASCADE IN NEURONAL INSULIN RECEPTOR ACTIVATION FOR TREATMENT OF AGE-RELATED COGNITIVE DEFICITS

I.A. Pomytkin¹, V.G. Pinelis², T.P. Storozhevykh², Y.E. Senilova², N.A. Persiyantseva², V.V. Sherstnev³, Z.I. Storozheva³, A.T. Proshin³, N.A. Semenova⁴ (¹Fine Technologies, Moscow; ²Scientific Centre for Children's Health, of RAMS, Moscow; ³P.K. Anokhin Institute of Normal Physiology, of RAMS, Moscow; ⁴Semenov Institute of Chemical Physics of RAS, Moscow, Russia; ipomytkin@mail.ru)

Accumulated evidence suggests that impairment in cerebral insulin receptor signaling may contribute to age-related cognitive deficits and Alzheimer's disease. We show for the first time that mitochondria are involved in the activation of neuronal insulin receptor, and therefore represent a target for the treatment of cognitive deficits associated with dysfunctional insulin receptor signaling. Malonate and FCCP, well-known mitochondrial inhibitors, abolish insulin-stimulated autophosphorylation (i.e. activation) of insulin receptor in a culture of cerebellar granule neurons (CGN), whereas succinate salts enhance the response to suboptimal insulin. The mechanism includes an increase in succinate-dependent H₂O₂ production upon insulin stimulation, and the subsequent oxidative inhibition of protein tyrosine phosphatases, which otherwise dephosphorylate (i.e. deactivate) the insulin receptor. To examine whether targeting newly discovered cascade in insulin receptor activation can ameliorate cognitive deficits, we studied the effects of dicholine salt of succinic acid (DCS) on three rodent models: (i) normal aging, (ii) amnesia caused by chronic cerebral hypoperfusion, and (iii) amnesia caused by a single injection of beta-amyloid peptide (25-35) into brain *nucleus basalis magnocellularis*. Behavioral tests (passive avoidance and Morris water maze tasks) indicate that DCS significantly ameliorates cognitive deficits in all animal models used. Proton magnetic resonance spectrometry (¹H MRS) *in vivo* studies reveal that DCS ameliorates age-related deficits of whole-brain N-acetylaspartate, a reliable marker of neuron functioning, supporting data of the behavioral tests. DCS effects lasted at least two weeks following the treatment. Our results suggest that targeting neuronal insulin receptor activation may represent a promising strategy for the treatment of age-related cognitive deficits and dementias.

147. THE ROLE OF MELATONIN IN AGING AND CANCER

I.G. Popovich¹, M.A. Zabezhinski¹, I.A. Alimova¹, D.A. Baturin¹, N.Yu. Zavarzina¹, S.V. Anisimov², N.A. Plotnikova³, G.M. Vesnushkin³, I.A. Vinogradova⁴, V.N. Anisimov¹ (¹N.N. Petrov Research Institute of Oncology, St. Petersburg, Russia; ²Lund University, Lund, Sweden; ³N.P. Ogarev State University, Saransk, Russia; ⁴Petrozavodsk State University, Russia; irina_popovich@inbox.ru)

The effect of pineal indole hormone melatonin on life span of mice and rats has been studied using various approaches. It has been observed that in female inbred CBA, outbred SHR, mutant SAMP-1 and transgenic HER-2/neu mice long-term night administration of melatonin was followed by the increase in the mean life span. In rats, melatonin treatment increased survival of male and female rats. In rodents, melatonin was potent antioxidant both *in vitro* and *in vivo*. Melatonin alone turned out neither toxic nor mutagenic in the Ames test and revealed clastogenic activity at the high concentration in the COMET assay. Melatonin has inhibited mutagenesis and clastogenic effect of a number of indirect chemical mutagens. Melatonin has inhibited a development of spontaneous and DMBA- or N-nitrosomethylurea-induced mammary carcinogenesis in rodents; colon carcinogenesis induced by 1,2-dimethylhydrazine in rats, DMBA-induced carcinogenesis of the uterine cervix and vagina in mice; benzo(a)pyrene-induced skin and soft tissues carcinogenesis, as well as lung carcinogenesis induced by urethan in mice. To identify molecular events regulated by melatonin, gene expression profiles were studied in the heart and brain of melatonin-treated CBA mice using cDNA gene expression arrays (15,247 and 16,897 cDNA clone sets, respectively). It was shown that genes controlling the cell cycle, cell/organism defense, protein expression and transport are the primary effectors for melatonin. Melatonin has also increased the expression of some mitochondrial genes (16S, COX1, COX3, ND1 and ND4), which agrees with its ability to inhibit free radical processes. Of a great interest is an effect of melatonin upon an expression of a large number of genes related to calcium exchange, such as cullins, Dcamk11, calmodulin, calbindin, Kcnn2 and Kcnn4; a significant effect of melatonin on expression of some oncogenesis-related genes was also detected. Thus, we believe that melatonin may serve as a drug for prevention of premature aging and carcinogenesis.

148. ANALYSIS OF IGF1 GENE POLYMORPHISM IN NEWBORN AND ELDERLY PEOPLE FROM NORTH-WEST REGION OF RUSSIA

S.V. Potulova, O.S. Glotov, V.S. Baranov (D.O. Ott Research Institute of Obstetrics and Gynecology of RAMS, St. Petersburg, Russia; sveta_po2000@mail.ru)

The serum insulin growth factor IGF-1 level differs in various human ages. The individual variations in the level of this enzyme depend on the number of CA repeats in the promoter region of *IGF-1* gene. In this study *IGF-1* (CA repeats) gene polymorphism was analyzed by PCR method in 102 newborns (Ott's Institute of Obstetrics & Gynecology RAMS) and also in 136 elderly people from North-West Region of Russia. Three different statistical approaches were used for more objective interpretation of results. The differences in distribution of the *IGF-1* (CA repeats) gene polymorphism were revealed. The most im-

portant finding concern substantial increase in the frequency of 20/- genotype in elderly people when compared to newborn group (26.7% and 44.1%, respectively, $\chi^2=8.57$, $p=0.0034$, $df=1$) with concomitant age-related decrease of 19/19 genotype frequency (51% and 27.9%, respectively, $\chi^2=14.815$, $p=0.0001$, $df=1$). The second finding could be addressed to the gender differences of IGF-1 polymorphism distribution. According our data 19/20 CA repeat genotype in male newborns was twice more frequent than in female ones (23.2% and 11.3%). The same ration remained constant in elderly people as well but the proportion of 19/20 IGF-1 genotype in this group increased almost twice (44.4% and 21.1%, respectively, $\chi^2=5.009$, $p=0.025$, $df=1$). No correlation between the number of CA repeats and the birth weight or height was found in the group of newborns as a whole. However definite association of 20 CA allele with lower body weight ($Z=2.2$, $p=0.028$) and reduced height in female newborns has been registered. Thus our results are in lines with these ones of other publications that increased number of CA repeats in the promoter region of IGF-1 gene (20 CA) being responsible for low production of IGF-1 enzyme is associated with longevity in man as well as with reduced body weight and the height in female newborns. Allele 19 responsible for the high level of serum IGF-1 might be associated with longevity for women. Our final finding was the association between 20 CA allele of *IGF-1* and senile disease — cataract ($Z=2.4$, $p=0.018$). There were no correlation with stroke, essential hypertension, coronary heart disease and Type 2 diabetes.

149. SEX-SPECIFIC TISSULAR LIPID ACCUMULATION AND ITS RELATION WITH AGE-ASSOCIATED INSULIN RESISTANCE

M.P. Ramos¹, J. Sevillano¹, M.J. Polanco², M. Limones¹, E. Herrera¹, M.C. Gonzalez² (¹Bioquímica y Biología Molecular, Fac. Farmacia, Universidad CEU San Pablo, Madrid, Spain; ²Farmacología y Toxicología, Fac. Farmacia, Universidad CEU San Pablo, Madrid, Spain; pramos@ceu.es)

Insulin resistance is one of the most important metabolic disorders affecting elderly people. The question whether sex-specific factors impinge on the development of age-related hyper-insulinemia is a matter of ongoing debate. One of the factors that may underlie the development of insulin resistance in elderly people is the accumulation of fat with age, in particular the increase of intra-abdominal adiposity. Here we report on sex-specific differences of age-related intra-abdominal lipid deposition in the rat and its relation to insulin resistance. To this end, brown intrascapular adipose tissue, white lumbar adipose tissue, pancreas, and liver from young (4 months) and old (19 months) male and female Sprague-Dawley rats were processed for histopathological analysis as well as for the quantification of lipid deposition, circulating levels of lipids (triglycerides and non-esterified fatty acids), glucose, insulin and various indexes of insulin resistance such as the HOMA index. Expectedly, as determined by histological and biochemical analysis, adiposity of both white and brown adipose tissue increased significantly with age. While no sex-specific differences were observed in brown adipose tissue, aged male rats accumulated significantly more white adipose tissue than females. Similarly, the pancreas of aged rats exhibited characteristic histopathological changes such as the presence of lipid droplets of different size in the aci-

nar parenchyma and cytoplasmic vacuolation in the islets of Langerhans. While we did not detect any sex-specific differences in the adiposity of young rats, we observed an increase of pancreatic lipid accumulation in old male rats as compared to females. These data support the notion that aging is associated with sex-specific redistributions of lipid deposits. Interestingly, fasting levels of triglycerides and non-esterified fatty acids were significantly higher in aged females as compared to males, suggesting a higher adipose tissue lipolytic activity in the first group. Although, no sex-specific differences were observed in fasting glucose levels, both fasting levels of insulin and HOMA-IR index were higher in old male rats as compared to females, indicating a higher deterioration of insulin sensitivity in aged males animals. These data, together with evidence emerging from ongoing studies, relate sex-specific accumulation of lipid deposits with the development of age-related insulin resistance.

150. ANTI-AGING AND LIFE-PROLONGING HORMETIC EFFECTS OF MILD STRESS

S. Rattan (Department of Molecular Biology, University of Aarhus, Denmark; rattan@mb.au.dk)

Hormesis in aging is characterized by the beneficial effects that result from cellular responses to mild stress. Hormetic response to the stressor not only defends the organism against that particular stress, but also overshoots, facilitates the removal of other molecular damages in cells and tissues, and improves the homeostatic or homeodynamic ability. Therefore, exposing cells and organisms to brief periods of stress can hormetically modulate and slow down ageing. Our studies have shown that repeated mild heat stress (RMHS) has anti-ageing effects on growth and various other cellular and biochemical characteristics of normal human skin fibroblasts undergoing ageing *in vitro*. RMHS at 41°C, for 1 hr twice a week, increased the basal levels of various chaperones, reduced the accumulation of oxidatively and glycoxidatively damaged proteins, stimulated proteasomal activities for the degradation of abnormal proteins, improved cellular resistance to ethanol, hydrogenperoxide and UV-B rays, enhanced the levels of various antioxidant enzymes, and increased the phosphorylation-mediated activities of various stress kinases. RMHS-exposed human fibroblasts are also better protected against glucose, fructose and glyoxal-induced growth inhibition and apoptosis. Our recent studies have shown that RMHS exposure of telomerase-immortalised human bone marrow mesenchymal stem cells improves their differentiation ability into specific cell types. We are now testing the effects of RMHS in combination with potential hormetic molecules, such as curcumin, on ageing and longevity of human cells in culture.

151. DOES THE CD4/CD8 COUNT PREDICT MORTALITY?

I.M. Rea¹, S.E. McNerlan¹, H.D. Alexander²,
T.C.M. Morris² (¹Queens University Belfast; ²Belfast City Hospital; i.rea@qub.ac.uk)

Immune function may be important in survival and previous studies have suggested that a low CD4/CD8 ratio is associated with reduced survival. The CD4/CD8 ratio is used as a measure of immune function and response and is clinically employed to monitor patients in HIV in whom ratio shows a rapid decline with disease activity. Low ra-

tios are also seen in patients with acute viral disease, organ versus host disease and haemophilia. In animals CD4/CD8 ratio falls with ageing but there are few studies in older human age groups. In this study we measured CD4/CD8 ratio in 227 community living, apparently well subjects, 92 >90 years, 25 80–90 year olds and 27 60–80 year olds with the rest of subjects being from a young healthy blood donor population. CD4 and CD8 lymphocytes were defined by flow cytometry methods. The mean CD4/CD8 ratio was 2.1 (SD1.3), median 1.9, with a slight trend for a fall with increasing age ($p=0.08$). Females has higher CD4/CD8 ratio compared to males including those in the nonagenarian age groups. CD4/CD8 ratio in males >90 years was 1.8 compared to 2.1 for female nonagenarians with values of 1.3 in octogenarian males and 2.1 in octogenarian females respectively. With data split into 2 groups (CD4/CD8 count <1.3 and >1.3), Kaplan Meier test was carried out but showed no significant difference was found between the survival rates of the 2 groups ($p=0.82$). In apparently well nonagenarian subjects the CD4/CD8 ratio is maintained within the acceptable range of 1.5–2.5 units found in younger age group. Nonagenarian and octogenarian males have a lower CD4/CD8 ratio compared to females of the same age. Using Kaplan Meier survival analysis there appeared to be no survival advantage for nonagenarians showing higher CD4/CD8 ratios.

152. INFLUENCE OF DIFFERENT IODINE CONCENTRATIONS ON THYROID GLAND FUNCTION IN ELDERLY PATIENTS

E.G. Revyakina, E.V. Bogatiryova, A.M. Gniroribov,
V.I. Sobolev (Institute of urgent and recovery surgery of Ukraine AMS, Donetsk; revelina@yandex.ru)

Iodine is one of the major microelements, being part of thyroid hormones, which regulate metabolism in an organism. Now inadequate iodine consumption is an actual problem. Insufficient iodine intake with food is as dangerous as excessive intake with drugs. Often on the background of iodine containing drugs use iodine induced thyrotoxicosis, hypothyroidism, autoimmune thyroiditis, thyroid cancer are developing. The reason is thyrocytes membrane proteins iodination and their antigen characteristic change, and also formation of iodine active forms with intensification of lipid peroxidation. Elderly people are very susceptible to inadequate iodine concentration in the organism. *Objective:* to study association between various levels of iodine consumption and thyroid gland function in elderly patients. *Methods:* thyrotropin and antibodies to thyroperoxidase concentration was determined by electrochemiluminescent method. Urine iodine concentration was determined by Sendell-Coltgoft method. *Results and discussion:* 180 patients who have not been consulted by endocrinologist were examined (34 men and 146 women). Patients ranged in age from 55 to 75 years (62 ± 6.0 years). Serum levels of thyrotropin and antibodies to thyroperoxidase and urine iodine excretion were detected simultaneously. Patients were divided into 3 groups on the basis of urine iodine excretion levels. 1st group was made up of 51 patients (5 men and 46 women) with excretion level 20–80 mcg/l, 2nd group — 95 patients (21 men and 74 women) with excretion level 100–250 mcg/l, 3^d group — 34 patients (8 men and 26 women) with excretion level 400–1500 mcg/l. Association between thyrotropin and antibodies to thyroid peroxidase concentration and iodine excretion levels was

evaluated. Data on thyroid function impairment in different groups are in fig. 1.

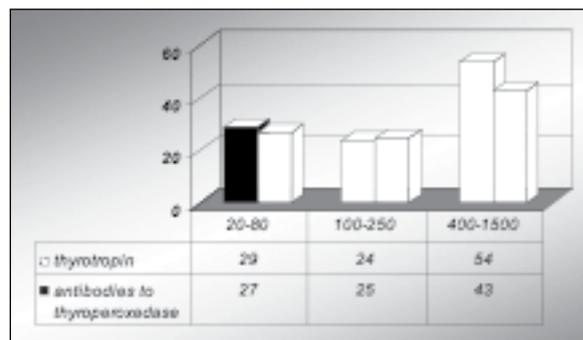


Figure 1. Correlation between iodine consumption and thyroid gland function.

Most frequently changed thyroid function was detected in patients with increased excretion level ($p=0.002$, see figure 1). Some increase in number of patients with thyroid gland disease ($p=0.78$) was registered in 1st group (patients with iodine deficiency). *Conclusion:* Risk of thyroid pathology more distinct in group of patients with high iodine excretion level than in low excretion level. This is the evidence of importance of proper patients selection for iodine drugs treatment and therapy control.

153. MODEL OF ENERGY METABOLISM AND MEDFLY LIFE HISTORY

A.A. Romanyukha (Institute of Numerical Mathematics of RAS; eburg@inm.ras.ru)

Necessary condition of life maintenance is energy supplying on regeneration and maintenance of a internal environment homeostasis. Sufficient energy supplying of these processes allows to support as much as long a life and to avoid ageing. Why this opportunity is not realized? At least two fundamental factors can play a role. The first: a power consumption on a reproduction that can reduce quality of regeneration, and the second: essentially limited opportunities of the energy machine. The role of these factors can be estimated, analyzing experimental data on link of intensity of reproduction and life expectancy. In work the simple mathematical model of regulation of the power machine of an insect — the Mediterranean fruit fly is offered. Process of reproduction is adjusted by yeast addition in food. The model represents system of three differential equations. They describe dynamics of three variables: M_1 — shares mitochondria, providing reproduction, M_2 — shares mitochondria providing regeneration, and H — quantity of essential substance (cholesterol) received with food, H^* — upper limit for H in an organism; P_1 — the power spent for processes of reproduction, P_2 — the power spent for processes of maintenance. Model equations:

$$\frac{dM_1}{dt} = k_{M_1} P_2 - \mu_{OX} P_1 M_1 - \mu_M M_1;$$

$$\frac{dM_2}{dt} = k_{M_2} P_2 - \mu_{OX} P_2 M_2 - \mu_M M_2;$$

$$\frac{dH}{dt} = (H^* - H)(I_H + I_H^*) - k_H P_1;$$

$P_1 = \rho(H) k_p M_p$, $\rho(H) = 1$ if $H \geq H_T$, H_T — lower limit for H , else $\rho(H) = 0$. $P_2 = k_p M_2$.

The model describes available experimental data. Changing values of model parameters it is possible to increase life expectancy essentially. It is possible both due to decrease in charges on reproduction, and due to improvement of mitochondria's characteristics. The results confirm perceptivity of influences on a energy metabolism as a way of increase in life expectancy.

154. CORRECTION OF AGE-RELATED ALTERATIONS IN RAT PANCREAS BY PINEAL PEPTIDE BIOREGULATORS

A.P. Ryzhak, I.N. Kostyuchek (St. Petersburg Institute of Bioregulation and Gerontology; ryzhak_anastasia@yahoo.com)

Life conditions of modern society, unfavorable ecological factors, unbalanced nutrition, sedentary life style cause the expansion of preterm aging for majority of people that provokes promotion of age changes in human organism, resulting in age pathology. Pancreas pathology occupies the considerable place in disease incidence structure for senior age group of people. The aim of this study was to reveal the role of peptide bioregulators in retardation age changes in pancreas. 70 male-rats Vistar line with body weight 130–140 g were included and were divided by randomisation method for 7 groups. 1st group (control) was represented by intact animals. Preterm aging was modeled by pinealectomia for animals of 2–7 groups. On 21st day after operation animals of 2nd and 3rd groups had been obtaining physiological during the next 10 days solucio in form of 0,5 ml subcutaneous injections, to animals of 4th and 5th groups pineal peptide — epitalon (H-Ala-Glu-Asp-Gly-OH) in dose 0,5 mkg had been injected the same way for 10 days, and to animals 6th and 7th groups epitalamin peptide complex, exposed from calf pineal in dose 0,5 mg for rat had been injected. Our results showed that 1,5 month after pinealectomia in animals influenced by epitalamin pancreas volume ratio of glucagon containing A-cells increased in comparison with control from $12,8 \pm 2,5\%$ to $13,9 \pm 1,8\%$, and somatostatin containing D-cells decreased authentically from $4,5 \pm 1,2\%$ to $3,2 \pm 0,9\%$. It was noticed a tendency for increasing the volume ratio glucagons containing A-cells for 20% in pancreas of animals who were taken epitalon 1,5 month after pinealectomia. Moreover the volume ratio of somatostatin containing D-cells increased up to 40% in comparison with control. Therefore pineal peptide bioregulators promote the correction of pancreas aging morphofunctional abnormalities in preterm aging model.

155. AN INCREASE IN LONGEVITY AND THE INCIDENCE OF PREGNANCY IN FEMALE WISTAR RATS ASSOCIATED WITH A CARROT RICH DIET

N.L. Safrazian, C.H. Castillo, J.M. Pino (Politechnic National Institute, Medicine School of Higher Learning, Mexico City, Mexico; nilesa10@yahoo.com.mx)

Introduction. Newborns of women of advanced age (approximately 48–55) have a greater probability of anomalies, which can be avoided only with constant multidisciplinary medical attention during the pregnancy, giving attention to diet, hormone therapy, etc.). *Materials and methods.* In the present study 50 female Wistar rats 60 days of age were employed. Four groups were formed: 1) one consisted of 10 rats with a carrot rich diet and constant exercise, 2) another included 15 rats with a carrot rich diet, but without exercise, 3) the third had 10 rats with a stan-

dard animal house diet and daily exercise, and 4) the last group received a standard animal house diet, but without exercise. At 17 months of life (the average life span for rats being 19 to 21 months), 3 rats from each group became pregnant from the same healthy male. The following blood parameters were tested throughout the experiment: complete hematological parameters, coagulation, liver function, glucose, cholesterol, triglycerides, antioxidative defense level of enzymes, catalase, superoxide dismutase, glutathion peroxidase and glutathion reductase. Other factors were considered, such as the general condition, weight, capacity for physical work (a 30 minute run), and reproductive capacity. *Results.* The 3 rats of the first group became pregnant and the fetus did not present any macroscopic internal or external defects. Two rats from the second group presented the same results, while the other aborted all the offspring. The rats from the third and fourth groups did not become pregnant, and were sacrificed in order to observe the uteruses and in this way confirm the absence of pregnancy. Before the pregnancy the rats from the first and second group showed normal blood parameters, with a 3.8 fold increase in the catalase activity and a 2.7 fold increase in superoxide dismutase, during more than one year. On the other hand, the rats from the third and fourth group presented a significant increase in the levels of glucose, cholesterol, triglycerides, transaminases, creatinase (Mb), and coagulation parameters. *Conclusions.* A carrot rich diet increases longevity and reproductive capacity in female Wistar rats of advanced age, probably due to the powerful antioxidant effect of this vegetable.

156. THE EFFECT OF LATE-LIFE CALORIC RESTRICTION ON THE OCCURRENCE OF SELECTED PATHOLOGIES AND METABOLISM OF AGING RATS

K. Sawinski (University of Medical Sciences, Poznan, Poland; podkowska@ump.edu.pl)

Previous studies have shown that life-long caloric restriction without malnutrition in rat prevents organisms from age-dependent injury. In this study, we analyzed whether late-life introduction of caloric restriction has a similar effect. The study lasted 24 months. Three groups of animals were analyzed: rats fed «ad libitum» (AD, n=9) for the study period, rats on 60% caloric restriction (CR, n=9) for the same period, rats that were fed «ad libitum» for the first 6 months of their life and switched on 60% caloric restriction thereafter (LCR, n=9). At the end of the study, frequency of the occurrence of paralysis, cataract and tumors was estimated. Blood samples were collected and serum lipids panel, albumin, total protein, hemoglobin concentration were assessed. Results are as follow:

	AD	CR	LCR
Body weight [g]	493±66	343±10	344±20
		p<0.01 vs. AD	p<0.0001 vs. AD
Paralysis	5	1	1
Cataract	3	0	0
Tumors	3	0	0
Total cholesterol	182.3±56.9	113.3±14.1	108.1±14.4
		P<0.008 vs. AD	p<0.003
HDL[%]	27.5±2.1	58.54±4.86	38.92±5.2
		p<0.0001 AD	p<0.0001 AD&CR

	AD	CR	LCR
LDL [g/L]	89.6±38.1	66.7±13.3	52.0±13.9
			p<0.03
TG [g/L]	212.7±68.5	58.8±9.9	72.4±21.3
		P<0.0001 vs. AD	p<0.0001 vs. AD
Total protein [g/L]	69.0±9.3	68.3±5.3	68.2±9.5
Albumin [g/L]	31.7±7.1	37.5±2.7	38.2±5.2
		p<0.03 vs. AD	p<0.04 vs. AD
Hemoglobin [g/dl]	13.6±1.4	15.3±1.0	14.3±1.5
		p<0.05 vs. AD	
RBC[x10 ⁶ /μl]	7.7±0.6	7.8±0.6	7.6±0.8

We conclude that in the rat late-life introduction of caloric restriction partially reverses age-dependent diseases but it is less efficient than the life-long restriction diet.

157. LINKING IMMUNE LIFE HISTORY, BODY GROWTH AND AGING: A MODELING APPROACH

*S.G. Rudnev*¹, *A.A. Romanyukha*¹, *A.I. Yashin*²

¹Institute of Numerical Mathematics of RAS, Moscow, Russia; ²Center for Demographic Studies, Duke University, USA; rudnev@inm.ras.ru

In contrast to other biological tissues and organs, the immune system aging starts early in life and can be irreversible in character. The results of clinical and laboratory studies, as well as of mathematical modeling, show that the structure and intensity of antigen load in childhood affects the dynamics of aging and mortality at later ages. A growing body of evidence from animal and human studies supports an idea about the existence of trade-off between immune defense and organism's growth. For instance, primary immunodeficiencies in humans can result in growth impairment and even growth failure. This also holds true for HIV infection, depending on extent of viral load which, presumably, reflects a rising energy deficit caused by the gradual increase in antigenic pressure. In order to describe ontogenetic changes of the immune system, we modified the mathematical model of age related changes in population of peripheral T cells previously suggested by Romanyukha and Yashin (2003) by including in it the dynamics of T cell populations during the postnatal life. The treatise is based on the assumption of linear dependence of antigen load from basal metabolic rate, which, in turn, depends on body mass following Kleiber's empirical allometric relationship known as 3/4 power scaling law. Energy cost of antigen burden, i.e. the energy needed to produce and maintain immune cells plus the energy loss due to infectious diseases, was estimated and used as a measure of the immune system effectiveness. The dependence of optimal resource allocation from the parameters of antigen load was studied. Our analysis suggest the stabilizing effect of body growth on the immune system development. The results of modeling normal and accelerated aging of the immune system support an «adaptive» view on the infection anergy development in HIV infection and were applied for critical analysis and substantiation of existing treatment methods of chronic infections.

158. CORRECTION OF AGE-RELATED ALTERATIONS IN RAT PANCREAS BY PINEAL PEPTIDE BIOREGULATORS

A.P. Ryzhak, I.N. Kostyuchek (*St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; ryzhak_anastasia@yahoo.com*)

Life conditions of modern society, unfavorable ecological factors, unbalanced nutrition, sedentary life style cause the expansion of preterm aging for majority of people that provokes promotion of age changes in human organism, resulting in age pathology. Pancreas pathology occupies the considerable place in disease incidence structure for senior age group of people. The aim of this study was to reveal the role of peptide bioregulators in retardation age changes in pancreas. 70 male-rats Vistar line with body weight 130–140 g were included and were divided by randomisation method for 7 groups. 1st group (control) was represented by intact animals. Preterm aging was modeled by pinealectomy for animals of 2–7 groups. On 21st day after operation animals of 2nd and 3rd groups had been obtaining during the next 10 days physiological solution in form of 0,5 ml subcutaneous injections, to animals of 4th and 5th groups pineal peptide — epitalon (H-Ala-Glu-Asp-Gly-OH) in dose 0,5 mkg had been injected the same way for 10 days, and to animals 6th and 7th groups epitalamin peptide complex, exposed from calf pineal in dose 0,5 mg for rat had been injected. Our results showed that 1,5 month after pinealectomy in animals influenced by epitalamin pancreas volume ratio of glucagon containing A-cells increased in comparison with control from 12,8±2,5% to 13,9±1,8%, and somatostatin containing D-cells decreased authentically from 4,5±1,2% to 3,2±0,9%. It was noticed a tendency for increasing the volume ratio glucagons containing A-cells for 20% in pancreas of animals who were taken epitalon 1,5 month after pinealectomy. Moreover the volume ratio of somatostatin containing D-cells increased up to 40% in comparison with control. Therefore pineal peptide bioregulators promote the correction of pancreas aging morphofunctional abnormalities in preterm aging model.

159. EXPERIMENTAL MODEL: CARROT ASSOCIATED WITH EXERCISE DIMINISHES THE INCIDENCE OF ISCHEMIC CARDIOPATHY IN WISTAR RATS

N.L. Safranzian, C.H. Castillo, J.M. Pino (*Politechnic National Institute, Medicine School of Higher Learning, Postgraduate and Research Section, Mexico City, Mexico; nilesa10@yahoo.com.mx*)

Introduction: In this study the influence of a carrot rich diet combined with exercise was investigated in 50 female Wistar rats 60 days old. Four groups were formed: 1) 10 rats with a carrot rich diet combined with constant exercise, 2) 15 rats with a carrot rich diet, but without an exercise routine, 3) 10 rats with a standard lab diet combined with exercise, and 4) 15 rats with a standard lab diet, but without an exercise routine. *Materials and methods:* The half life of a female Wistar rat in Mexico City is 1 year and 8–10 months. During the course of the experiment blood tests were performed every two weeks to measure glucose, cholesterol, triglycerides and complete hematological parameters. The rats voluntarily ran for 30 minutes daily. *Results:* The first group showed glucose levels of 80±7 mg/dL, cholesterol 145±12 mg/dL, triglycerides 163±14 mg/dL and normal hematological parameters. The second and third groups showed increases in the aforementioned

parameters, but all of them being within the normal range. The fourth group showed glucose levels of 160±35 mg/dL, cholesterol 190±55 mg/dL, triglycerides 255±80 mg/dL and with pathological hemotological parameters, such as an increase in blood coagulation, a 6.6% death rate due to breast cancer, a 6.6% death rate due to neck cancer, and a 86.7% death rate due to ischemic cardiopathy. The rats of the last group had cardiac infarct at 1 year and 8±2 months of age, while of the rats of the first group only one died of cardiac infarct (during exercise), and those of the other two groups enjoyed an optimum state of health. *Conclusions:* 10% of the rats who had a carrot rich diet combined with exercise presented ischemic cardiopathy, while 86.7% of the rats without these factors presented acute cardiac infarct. Therefore, a carrot rich diet associated with exercise diminishes the risk of cardiac infarct and prolongs the half life of Wistar rats.

160. MITOCHONDRIAL ULTRASTRUCTURE — THE BIOLOGICAL MARKER OF THE AGING

V.B. Saprunova¹, L.E. Bakeeva¹, N.V. Roshina², E.G. Pasukova² (*¹A.N. Belozersky Institute of Physico-Chemical Biology, M.V. Lomonosov Moscow State University, Moscow; ²Institute of Molecular Genetics of RAS, Moscow, Russia; saprunova@mail.genebee.msu.ru*)

The aging process is one of biological problems that attract much interest. Ultrastructural studies of the cell in the 1960s attributed an important role in aging to factors at the subcellular level. It was hypothesized that aging reflects events that occur in the cell cytoplasm. The study of aging at the ultrastructural level of the cell and cellular organelles in the flight muscle of insects is a promising approach. Williams et al. showed in 1943 that the flight activity of insects is decreased during aging. However, the mechanism of this age-dependent decrease is unknown. We studied the morphology of mitochondria of the flight muscle of *D. melanogaster* to establish the type and sequence of the development of ultrastructural changes in mitochondria during aging. The lifespan in the strain used is 40–50 days. We studied the ultrastructure of mitochondria of the flight muscle of male and female *D. melanogaster* within a day and 36 days after birth. The ultrastructure of mitochondria of the flight muscle of both male and female young (one day after birth) *D. melanogaster* was in agreement with the current data on the mitochondrial structure of the flight muscle of insects. The mitochondrial apparatus was well-developed and consisted of large mitochondria with a densely packed system of mitochondrial cristae. The cristae, like in other insects, had a shape of plates connected by openings with regular location, which formed banding of mitochondria. The mitochondria are connected by intermitochondrial contacts, which had an ultrastructure similar to that of the intermitochondrial contacts of cardiomyocytes. The ultrastructure of mitochondria of the flight muscle of *D. melanogaster* on the 36th day after birth considerably differed from the aforementioned ultrastructures. Almost all mitochondria had various destructive changes. One of the main changes was partial transformation of the inner mitochondrial membrane into myelin-like concentric formations. Other reconstructions in the mitochondrial morphology seen in the preparations were regarded as different stages of mitochondrial disintegration. Obviously, the changes in the mitochondrial ultrastructure were not developed simultaneously in all organelles, but continu-

ously accumulated with time. The data obtained suggest that destruction changes of mitochondrial ultrastructure of the flight muscle of *D. melanogaster* are the morphological sign of the aging process for insects. The results obtained and analysis of literature data suggest that age-dependent accumulation of ultrastructural changes in the mitochondria of the flight muscle of *D. melanogaster* reflects a mechanism of programmed mitochondrial death, mitoptosis. It seems that mitoptosis during the aging of the flight muscle of *D. melanogaster* is a protective antioxidant mechanism. This mechanism does not result in simultaneous self-elimination of all mitochondria, but leads to gradual destructive process followed by death of a single mitochondria.

161. IMPACT OF THE CYP2D6 POLYMORPHISMS ON THE EFFICACY OF DONEPEZIL IN PATIENTS WITH ALZHEIMER DEMENTIA. A PROSPECTIVE, CONTROLLED, MULTI-CENTER STUDY

D. Seripa¹, A. Pilotto², F. Paris², M.G. Matera¹, M. Franceschi², L. Cascavilla², A. Bizzarro³, F. Mangialasche⁴, G. Placentino², A. Daniele³, C. Masullo³, P. Mecocci⁴, B. Dallapiccola⁵ (¹Laboratory of Gerontology & Geriatrics, Department of Research, IRCCS «Casa Sollievo della Sofferenza», San Giovanni Rotondo (FG), Italy; ²Geriatric Unit, Department of Medical Sciences, IRCCS «Casa Sollievo della Sofferenza», San Giovanni Rotondo (FG), Italy; ³Department of Neurology, Catholic University School of Medicine, Rome, Italy; ⁴Institute of Gerontology and Geriatrics, Department of Clinical and Experimental Medicine, University of Perugia, Perugia, Italy; ⁵CSS-Mendel Institute, Rome, Italy; dseripa@operapadrepio.it)

Background: Donepezil is a potent and specific piperidine-based inhibitor of acetylcholinesterase (AChE) currently used for the treatment of mild to moderate Alzheimer's disease (AD). After oral administration, more than 90% of donepezil is absorbed and metabolized by hepatic microsomal cytochrome P450 (CYP) 2D6 isoenzyme. Aims of this study were to evaluate the impact of two common single-nucleotide polymorphisms (SNPs) rs1080985 and rs3892097 in the CYP2D6 gene on efficacy of treatment with donepezil. **Methods:** Eighty-seven patients of Caucasian ethnicity from three research center of Centre and South Italy (35 males and 52 females, mean age 71.22±8.11 years, range from 52 to 86 years), all diagnosed as probable AD according to NINCDS-ADRDA criteria, were included in the study. All had been receiving therapy with donepezil 5–10 mg/die for at least 3 months. The two SNPs in the CYP2D6 gene rs1080985 (C⁻¹⁵⁸⁴→G), related to an extensive metabolizer (EM) phenotype, and rs3892097 (G¹⁹³⁴→A) related to a poor metabolizer (PM) phenotype, were analyzed. Results were expressed as odds ratios (ORs) and relative risk (RR). The Hardy-Weinberg equilibrium was also verified. **Results:** On the basis of their MMSE variation at 3 month follow-up (±20% versus baseline scores), 56 patients were classified as responders (R) and 31 patients as non-responders (non-R). A significant higher frequency of the rs1080985 G/G genotype was found in non-R patients than in R patients (19.4% vs 3.6%; p=0.022, OR=6.480, 95% CI 1.375 — 29.922). No differences were found in the distribution of the other C/C or C/G genotypes (p=0.653 and p=0.473, respectively). The RR for poor response to treatment of patients G/G homozygotes was 2.370, 95% CI 1.216 — 3.106). No differences between R and non-R patients were observed in

the overall distribution of rs3892097 genotypes (p=0.603). **Conclusions:** In elderly AD patients, the G/G genotype of rs1080985 is associated with a poor response to donepezil. Genotyping of CYP2D6 may be clinically useful in identifying AD patients with different responses to donepezil treatment.

162. KLOTHO VAL/VAL GENOTYPE IS PROTECTIVE AGAINST MALNUTRITION IN HOSPITALIZED ELDERLY PATIENTS

D. Seripa¹, M. Franceschi², M.G. Matera¹, L.P. D'Ambrosio², C. Scarcelli², F. Paris², L. Cascavilla², M.G. Longo², A.M. Paziienza², G. D'Onofrio², M. Zurro², B. Dallapiccola³, A. Pilotto² (¹Laboratory of Gerontology & Geriatrics, Department of Research, IRCCS «Casa Sollievo della Sofferenza», San Giovanni Rotondo (FG), Italy; ²Geriatric Unit, Department of Medical Sciences, IRCCS «Casa Sollievo della Sofferenza», San Giovanni Rotondo (FG), Italy; ³CSS-Mendel Institute, Rome, Italy; dseripa@operapadrepio.it)

Background: The somatomedin insulin-like growth factor-1 (IGF-1), is a low molecular weight peptide that has been recently described as an indicator of nutritional status in hospitalized patients. The recently discovered protein Klotho, encoded by KLOTHO gene (KL), acts as a circulating hormone that links to a cell-surface receptor and reduces intracellular signals of insulin and IGF-1, by blocking insulin-stimulated uptake of glucose. This biochemical pathway that involves IGF-1 and KL has been related to aging, probably acting as a caloric trigger in cell metabolism. Several functional single-nucleotide polymorphisms (SNPs) has been described in KL. In particular the Phe³⁵²→Val polymorphism has been associated with cognitive ability and human aging. Aim of the study was to evaluate the association of the Phe³⁵²→Val polymorphism with nutritional status in hospitalized elderly patients. **Methods:** Nutritional status was investigated by means of the mini-nutritional assessment (MNA) in 1358 hospitalized elderly patients (655 males and 703 females, mean age 77.67±7.13 years, range from 60 to 100 years), all Caucasians from the area of North Apulia, South Italy. Patients were stratified into three groups according to their nutritional status as poor nutrition (MNA≤17.0), risk of poor nutrition (MNA=17.5 to 23.5), and normal nutrition (MNA≥24). All patients were analyzed for the SNP rs9536314 (T¹⁰⁵⁵→G encoding Phe³⁵²→Val) in the KL gene. As a control for genetic frequencies of the general population of North Apulia area, the same polymorphism was also analyzed in a community-based sample of 1345 healthy Caucasians (612 males and 733 females, mean age 43.39±16.33 years, range from 22 to 98 years). Results were expressed by means of odds ratios (ORs) and relative risk (RR). The Hardy-Weinberg equilibrium was also verified. **Results:** A significantly low frequency of Val/Val homozygotes was observed in the hospitalized elderly patients with poor nutrition compared to the community-based sample (0.4% vs 3.1%; p=0.015), as well as to hospitalized elderly patients with normal nutrition or at risk of poor nutrition (0.4% vs 2.8%; p=0.020). The high Val/Val frequency seems to be protective against malnutrition in hospitalized elderly patients (OR=0.141, 95% CI 0.024 — 0.821). Indeed, in hospitalized elderly patients the relative risk of malnutrition was significantly lower in carriers of the Val/Val genotype (RR=0.168, 95% CI 0.030 — 0.848). **Conclusions:** The status of poor nutri-

tion seems to be associated to a significant low frequency of the Val/Val genotype; moreover, an high frequency of Val/Val genotype seems to be protect against malnutrition. Carriers of the Val/Val genotype show a low relative risk of malnutrition.

163. GENETIC ASPECTS OF AGING AND LONGEVITY

L.D. Serova, N.A. Malygina, I.V. Kostomarov (Russian Research Institute of Gerontology, Moscow, Russia; du0032@postman.ru)

Many inherited diseases are characterized by signs of the premature aging: among these are the Hutchinson-Gilford Progeria Syndrome (HGPS — children progeria) and the Werner syndrome (WRN — adult progeria). Primary molecular defect of the HGPS — mutations in lamina A gene. WRN, xeroderma pigmentosum, Cockayne syndrome, Bloom syndrome are connected with mutations in the reparation genes. Chromosomal instability, the premature aging, with cancer predisposition and sharp reduction of the life span are typical for these diseases. But in most cases the life span depends upon a number of genes and the environmental factors. Approximately one quarter of variations in life span can be attributed to genetic factors. One of the approaches to the investigation of genetic predisposition to longevity is a study of associations of functional variations of genes, connected with chronic diseases associated with old ages. We tested the associations of genes variants: I/D polymorphism angiotensin converting enzyme gene (ACE), polymorphism E2, E3, E4 apolipoprotein E gene (ApoE), HindIII polymorphism lipoproteinlipase (LPL) and (C677T polymorphism) gene methylenetetrahydrofolate reductase gene (MTHFR) with life span. We compared genotype distributions between two age groups of patients with ischemic heart disease: I — 151 subjects aged from 35 to 75 years old, mean age 62.0 and II — 92 patients over 85 years old, mean age 91.0. No difference in allele distribution of either ACE or MTHFR gene between the two groups was found. Deviation of genotype frequencies of LPL in group II from the Hardy-Weinberg equilibrium was revealed ($p < 0.001$). This seems to be a result of an increase in heterozygote (H+H-) frequency. Heterozygotes of LPL gene may have some advantage that provides for their longevity. The frequency of allele E4 of ApoE gene is decreased (0.07 versus 0.24, $p < 0.001$) in the group of patients over 85 years old. In a group of IHD older than 85 years patients combination of H+H+; $\epsilon 4$ genotype discovered ten times rarer (0.02 and 0.21, $p < 0.003$) than in IHD of younger patients (before 75). On the contrary, combination of H+H-; $\epsilon 2$ genotype was observed 3.4 times oftener (0.17 and 0.05, $p < 0.02$) in a group of long livers. Possibly there is a certain hereditary predisposition to longevity and it probably is connected with genes, which help to preserve health.

164. INFLUENCE OF INDUCED GONADAL STERILITY ON THE MALE AND FEMALE LIFESPAN IN DROSOPHILA MELANOGASTER

M.V. Shaposhnikov, A.A. Moskalev (Institute of Biology of Komi Science Center of Ural Branch of RAS, Syktyvkar, Russia; mshaposhnikov@mail.ru)

The most of studied species and human have sexual dimorphism of lifespan that manifests in extended life span of females. As it was shown on nematode *Caenorhabditis*

elegans, longevity is affected by reproduction on the level of molecular signals from gonads. However the contribution of male and female gonads to life span was not yet estimated. We have shown the life span reduction in sterile (as a result of P-M hybrid dysgenesis) females and the life span increase in sterile males of *Drosophila melanogaster*. The results of our research suggest that signals from male and female gonads affect longevity differently. Whereas in fertile flies sexual dimorphism that manifested in greater female longevity was observed, in sterile flies females had duration of life close to males. The leveling of the life span characteristics in sterile females and males shows that mechanism of sexual life span differences relates to reproductive system. We suppose that testicles induce some mechanism that shortens male life span, and ovaries are the source of the signal extending females life span.

165. MOLECULAR INFORMATIONAL SYSTEM «PEPTIDE — DNA»

L.K. Shataeva¹, A.A. Chernova², V.Kh. Khavinson² (¹Institute of Macromolecular Compounds of RAS, St. Petersburg; ²St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; shataeva@gmail.com)

It is known that the evolution of organisms is accompanied by an increasing content in their proteins and peptides (in proteomes) of amino acid residues carrying side groups with positive or negative charges (Glu, Asp, Lys, and Arg). Statistical analysis of amino acid sequences of transcriptional factors (TF) showed that exactly these amino acids are included in TF binding centers. Di-, tri- and tetrapeptides isolated from nucleoprotein complexes of different animal tissues, include these amino acids and the next residues, most frequently, with hydrophobic side groups (Gly, Ala, Leu, and Pro). These peptides were synthesized after the identification of their chemical structure. High regulatory biological activity of these peptides was established in the large number of experiments *in vitro* and *in vivo*. Most important result consists in a statistically significant increase in the mean life span of animals, caused by the signal peptides administration. It evidences geroprotective activity of small peptides specifically interacting with chromatin DNA. Previously we proposed a model of complementary binding of small peptides with promoter region of genes in the DNA major groove. According to this model, side groups of peptides can bind together from 4 to 6 nucleotide pairs with appointed sequence (nucleotide block) by the additional hydrogen bonds. Frequent correlation of repeated nucleotide blocks in promoter region of gene and repeated peptide blocks in TF was used for evaluation of the information load according to Shannon. The calculation showed that promoter region of gene contains repeated nucleotide blocks of 7 base pairs for which the value of the information load reaches 6.4 bits per base pair. Similar calculation for TF gives value of the information load 7.1 bits per amino acid residue. Thus, the complementary interaction between the geroprotective peptide and DNA is supplemented by the dosed information transfer. It is known, that small peptides are generated in the cellular nucleus by ubiquitin degradation of TF. A dynamic ubiquitin equilibrium couples hydrolytic proteasome activity to production of signaling peptides. So, small peptides are involved in the gene expression throughout the whole life cycle of a cell.

166. MITOCHONDRIA-TARGETED ANTIOXIDANTS AS A TOOL TO PREVENT AGING-RELATED DISEASES AND PROLONG LIFESPAN

V.P. Skulachev (A.N. Belozersky Institute of Physico-Chemical Biology, M.V. Lomonosov Moscow State University, Moscow, Russia; skulach@belozersky.msu.ru)

A series of mitochondria-targeted cationic derivatives of plastoquinol, a chloroplast electron carrier and antioxidant, was synthesized. These compounds called SkQ proved to be (i) excellent penetrants for planar phospholipid membrane, (ii) much more active anti- and much less active pro-oxidants than analogous derivatives of mitochondrial ubiquinone (MitoQ) when tested in the planar membranes, liposomes, mitochondria, bacteria, yeast, as well as the animal and plant cells. In the animal and plant cells, very low (nM) concentrations of SkQ strongly inhibited apoptosis as well as necrosis induced or mediated by reactive oxygen species (ROS). In isolated rat heart, nM SkQ effectively abolished the H₂O₂-induced arrhythmia. In mice nM SkQ concentrations when added to drinking water significantly prolong the lifespan, which was accompanied by maintenance of regular oestral cycles in females at ages when normally the cycle disappear. In p53^{-/-} mice, SkQ increased the lifespan being effective at concentration two millions times lower than non-targeted antioxidant N-acetyl cysteine. Formation of mouse tumours caused by xenografts of the p53^{-/-} human tumour cells was inhibited if drinking water contained SkQ. In rats, SkQ was found to strongly decreased the area of the ischemia-induced heart and brain damages and prevented death of animals, caused kindly ischemia. Moreover, SkQ effectively treated a large group of age-related disorders, i.e. osteoporosis, the loss of memory and sexual behaviour, as well as cataract and retinal dystrophy. SkQ not only prevented development of cataract and retinal dystrophy in aging rats but also reversed already appeared pathologies. Among 101 dogs, cats and horses, suffering from retinal dystrophy, in 82 cases obvious improvement of the vision was observed. 36 of 47 completely blind animals recovered their sight after 2–12 week SkQ treatment. In rabbits who became blind due to experimental uveitis, vision function appeared when drops of SkQ were applied. It is suggested that SkQ as scavenger of intramitochondrial ROS interrupts execution of an aging program mediated by stimulation of ROS-induced apoptosis in various organs of aging organism. *This study was undertaken by groups of Drs. V. Anisimov, Yu. Antonenko, L. Bakeeva, B. Chernyak, N. Kolosova, V. Kapelko, E. Kopenkin, B. Kopnin, G. Korshunova, M. Lichinizer, I. Manukhov, E. Mokhova, M. Muntyan, P. Philippov, O. Pisarenko, E. Ruuge, V. Samuilov, F. Severin, V. Tashlitsky, Yu. Vasiliev, M. Vyssokikh, L. Yaguzhinsky, R. Zinovkin and D. Zorov within the framework of a project invested by Mr. O. Deripaska.*

167. AGEING MARKERS IN THE SEGMENTAL PROGERIA CELLS

N.V. Smirnova, N.M. Pleskach, V.M. Mikhelson (St. Petersburg Cytology Institute; nvsmirnoff@yandex.ru)

Last decades the close connection of the cell aging, DNA repair, cell cycle regulation and cancer progression processes was shown. So, it was shown at the molecular level, that the factors, which had been considered to be associated with repair functions, have a wide enough

spectrum of functions influencing cell aging and its *alter ego* — cancer. Simultaneously the researches various cytology markers of aging and searches for new markers proceeded. In this connection we used cultures of primary fibroblasts, derived from the patients with the accelerated aging — ataxia-telangiectasia (AT) and Werner syndrome (WS) as modeling object. As markers of aging we studied senescence-associated β -galactosidase level (pH4.3), which was increased in senescent cells, occurrence of the serine 139 phosphorylated histone H2AX and specialized domains of facultative heterochromatin, called Senescence Associated Heterochromatin Foci (SAHF). Expression of SA β -galactosidase was sharply increased in the cells of both AT and WS patients in comparison with control cells, moreover the amount of SA β -galactosidase in WS cells was much more than in AT cells, accordingly to that accelerated ageing was an essential nosological featury of WS. The great number of AT and WS cells showed detectable amount of phosphorylated histone H2AX without genotoxic agent treatment and some difference in expression of γ H2AX foci with genotoxic agent treatment in comparison with expression of γ H2AX foci in control cells. Senescence Associated Heterochromatin Foci (SAHF) were observed in the cells of the patients with premature ageing under DAPI staining. All studied cells showed obvious presence of cell ageing markers representing senile phenotype of the patients at the cell level. Thus, these markers might serve for statement of the diagnosis or its specification.

168. THE GEROPROTECTIVE EFFECTS OF PEPTIDES BIOREGULATORS IN OLD MAMMALS

T.N. Sollertinskaja¹, M.V. Shorochov¹, N.F. Myasoedov² (¹I.M. Sechenov Institute of Evolutionary Physiology and Biochemistry of RAS, St. Petersburg; ²Institute of Molecular Genetic of RAS, Moscow, Russia; tns-peptidus@mail.ru)

One of the priority problems of the gerontology is the development and introduction of neuroprotective drugs for the restoration of disturbances brain functions in the elderly. The present work is devoted to the comparative study of the biologically active drugs of the last generation Selank (Sel) and Cortexin (Cor) in view of possibility compensation of brain functions distortions in old mammals: insectivores, rodents and primates. The food model with multiparametrical registration of vegetative and motor parameters of Higher Nervous Activity was used. The drugs: Sel (Institute of Molecular Genetic, Moscow) and Cor («Geropharm», St. Petersburg) were induced intranasally or intramuscular as 30–300 mkg/kg and 0,1–1,0 mg/kg accordingly for 10 min before experiments. It was shown that Sel and Cor administration in old (>3 year) hedgehogs exerted uniform facilitatory influence on different forms of behaviour. The influence upon the Higher Nervous Activity is less significant. Cor and Sel administration induce a prevention the hibernation processes at the autumn and winter period. It was been shown that in contrast to hedgehogs Cor and Sel effects in old rats on the inherent forms of behaviour are more prolonged (up to 2 months). Sel compensatory influence is significantly because it can prevent the development of cold and immobilization stress. On the Sel background the communications and life duration increased (up to 4 old ages). Cor accelerates the ability to the formation of conditioned food reflexes. Cor and Sel had been activating all studied forms of inherent behaviour of old monkeys (>20 years) for a long time (up to

5 months). The action of drugs is differentiated. Sel was expanding the zoosocial and communication, the neurotic reactions were disappearing. The small (30–50 mkg/kg) doses Sel induced long lasted (up to 5 months) sedative effects and rendered positive vegetotropic action at the disturbances ECG and sphygmogram. The Sel influence at the memory (conditioned delay reactions) is intensification character but lasted for a short-term (up to 7 days); on the image memory was longer (about 20 days). Cor administration to old monkeys increases the attention, visual memory and emotional stability. On the Cor background the conditional and operative memory improved. The question about more purposeful use Sel and Cor in Gerontology is discussed.

169. DNA DOUBLE HELIX BINDS GEROPROTECTIVE OLIGOPEPTIDES

A.Yu. Soloviyev¹, P.Yu. Morozova¹, L.K. Shataeva¹, V.Kh. Khavinson² (¹*Institute of Macromolecular Compounds of RAS, St. Petersburg*; ²*St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia*; soloviev@mail.macro.ru)

Native DNA double-helix and synthetic DNA [poly(dA-dT):poly(dA-dT)] double-helix were used in experimental investigation of their interactions with regulatory peptides, particularly with geroprotective oligopeptides. Gel-chromatography experiments demonstrated that in mixed solution of small peptide and DNA they form intermolecular nucleopeptide complex. We proposed a model of complementary binding of DNA double-helix and small peptides by means of hydrogen bonds between functional groups of both the participants. According to this model, side groups of these peptides can bind together from 4 to 6 nucleotide pairs by the additional hydrogen bonds. Spectroscopy experiments showed that DNA double helix and peptides solutions after mixing demonstrate a hyperchromic effect at 260 nm. It testifies to the breaking off hydrogen bonds between nucleotide bases of base pairs neighboring to the peptide binding site. Correspondingly, local separation of double helix chains occurs. Experimental studies of the complex formation between the synthetic geroprotective peptide Ala-Glu-Asp-Gly and synthetic DNA double-helix [poly(dA-dT):poly(dA-dT)] show that the hyperchromic effect at 260 nm depends on the concentration ratio of the peptide molecules and complementary nucleotide sequence in DNA macromolecules. This dependence has saturation for every specimen of native DNA double-helix. For synthetic DNA double-helix there was registered 30% increase in optic density of solution at the wave length 260 nm, a ratio of 1 peptide molecule to 9 nucleotide pairs. It is known that the separation of double-helix chains precedes the initiation of gene transcription by RNA polymerase II. Presumably, some oligopeptides and particularly geroprotective tetrapeptide Ala-Glu-Asp-Gly takes the part of signal molecule and can be involved in the processes of gene transcription as allosteric effectors or TF-mimetics.

170. DETECTION OF HETEROZYGOUS CARRIERS IN ATAXIA-TELANGIECTASIA FAMILIES

I.M. Spiuvak, N.V. Smirnova, N.M. Pleskach, V.M. Mikhelson (*Institute of Cytology of RAS*; irina_spivak@hotmail.com)

Protein kinase ATM (ataxia-telangiectasia mutated) is the key protein in global cell response. In causes of muta-

tions in both alleles of the ATM gene, either disease with complicated pleiotropic phenotype (ataxia-telangiectasia) (AT) is developed, or Louis-Bar syndrome, characterized by multiple neurological anomalies, high probability of tumors, accelerated aging, and utmost sensitivity to action of ionizing radiation (Spivak, 1999; Landsdorp, 2000; Shiloh, 2003). Although AT is the most frequent syndrome of the hereditary increased radiosensitivity. Heterozygous occurrence of this disease is broader than could be supposed, judging by its probability (1 case in 200,000 newborn), reaching the level of 2 to 10 percent in various populations. The heterozygous carriage of this mutation does not lead to AT but is connected with an extremely elevated risk of early malignant tumors of varied etiology. Indirect fluorescence method may be applied for discrimination of this carriage by blood relatives of AT-patient. Two proteins (p53, and variant histone H2AX in phosphorylated form) have been chosen for our study. No specific fluorescence of the P53 protein, was observed in nuclei of intact cells, both by healthy donor, and all those patients having ataxia-telangiectasia, as well as heterozygote carriers of the aforementioned disease. In 0.5 hour after being irradiated in dose 5Gy, bright specific green fluorescence appears in cells of healthy donor, corresponding to stabilization of the P53 protein, while in 1.5 hour after irradiation return to intact state is starting. In cells of patients with AT, as well as their blood relatives — strong heterozygous carriers of the disease (parents), such specific nucleus fluorescence appears not earlier than in 1 hour, and stays on the same level as 1 hour after irradiation, i.e. alteration of time and stabilization character of the P53 protein, compared to cells from healthy donor, occurs. Alterations in number of foci of the phosphorylated form of variant histone H2AX in cells of AT patients, and their blood relatives, were studied. Judging by nucleus focuses of the H2AX-P, the number of double-strand breaks in cells after being irradiated, or subjected to action of mutagens is detected, and what is the dynamics of their consolidation, taking place as part of activation of DNA repair processes, and global cell response to DNA damage. Practically no specific foci, containing H2AX-P, were observed in nuclei of intact cells of healthy donor. At the same time, foci are well pronounced in intact nuclei of cells of AT patients, and heterozygous carriers of this disease. However the quantitative differences in P53 stabilization after gamma-irradiation and H2AX foci formation were found in cells of members of AT families. These peculiarities may serve as additional markers, contributing to detailed diagnosis of ataxia-telangiectasia on cell level, and the detection of carriage of this disease in dubious cases (e.g. by sisters and brothers of patient).

171. PROPHYLAXIS OF OPAQUE-INDUCED NEPHROPATHY IN AGED PATIENTS

E.V. Stoyakina¹, A.L. Arieiev¹, K.L. Kozlov¹, E.V. Kolmakova², G.A. Zamoskovskaya² (¹*St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS*; ²*I.I. Mechnikov State Medical Academy, St. Petersburg, Russia*; mila_kozina@mail.ru)

A nephrotoxic effect of radio-opaque compounds (ROC) is a vital clinical issue and a cause of acute renal impairment, even when measures are taken to lower the toxic effect of ROC on kidneys. Opaque-induced nephropathy (OIN) is defined as a renal dysfunction, which is characterized by creatinine concentration rising in serum

within three days after administration of ROC. The aim of the present study was to reveal risk factors in order to take measures of prophylaxis of nephrotoxicity of opaque compounds, as well as to estimate an effectiveness of calcium channel-blocking agents in prophylaxis of nephropathy. A renal function was examined in aged patients prior to and after radio-opaque examination. To assess the cytoprotective capability of calcium channel-blocking agents, the patients were administered nifedipine prior to the opaque compound administration. Clinical complexity of OIN can be minimized providing that risk group patients are singled out. The first step to minimize the risk of OIN was the selecting of patients with a renal dysfunction, diabetes mellitus, congestive heart failure, dehydration and of those administered nephrotoxic preparations (including nonsteroidal resolvents) or aged more than 60 years old. Of importance among the risk factors connected with ROC are high doses of the opaque preparation, its osmolarity, previous injection of ROC and its type, and the preparation administration way. As a rule, the degree of nephrotoxicity rises in aged patients due to the lowering of their kidney weight and to the diminishing of kidney function and perfusion. That is why the total dose of ROC should be minimized, low- and iso-osmolar ROC having to be used. It has been shown that three-day treatment with calcium channel-blocking agents stops glomerular filtration rate falling and decreases proteinuria induced by the nephrotoxic action of the opaque compound. The effectiveness of calcium channel-blocking agents is due to their positive influence on renal hemodynamics and to their cytoprotective effect on renal cells. The application of minimal amounts of ROC, intensive hydration therapy, as well as the use of calcium channel-blocking agents, are nowadays basic preventive measures against nephropathy resulting from ROC administration.

172. POSSIBILITIES FOR ENDOECOLOGICAL REHABILITATION IN THE IMPROVEMENT OF LIFE QUALITY IN AGING

L.P. Sviridkina, Yu.M. Levin, S.G. Toporova (Russian Research Institute of Gerontology; gerinfo@mail.ru)

One of the mechanisms of aging is inadequacy of the microcirculation system including interstitial humor transport (IHT) and of lymphatic drainage (LD) of tissue. This inadequacy is growing in case of development of any pathology. Proceeding from this, we consider nonpharmacological stimulation of IHT and LD, which is at the base of endoecological rehabilitation and treatment (ERT), as one of the possible approaches to raise the efficacy of measures aimed at health improvement and disease treatment and thus leading to a higher life standard for aged, old and the oldest old. It is very important that ERT technology enables to carry out non-traumatic sanitary measures at every level of the organism beginning with cell habitat inaccessible for other detoxification methods. Results of the study showed that introduction of ERT modifications (depending on the presence and specificity of the disease) into the system of medical sanitation activities in more than 10 thousand patients aged 50-82 helped to accelerate, irrespective of the disease aetiology and pathogenesis, the arrest of main symptoms and to reduce risk factors (increased variability of cardiac rate, decreased amount in blood of aggregate cholesterol, beta lipoproteins, triglycerides, glucose). We also noted increased duration of remission, prevention in

the development of unfavorable changes, connected with the disease patho-genesis or with standard therapeutic medicinal load. Positive shifts in the general state of patients (improvement of psychoneurological functions, normalization of immunity indices, different types of metabolism) testified to a higher life standard. Objective manifestation of ERT efficacy was reflected in the changes in a number of homeostasis parameters, including blood toxicity markers, towards their modal meanings that in its turn showed to the decreased expression of endogenous intoxication. Thus ERT method gives real possibility to improve the life standard of aged and old patients and may be considered as one of the helpful approaches towards higher effectiveness of treatment and prevention of untimely aging.

173. PECULIARITIES OF MAMMARY GLAND VASCULARIZATION IN FIBROCYSTIC DISEASE IN WOMEN IN CHILDBEARING AGE

M.V. Terzeman, I.N. Kostyuchek, Y.A. Tafeev-Shidlovsky (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; admin_pao@mail.ru)

Vascularization activity alterations are typical for hyperplastic both dys hormonal and timorous processes in a mammary gland. The increase of the quantity of vessels promotes metabolic processes in the tissue, which may be significant for the progress of pathologic alterations. The study was aimed at identifying the dependence of mammary gland tissue vascularization activity on the intensity of mammary gland epithelial component hyperplasia in case of fibrocystic disease. Fibrocystic disease with atypical epithelial component proliferation is characterized by more intensive vascularization as compared to the non-proliferating form ($t=2.35, p=0.028$). The mean quantity of vessels made 19.00 ± 1.00 in the atypical form which made a reliable difference from the non-proliferating form, where it equaled 11.83 ± 0.86 . There is no reliable distinction in this index between the proliferating and non-proliferating forms. The quantity of vessels in the proliferating form of fibrocystic disease equaled 11.64 ± 1.52 . Reliable increase of the relative area occupied by vessels in histological paraffin-embedded mammary gland tissue section in the presence of micropapillae which lack a fibrovascular core ($r=0.39; p=0.013$) and solid lobular proliferates ($r=0.25; p=0.017$) in the ducts was characteristic for the proliferating form. As the conclusion, the difference in vascularization intensity in the development of the hyperplastic processes in the mammary gland likely determines the dynamics of both the progress and the quality of pathologic alterations in the tissue.

174. GASTROINTESTINAL MELATONIN PLAYS A COORDINATING ROLE IN LOCAL INTERCELLULAR RELATIONSHIPS IN PREMATURE AGING

A. Trofimov, Y.A. Tafeev, I.V. Knyazkin, S.S. Kononov (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; trofimov@gerontology.ru)

The dysfunctions of neuroimmunoendocrine mechanisms of homeostasis regulation may play an important role in aging. In this connection, pinealectomy was used as the model of premature aging. The functional morphology of spleen and neuroendocrine cells located in gut, pancreas and thyroid in the pinealectomized rats were studied in 30 and 45 days after operation. Immunohistochemical methods with the use of monoclonal antibodies to serotonin, melatonin,

tonin, calcitonin, insulin, glucagons, somatostation, immunoglobulin G (IgG) and proliferative cell nuclear antigen (PCNA) as well as the computer analysis of microscopical images were applied. In spleen in 30 days the number of Ig-positive cells was decreased, but the increase of proliferative activity of lymphocytes (measured by PCNA index) was registered. On the contrary, in 45 days the hyperplasia of IgG-positive cells has been shown and mitotic index of lymphoblasts in lymphoid follicles was increased also. In 30 days the increase of number of serotonin- and melatonin-immunopositive EC-cells in stomach and duodenum as well as of calcitonin-immunoreactive C-cells in thyroid was registered. The number of insulin-producing B-cells as well as glucagon-producing A-cells in pancreas had no difference with control indices, but the moderate hyperplasia of somatostatin-immunopositive D-cells was obtained. In 45 days the number of serotonin- and melatonin-immunopositive EC-cells in stomach and duodenum was decreased, the number of thyroid C-cells were increased more than on 50% as compared with control group. The indices of pancreatic endocrine cells were similar to the number of cells on 30 day after pinealectomy. These results show that pinealectomy causes the different changes of neuroimmunoendocrine interactions in the organism. It is now possible to assume that extrapineal gastrointestinal melatonin plays a role of key paracrine signal molecule for the local co-ordination of intercellular relationships in the absence of pineal gland.

175. SUPEROXIDEDISMUTASE, CATALASE AND V_{CO_2} IN AGING *DROSOPHILA MELANOGASTER*

N.A. Utko, Kh.K. Muradian (*Institute of Gerontology of Ukraine AMS, Kiev; natautko@voliacable.com*)

There is a growing consensus in understanding dualistic role of reactive oxygen species (ROS) in aging. The well-known negative image of ROS, as highly reactive damaging agents, is subsiding more realistic recognition of ROS as necessary intermediates in redox-dependent defense and regulatory pathways. Both, elevated or declined levels of ROS could have unfavorable consequences. Only an optimal balance between ROS generation and quenching could ensure normal functioning and longevity. Recognition of such paradigm makes it clear that adequate research efforts should be undertaken to reveal key factors and mode of optimal relations between pro- and antioxidant (AO) systems. *Objective:* The main chain of ROS generation and scavenging ($O_2 \rightarrow O_2^{\cdot-} \rightarrow H_2O_2 \rightarrow H_2O + O_2$) enzymatically regulated in *D.melanogaster* by SOD and catalase was studied. *Material and Methods:* Rate of carbon dioxide production (V_{CO_2}) and activity of SOD and catalase were determined individually in 115 young (5–15 days) and 74 old (35–55 days) male imagoes of *D.melanogaster*. *Results:* Mean value of V_{CO_2} and SOD activity did not significantly change in aging. Coefficient of variation (CV) of V_{CO_2} also did not change, whereas SOD CV decreased in aging. Catalase activity was the only studied index which mean value decreased and CV increased in old imagoes. Moreover, catalase exhibited positive correlation with V_{CO_2} in young ($P < 0.05$) but not old flies. In contrast, SOD positively correlated with V_{CO_2} in both age groups ($P < 0.05$). Highly significant positive correlation was found between SOD and catalase in young imagoes ($P < 0.0000002$), assuming that coordinated action

of SOD and catalase, «the first line of AO defense,» could be critical for flies viability. Correlation between SOD and catalase became practically zero in old flies ($P > 0.87$). However, even in young *D.melanogaster* a subpopulation of potential «short-livers» (around 10 %) was found, which was characterized by higher but uncoordinated values of SOD and catalase. Comparison of young and old flies SOD and catalase distributions clearly demonstrated that representatives of this subpopulation were practically absent in old animals. *Conclusions:* Catalase is the only enzyme responsible for regulation of H_2O_2 concentration in *D.melanogaster*, could be the weakest link in old flies AO defense. In aging, its mean value decreases, CV increases, correlation with SOD and V_{CO_2} disappears. It may also explain why in evolutionary advanced vertebrate species H_2O_2 level is additionally regulated by another enzyme with analogous function, glutathione-peroxidase.

176. DISTRIBUTION PATTERN AND CORRELATIVE RELATIONS BETWEEN BODY GASEOUS EXCHANGE, TEMPERATURE, THERMOCONDUCTIVITY AND pH IN AGING MICE

N.A. Utko¹, I.N. Pishel¹, V.V. Bezrukov¹, V.E. Fraifeld², Kh.K. Muradian¹ (¹*Institute of Gerontology of Ukraine AMS, Kiev;* ²*Ben Gurion University of the Negev, Beer Sheva, Israel; natautko@voliacable.com*)

Body temperature (BT), metabolic rate, thermoconductivity (TC) and pH are often considered as basic indices having key role in determination of aging pattern and life span. However, little is known about quantitative and populational aspects of their relations and possible «common denominator» of their age-changes. *Objective:* The present investigation was undertaken in order to evaluate distribution peculiarities, correlative relations and hierarchic clustering of the mentioned indices in populations of young and old mammals. *Material and Methods:* Body mass, BT, rates of oxygen consumption (Vo_2) and carbon dioxide production (V_{CO_2}), respiratory quotient (RQ), TC, as well as the liver absolute, relative, wet and dry masses, protein content (PC) and pH were determined in 62 young (3–5 months) and 58 old (23–26 months) male C57Bl/6 mice. *Results and Conclusions:* Mean values of BT, Vo_2 , V_{CO_2} and TC significantly decreased, pH and RQ did not change, whereas body mass and the liver absolute or relative masses and PC increased in aging. With aging, the coefficient of variation significantly increased only for BT. Coefficients of skewness and kurtosis, as well as specific tests of Kolmogorov-Smirnov, Lillifors, χ^2 , and Shapiro-Wilk did not decline the hypotheses of distribution normality for Vo_2 , V_{CO_2} , RQ, CT and pH. Normal distribution was also typical for BT of old, but not young animals. As it could be expected, there was highly significant positive correlation between Vo_2 and V_{CO_2} in both age-groups ($P < 0.00000001$). Positive correlations were also found between Vo_2 and BT in young ($P < 0.01$) and old resting mice ($P < 0.00001$). The higher correlation between Vo_2 and BT in old animals could be explained by a larger subpopulation of old mice with simultaneously lower Vo_2 and BT. For instance, around 40 % of old mice had BT lower 37 °C and Vo_2 lower 70 ml·g⁻¹·min⁻¹, whereas the analogous subpopulation of young animals did not exceed 9 %. Correlations of Vo_2 , V_{CO_2} , BT and CT with liver pH were negative in both age-groups ($P < 0.05$). Apparently, higher rates of oxidative processes were associated with accumulation of partly oxidized products of acidic nature, thus, decreasing pH. Partial correlation analysis revealed that

controlling for BT and some other indices could affect correlations between other studied variables. Tree-clustering also indicated BT as a key regulatory target affecting other variables. No significant correlations were found between the studied physiological variables and activity of the liver key antioxidant enzymes — SOD, catalase, glutathione-peroxidase, glutathione-reductase, glutathione-transferase and xantine-oxidase.

177. GEROPROTECTIVE PEPTIDES OF THE PINEAL GLAND

B.V. Vaskovsky (*Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry of RAS, Moscow, Russia; taek@ibch.ru*)

Researchers of the St. Petersburg Institute of Bioregulation and Gerontology RAMS V.Kh. Khavinson and V.N. Anisimov have been studying for many years the effectiveness of pineal gland preparation (Epithalamin) in human aging. They showed the ability of Epithalamin to normalize the basic functions of the human organism, i.e. to improve the indices of cardiovascular, endocrine, immune and nervous systems, homeostasis and metabolism. Experimental data indicated that most of these pharmacological properties are connected with the action of peptide bioregulators. That was later demonstrated by long-term investigations of the geroprotective properties of Epitalon (Ala-Glu-Asp-Gly) that proved out to be even more beneficial than melatonin and other known pineal hormones. These results stimulated us to investigate individual peptide components of Epithalamin. We developed the fractionation scheme of this preparation that allowed us to isolate peptides in quantities sufficient for primary structure determination by the modern means of peptide chemistry (N-terminal and amino acid analysis, automatic sequencing and mass-spectrometry). A number of new pineal peptides were sequenced and synthesized, the study of their geroprotective effects is in progress now.

178. SOLID-STATE ISOTOPIC EXCHANGE OF HYDROGEN IN PROTEINS AND PEPTIDES AND ITS APPLICATION FOR PHARMACOLOGY OF GEROPROTECTORS

B.V. Vaskovsky¹, Yu.A. Zolotarev² (*¹Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry of RAS, Moscow; ²Institute of Molecular Genetics of RAS, Moscow, Russia; taek@ibch.ru*)

We developed new analytical methods based on high temperature solid phase catalytic isotope exchange reaction (HSCIE) that can be used in peptide pharmacology. Biologically active peptides evenly labeled with tritium were used for studying the in vitro and in vivo biodegradation of the peptides. The distribution of the isotope label among all amino acid residues of these peptides allows the simultaneous determination of practically all possible products of their enzymatic hydrolysis. The procedure includes extraction of tritium-labeled peptides from organism tissues and chromatographic isolation of individual labeled peptides from the mixture of degradation products. The concentrations of a peptide under study and the products of its biodegradation were calculated from the results of liquid scintillation counting. The HSCIE reaction allows also the production of evenly deuterium labelled proteins and peptides, and their application makes it possible to create a qualitative mass spectrometry method for peptide analysis. Introduction of definite amounts of these deuterium-labeled proteins into biological objects, prior to isolation, separation and trypsinolysis, will generate quantitative in-

formation concerning the composition of the object. These approaches were successfully used for studying the peptide geroprotectors livagen and epitalon, that were introduced in clinical practice by Khavinson V.Kh. and coworkers [1]. *Reference:* [1] Kost N.V., Sokolov O.Iu., Gabaeva M.V., Zolotarev Iu.A., Malinin V.V., Khavinson V.Kh., *Izv Akad Nauk Ser Biol.* 2003,4,427-9 (Russian).

179. CYSTEINE PROTEASES CATHEPSINS B AND L AND ASPARTIC PROTEASE CATHEPSIN D IN LIVER OF AGEING WISTAR AND OXYS RATS

A.A. Venediktova¹, O.V. Falameeva², N.G. Kolosova³, M.A. Sadovoj², T.A. Korolenko¹ (*¹Institute of Physiology of RAMS, Novosibirsk; ²State Scientific Institute of Traumatology, Novosibirsk; ³Institute of Cytology and Genetics of RAS, Novosibirsk, Russia; venediktovaa@bk.ru*)

Cathepsins B, L, and D have been shown in many types of cells, predominantly in lysosomes and endosomes of macrophages and hepatocytes. These enzymes play the important role in protein degradation, cell proliferation, activation of lysosomal cysteine and aspartic proteases, antigen processing (Wiederanders, 2005). Ageing process in liver cells has not been studied enough, especially in models of ageing animals. OXYS rats (Institute of Cytology and Genetics RAS, Novosibirsk) was shown to be characterized by accelerated ageing process without significant changes of protein synthesis in liver cells until 12 months. The aim: to compare cysteine and aspartic proteases in ageing Wistar and OXYS rats with accelerated process of senility. Cathepsin B and L activity was against Z-Phe-Arg-MCA and Z-Arg-Arg-MCA with specific inhibitor for cathepsin B — CA 074 (Barrett and Kirschke, 1981), cathepsin D — against azocasein as a substrate (Wiederanders, Oelke, 1982). Cathepsin B activity in liver of Wistar rats was shown to steadily decrease with age (3, 12 and 18 months), while cathepsin L activity increase in the same animals. Liver cathepsin D activity in Wistar rats increased at 12th months and decreased up to the lower level of 3 months rats at 18th month old. Decreased cathepsin B activity was revealed in OXYS rats (3 >12,18 months), without changes of cathepsin L activity. Cathepsin D activity was decreased at 12th months and increased at 18th months (as compare to 3 months old animals). In Wistar rats of 3 month old negative correlation was shown between total liver protein concentration and cathepsin B activity, indicating on the role of this enzyme in protein degradation in this period. Positive correlation between cathepsin B and L and between cathepsin B and cathepsin D in Wistar rats of 3 months old was revealed and at 18 months — positive correlation between cathepsin B and cathepsin D. According to changes of cathepsin D activity the ageing process was registered earlier in OXYS as compare to Wistar rats. One can conclude that ageing process was characterized by earlier changes of cysteine and aspartic proteases in OXYS as compare to Wistar rats.

180. INFLUENCE OF PREPARATION OF DELTA-SLEEP INDUCING PEPTIDE «DELARAN» ON AGE-RELATED CHANGES OF SOME AGING BIOMARKERS AND BEHAVIORAL REACTIONS IN MICE

V.B. Voytenkov, I.G. Popovich (*N.N. Petrov Research Institute of Oncology, St. Petersburg, Russia; vlad203@inbox.ru*)

The aim of our study was to evaluate the influence of preparation of delta-sleep inducing peptide «Deltaran» on

age-related changes of weight, food and water consumption, motion activity, muscle strength and fatigability in SHR mice. Deltaran was injected subcutaneously every month in 5-days courses in dosage 2,5 mkg/mice to 40 female SHR mice of testing group. 40 female mice of control group received the placebo. Deltaran showed no significant influence on age-related weight increase, food and water consumption. The drug postpones age-related decrease of motion activity in the open field test, and prevented weakening of freezing behavior, that was evaluated according to the amount of upright postures. At the same time the grumming reaction in testing group was lesser than that in the control group. In «hanging on a string» test the lesser age-related loss of muscle strength in testing group was shown. Deltaran group also was characterized by lesser fatigability. These results support the idea that Deltaran slows down age-related changes of motion activity, decreases of muscle strength and increases fatigability, which correspondents to data on its geroprotective effects evaluated in recent mice studies.

181. PHOTON PROGRAM OF AGEING

V.V. Volkov (International Institute of Immortality Ltd.; vvlkv@doctorvolkov.ru)

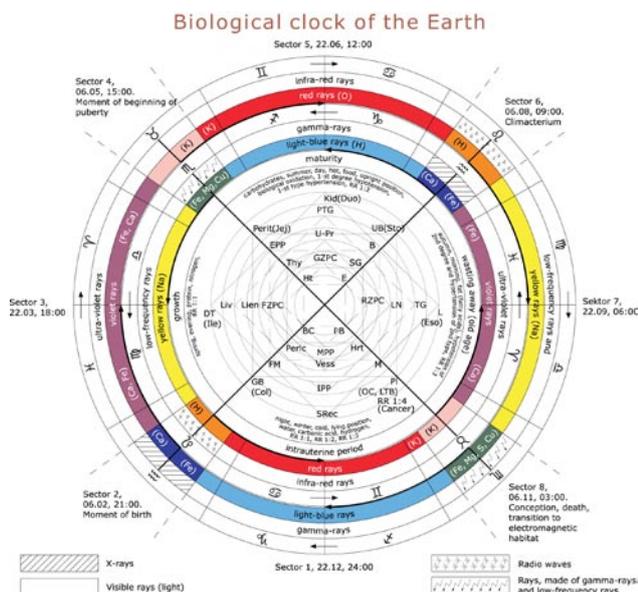


Fig. 1.

The program of biological ageing is represented by the Biological Clock of the Earth (the Bioclock), see fig.1 (author's discovery, 1992; Patent of Russia № 2123198, February, 4nd, 1997). The Biological Clock of the Earth is the projection of human ontogenesis onto the electromagnetic oscillation spectrum. The Bioclock is the complete algorithm of respiratory and non-respiratory pigments synthesis during lifetime. The Bioclock is the biorhythm of a human. The direct cause of death is the competitive struggle between the biosynthesis of the pink heme (sector 4 of Bioclock) and the production of the green biliverdin (Sector 8 of Bioclock) in a cell. When the biliverdin wins the struggle, a human dies. The direct cause of ageing is the consumption of water of an organism for eliminating

the biliverdin in order to save life. A cell uses water of cytoplasm for proton H^+ production. Proton reduces biliverdin into bilirubin. Bilirubin leaves from the cell into the blood. The liver excretes the bilirubin with the bile in the intestine, whence it, in the form of urobilinogen, is removed from an organism as a part of the feces. An organism consumes water to remove biliverdin approximately as follows: a newborn boy has 77–86.8% of the water of the body weight, a young mature man — 61%, and an old man, eighty one years old — only 49.8%. The speed of water consumption for protons production determines the pace of ageing of an organism or the length of its life. The maximum duration of human life as determined by photon program of ageing is 280 years. Sector 4 (heme) and sector 8 (biliverdin) constitute the scale of death in the Bioclock. Sector 2 (carbonic acid and bilicyanin) and sector 6 (glucuronic acid and bilirubin) constitute the scale of life in the Bioclock. The scales of life and death are important for photon-proton technology of human life prolongation. For more details visit www.doctorvolkov.ru. The objective of photon-proton technology of achieving healthy longevity is to get a human into the biorhythm of the Bioclock by means already known to the author. The primary aim of the longevity technology is to give the visible Light a way to a human organism.

182. DYNAMICS OF CHROMOSOME ABERRATIONS IN HUMAN LYMPHOCYTES UNDER NATURAL AND RADIATION INDUCED AGING

I.E. Vorobtsova, A.V. Semyonov, N.E. Lubimova (Central Research Institute of Roentgenology and Radiology, St. Petersburg, Russia; radgen@sertolovo.ru)

Accumulation of genetic damages in cells is regarded as one of the manifestations and probably one of the reasons of natural aging. Ionizing radiation is known to accelerate the aging process. On the cultured human lymphocytes we have studied an age-response of stable chromosome aberrations (ChA), detected by FISH, unstable ChA and *in vitro* chromosomal radiosensitivity in control people and those exposed to accidental irradiation. Control group consisted of 145 persons (3–85 years old), exposed one — of 342 persons (2–76 years old). The frequency of stable ChA increases as exponential function of donor age in both populations studied, being higher in exposed group as compared to control one. It means that exposed people of the same with normal donor's calendar age are biologically older. The control level of unstable ChA is not changed up to 40 years, and then tends to increase. Exposed group is characterized by linear age increase of this parameter. The chromosomal sensitivity of lymphocytes to irradiation *in vitro* at the dose 1.5 Gy of γ -rays Cs^{137} reveals the positive correlation with donor age in control group and negative — in exposed one. Low dose radiation in past changes the control pattern of age dependency of *in vitro* chromosomal radiosensitivity (genome stability) due to opposite response of lymphocytes to irradiation in children and adults: lymphocytes of exposed children are more sensitive to *in vitro* irradiation, lymphocytes of exposed adults — more resistant as compared to corresponding controls.

183. VARIABILITY OF BLOOD ANTIOXIDANT STATUS DURING ORAL GLUCOSE TOLERANCE TEST IN OBESE ELDERLY PERSONS

E. Wysocka¹, S. Dziegielewska¹, M. Cymerys², L. Torlinski¹, A. Jakrzewska-Sawinska³ (¹Department of Chemistry and Clinical Biochemistry, Poznan University of Medical Sciences, Poznan, Poland; ²Department of Internal Medicine and Metabolic Disorders, Poznan University of Medical Sciences, Poznan, Poland; ³Home Hospice for Adults of Association of Volunteers of Palliative Care in Wielkopolska, Poznan, Poland; syladzie@hotmail.com)

Background: The oxidative stress, proposed to join the metabolic events preceding type 2 diabetes and cardiovascular disease, might play an important role in the development of glucose intolerance among elderly. **Objective:** the estimation of some blood antioxidant markers in overweight and obese middle aged and elderly patients during oral glucose tolerance test. **Methods:** 120 increased body mass index (BMI \geq 25 kg/m², WHO criteria) white Europeans without any acute disease or severe chronic disorder, basing on a complete physical examination were qualified for oral glucose tolerance test (OGTT). They were measured arterial blood pressure (systolic, SBP and diastolic, DBP), waist and % of body fat (BodyStat equipment). After excluding newly diagnosed type 2 diabetics the finally 49 individuals not using any special diet or any supplementation were studied. They were divide into: middle aged, MA group (n=25; 40–64 yrs) and elderly, ELD group (n=24; \geq 65 yrs). The blood from subjects was collected twice: fasting sample at 0 minute of OGTT (0') and sample at 120 minute of the test (120'). The concentrations of plasma glucose, G (bioMérieux, UV-160A Shimadzu), Total Antioxidant Status, TAS (Randox, Statfax™ 1904 Plus) and activity of erythrocyte superoxide dismutase, SOD (Randox, Statfax™ 1904 Plus) were determine twice (0' and 120'). Plasma total cholesterol, T-C, HDL-cholesterol, HDL-C, triglycerides, TG and LDL-cholesterol, LDL-C (bioMérieux, UV-160A Shimadzu) concentrations were assayed in the fasting sample only. For all parameters determined during OGTT, a difference (120' minus 0') value, D was calculated. Statistical analysis was performed using STATISTICA 6.0 for Windows. **Results:** 1) There were no differences according to BMI, blood pressure, glucose levels and lipids between the studied groups. 2) The ELD persons demonstrated decreased SOD 0' (p=0,03) and SOD 120' (p=0,000005) comparing with MA persons. 3) During OGTT in the MA group positive DSOD and DTAS were observed comparing with negative DSOD and DTAS in the ELD group (p=0,019 and p=0,005 respectively). 4) The number of correlations between «decreasing during OGTT» antioxidant factors and SBP, DBP, glycemia, lipid parameters were found in ELD persons only. **Conclusions:** These preliminary results suggest that non-diabetic elderly persons may consume blood antioxidant status more than middle aged individuals to avoid diabetic hyperglycemia. Different metabolic factors could be involved this situation.

184. LOW TESTOSTERONE LEVEL OF MIDDLE-AGED JAPANESE MEN; POSSIBLE ETIOLOGY OF LATE-ONSET HYPOGONADISM

M. Yasuda, K. Furuya, T. Yoshii, H. Ide, S. Horie (Teikyo University; myasuda@med.teikyo-u.ac.jp)

Objectives: Age-related steep declines in free testosterone, which cause late-onset hypogonadism (LOH), are frequently reported. Physical, psychological and metabolic

stressors increase serum cortisol levels directly inhibiting the production of testosterone on Leydig cells. LOH onsets mostly in middle-aged men, many of whom complain of psychological symptoms including depressive mood and anxiety. Japan is now facing rapidly increasing suicide in middle-aged men mostly due to depression that may be associated with LOH. Salivary testosterone is a useful non-invasive and repeatable method of assessing levels of free testosterone because testosterone is not bound with protein in saliva. The current study investigated circadian variations of free salivary testosterone levels in three cohorts: 20's–30's, 40's–50's, 60's+. **Methods:** Sixty-four healthy subjects in these cohorts were recruited from white-collar salaried men. Also included were 17 patients in their 60's–70's hospitalized for prostate biopsy who were found to have no cancer. They were asked about their weight, height, and smoking habit. The SF-36 v2 was used to measure their quality of life. Saliva samples were collected at two-hour intervals between 9:00 am and 9:00 pm. Free salivary testosterone levels were determined by Enzyme-Linked Immunosorbent Assay (Demeditec Diagnostics, Germany). **Results:** There were no significant differences in BMI, smoking habit, and the quality of life based on SF-36 among three groups. Post hoc analysis showed that there were significantly lower testosterone levels in the 40's–50's cohort than in the 20's–30's cohort at all time test-points except for 7:00 pm. At only two time test-points were testosterone levels lower in the 60's+ cohort than in the 20's–30's cohort. There were no significant differences in mean testosterone levels at any time test-points between the two older cohorts (40's–50's and 60's+). Repeated measurements of ANOVA showed significant main effects of time in the 20's–30's cohort, and in the 40's–50's cohort, confirming the circadian pattern. There was no main effect of time in the 60's+ cohort, confirming the lack of the circadian pattern. **Conclusion:** Middle-aged Japanese salaried men had the lowest testosterone levels. Aside from aging, environmental stressors such as overwork could have a significant impact on the steep decline of free testosterone levels in later life, affecting physical and mental health. The decline of testosterone levels in aging men is a complex issue warranting holistic study, including the social and environmental factors that cause stress in Japanese middle-aged men.

185. INDUCTION OF RADIATION ADAPTIVE RESPONSE IN BLOOD LYMPHOCYTES OF ELDERLY PERSONS SUFFERING FROM THE ALLERGIC SYNDROME OF THE SECONDARY IMMUNE DEFICIENCY

S.I. Zaichkina¹, O.M. Rozanova¹, N.I. Kosyakova², E.Yu. Niyazova¹, G.F. Aptikaeva¹, A.Kh. Akhmadieva¹, E.N. Smirnova¹, O.A. Vakhrusheva¹ (¹Institute of Theoretical and Experimental Biophysics of RAS, Pushchino, Moscow region; ²Hospital of the Pushchino Research Center, Pushchino, Moscow region, Russia; rozanova@mail.ru)

In last few years, several effects inherent in low-dose radiation have been described. Among these is the phenomenon of radiation-induced adaptive response (AR). This phenomenon consists essentially in the fact that preliminary irradiation with low doses leads to an increase in the resistance of an object to the subsequent exposure to radiation in high challenging doses. AR is a form of protection of cells against the mutagenic and lethal effects of oxidative stress induced not only by ionizing radiation and

chemical agents but also by various somatic diseases. The goal of this work was to study the capacity for adaptive response in a culture of peripheral blood lymphocytes of patients with the allergic syndrome of the secondary immune deficiency.

Twelve women with the allergic syndrome of the secondary immune deficiency aged from 49 to 69 were examined. Eight women at the age of 23–40, which were apparently healthy and had no harmful habits, served as a control. The induction of AR was studied *in vitro* in a culture of peripheral blood lymphocytes. Samples of total blood were irradiated on a RUP X-ray device according to the following scheme of AR: preliminary irradiation with a dose of 10 cGy followed 5 h later by irradiation with a challenging dose of 2 Gy. Then cells were cultivated, and cytogenetic samples were prepared by the standard method. The frequency of micronuclei in cytochalasin-blocked binuclear lymphocytes served as a criterion of damage. It was found that (1) the average level of spontaneous cytogenetic lesions in the group of sick persons is 3.5 times higher than in the control group; (2) there is a clear correlation between the spontaneous and radiation-induced level of micronuclei in the groups of both sick and healthy donors; (3) AR was induced in all women examined, with the mean magnitude of AR in both groups being almost the same. However, it should be emphasized that the individual variability of the magnitude of AR in the group of sick persons was significantly greater and correlated with that of the spontaneous level of cytogenetic lesions.

186. NEW BIOLOGICAL MARKER OF AGEING

V.A. Zuev (*Gamaleya Institute for Epidemiology & Microbiology of RAMS, Moscow, Russia; info@riem.ru*)

A factor causing active proliferation of glia cells in the culture is accumulating in the brain and the blood of aged mice, starting from the age of 10 months. The causal role of this cytoproliferative factor in ageing process is confirmed by results of accelerated artificial ageing of young mice. Injection of highly purified brain extracts of 2-year-old mice to 1,5-month-old animals results in quick blood accumulation of mentioned factor (up to the level of 2-year-old mice) in then, already, by the age of 5 months, and in development of ageing signs (sluggishness of movements, slow response to food and grey hairs). Moreover, morphometric analysis of brain of these 5-months-old animals enabled to discover cardinal ageing signs in them — manifested gliosis and pronounced death of neurons. Therefore, we identified discovered cytoproliferative factor as «ageing factor». It is noted for species specificity of action, low molecular weight (about 10 kD), resistance to higher temperature, trypsin and UV, but high sensitivity to proteinase K. Similar factor is found in blood of individuals starting from their age 25 and subsequent growth of its concentration with age. We suppose that operating mechanism of ageing factor is primarily associated with gliosis development in brain tissue. It causes disturbance of astrocyte connection with brain capillary, on one part, and astrocyte connection with neuron, on another part, in «brain capillary-astrocyte-neuron» chain. This results in death of neurons, causing disturbance in brain operation as a whole. A method of quantitative determination of accumulation dynamic of ageing factor (cytoproliferative activity) in mammals blood was developed, including the individual.

CLINICAL GERONTOLOGY AND GERIATRICS

187. THE VOLUME OF THE TEMPOROPOLAR CORTEX IS ASSOCIATED WITH PSYCHOLOGICAL AND BEHAVIORAL SYMPTOMS IN PATIENTS WITH ALZHEIMER'S DISEASE AND MILD COGNITIVE IMPAIRMENT

P. Abizanda Soler¹, E. Martin Sebastia¹, A. Insausti Serrano², F. Mansilla Legorburo¹, L. Maicas Martinez¹, R. Insausti Serrano², B. Lopez Ramos¹ (¹Hospital General Universitario de Albacete, Albacete, Spain; ²Universidad Castilla la Mancha; emartins@sescam.jccm.es)

Objective: To analyze if the volume of the medial temporal lobe cortex is related to psychological and conductuales symptoms in patients with Alzheimer's Disease (AD) or Mild Cognitive Impairment (MCI). **Methods:** Cross-sectional study on 23 subjects (17 women), mean age 74.2. 14 AD (NINCDS/ADRD), 9 MCI (Petersen). Sociodemographics data, MMSE, GDS Yesavage and NPI were collected. MRI acquisition was done selecting coronal slices. On them anatomical limits of the following medial temporal cortex were marked: to temporopolar (TPC), perirhinal (PRC), entorhinal (ERC) and posterior parahippocampal (PPC) right (r) and left (l). The standardized volume (with intracranial volume) of each region of interest was calculated with the Cavalieri method. Univariate analysis by means of t-Student and multivariate by means of linear regression model adjusted by age, sex, years of education, MMSE and group study. **Results:** Age MCI 73 and AD 75. GDS MCI 4,1 and AD 2,9. MMSE MCI 25 and AD 18,4. NPI in MCI 7,6 (DE 2,1) and in AD 7,6 (DE 2,2). Volumes (mm³) in subject with MCI and AD were respectively: TPCr (2,35-2,34), TPCl (2,29-2,18), PRCr (2,82-2,85), PRCl (2,98-2,97), ERCr (1,17-1,00), ERCI (1,10-0,90), PPCr (0,77-0,76), PPCI (0,84-0,90). Single TPCr ($r=-0,499$; $p<0,05$) and TPCl ($r=-0,528$; $p<0,01$) correlated with NPI, but not with GDS or Yesavage. TPCr correlated well with delusions ($r=-0,499$; $p<0,05$), agitation ($r=-0,484$; $p<0,05$) and apathy ($r=-0,524$; $p<0,01$) and TPCl with delusions ($r=-0,554$; $p<0,01$), agitation ($r=-0,391$; $p=0,06$) and irritability ($r=-0,523$; $p<0,01$). The NPI quartiles of TPCr were 15-5,8-9,3-1,3 ($p<0,01$) with significant differences among the first and last quartile ($p<0,01$). The NPI quartiles of TPCl were 15,6-5,7-8-2,3 ($p<0,05$) also with differences among the first and last quartile ($p<0,01$). TPCr was associated with punctuations in NPI ($B=-7,21$. 95%IC -13,02 to -1,40; $p<0,05$. $r^2=0,431$) as was TPCl ($B=-8,95$. 95%IC -14,89 to -3,01; $p<0,01$. $R^2=0,502$) adjusted by age, sex, years education, MCI / AD and MMSE. **Conclusions:** Greater volume of temporopolar cortex are associated with psychological and behavioral symptoms in patient with AD and MCI.

188. RESULTS OF A NEW ANTEGRADE NAIL SYSTEM FOR UNSTABLE PROXIMAL HUMERAL FRACTURES IN GERIATRIC PATIENTS

D. Altmann (Franziskus Krankenhaus Linz / Rhein; fam-alt@t-online.de)

Operative treatment of unstable proximal humeral fractures in elderly patients with the new antegrade nail system (Targon PH). The humeral head fractures in elderly patients represents still a problem for trauma surgeons. Treating unstable proximal humeral fractures with a short antegrade nail and interlocking screws which fix the head fragments with angular and gliding stability (the Targon PH nail) was studied. The results in 84 patients in the last three years with a mean age of 74 years (62-91) were analyzed. After a closed reduction (joystick) antegrade nailing was performed using a delta split and a small incision of the rotator cuff. The tuberosities were fixed with screws through the threaded holes at the proximal end off the nail leading to a high fragment stability. Follow up was 7-36 months. There were 16 two part, 44 three part, and 24 four part fractures of the humeral head treated. Clinical examination was performed in 68 cases, 6 Patienten were questioned by phone. 4 patients died. The side related Constant Murley Score was 78 ± 15 . All but one fractures healed. Activities of daily were possible in every case, because of stable fixation early rehabilitation after two days p.o. immobilization in a gilchrist bandage was possible and led to good functional results. In comparison to common implants, the new antegrade intramedullary nail allowed a stable osteosynthesis in unstable proximal humeral fractures in old and very old patients. This study proves the highly beneficial capacity of this fixation system.

189. ACUTE CORONARY DISEASE AND COMORBIDITY IN HYPERTENSIVE ELDERLY SUBJECTS

F.D. Amico (Dept. of Geriatrics Patti Hospital Messina Italy; ferdinando.damico@tiscalinet.it)

Background/Aim: Aim of this study was to evaluate the characteristics of acute coronary disease and the related prevalence of comorbidity in elderly subjects with hypertension. **Design and methods:** 57 elderly subjects were included (25 males, 32 females, aged 75 ± 8 years). They were all hospitalised in our Department of Geriatrics on a diagnosis of acute coronary disease. AMI subjects were hospitalised in our Subintensive Care Unit; were continually under ecg and underwent continuous measurement of blood pressure, respiratory frequency and peripheral oxygen saturation. The study included: 1) Myocardial markers; 2) Glycemia; 3) Microalbuminuria; 4) Echocardiogram;

5) Cholesterolemia; 6) Functional evaluation (BADL and IADL), cognitive assessment (MMSE) and comorbidity (CIRS). *Results:* In 45 patients we determined hypertension (78.9%). 34 had a left ventricular hypertrophy (66.6%). 26 subjects also had diabetes mellitus (45.6%). 28 patients had microalbuminuria (49.1%). Q wave AMI was determined in 16 hypertensive elderly patients (35.5%) and 11 of them (68.7%) showed left ventricular hypertrophy. Non-Q wave AMI was detected in 29 hypertensive patients (64.4%). 21 of them had left ventricular hypertrophy (72.4%). A combination of AMI and diabetes mellitus was detected in 9 hypertensive patients (20.0%) who had left ventricular hypertrophy and microalbuminuria as well. 8 diabetic hypertensive subjects with non-Q wave AMI (27.5%) were detected. They showed a combined microalbuminuria and left ventricular hypertrophy too. Through CIRS we also detected connections with stroke, Parkinson disease, cardiovascular disease and depression. We noticed how subjects with comorbidity associated to several cardiovascular risk factors had a lower BADL and IADL score compared to those with a minor incidence of comorbidity and more cardiovascular risk factors. *Conclusion:* This study showed that in elderly hypertensive patients left ventricular hypertrophy is related to a higher non-Q wave AMI incidence and more so if it is associated to diabetes mellitus, microalbuminuria and a higher functional state damage in subjects with major comorbidity associated to several cardiovascular risk factors.

190. AMINOFF SUFFERING SYNDROME A NEW PATHOLOGICAL ENTITY IN END-STAGE DEMENTIA

B.Z. Aminoff (Sheba Medical Center, Tel-Hashomer, 52621; Human Suffering and Satisfaction Research Center, El-Ad, Israel; bechorz@yahoo.com)

Context: Patient suffering is a pathological syndrome traditionally viewed as a state encompassing psychological distress, spiritual concerns and various aspects of physical pain. There is insufficient clinical evidence for suffering in dying dementia patients and key criterions of irreversible medical condition, which may lead to inappropriate evaluation and insufficient palliative treatment. *Objective:* To evaluate the suffering of terminal dementia patients (MMSE=0/30, FIM=18/126) over time, from admission to a geriatric ward and on during six months follow up. *Patients and methods:* A prospective study of consecutive end-stage dementia patients, admitted to a general geriatric department of a tertiary hospital. Patients were evaluated weekly by the Mini Suffering State Examination scale (MSSE) which developed by us and presented in world and regional congresses in Berlin (1999), Jerusalem (2000), Vancouver (2001), Stockholm (2002), Tokyo (2003), Las-Vegas (2004), Rio-de-Janeiro (2005), Madrid (2006), the Committee for Labor, Social Services and Health of the Israeli Knesset (2005) and published in Journal Archives of Gerontology and Geriatrics (2004, 38, 2, 123-130) and Age and Ageing (2006, 35, 6, 597-601). *Results:* Two hundreds patients have been studied. During six months follow up survived 88 (44%) and died 112 (56%) of end stage dementia (ESD) patients whom admitted to geriatric department. The MSSE scale score of six months survived ESD patients was low with MSSE=3.41±2.02 at day of admission and decreased during six months follow up to MSSE=2.77±1.90, P=0.003. In contrary, the MSSE scale

score of died ESD patients was high with MSSE=4.97±2.46 at day of admission to geriatric department and increased until last day of life until MSSE=5.93±2.39, with significant difference P≤0.0001. *Conclusion:* «Aminoff Suffering syndrome» in terminal dementia is the new pathological and geriatric symptomatology and entity which characterized by high MSSE scale score, irreversible and intractable aggravation of suffering and medical condition until death and less than six months survival. «Aminoff Suffering syndrome» could be key criterion for enrolling ESD patients for palliative treatment and new alternative setting approaches as Suffering Relief Units should be developed for end stage and dying dementia patients being in Aminoff Suffering syndrome.

191. THE NON-INVASIVE-VENTILATION (NIV) IN ELDERLY PATIENTS HOSPITALIZED FOR ACUTE RESPIRATORY FAILURE

*M.S. Amor Andres*¹, *M. Mareque*¹, *M.A. Carbonell*¹, *R. Daimiel*¹, *M.J. Led*¹, *C.M. Martunez*¹, *J.E. Rodriguez*¹, *C. Grau*², *S. Carmona*³, *M.A. De la Torre*¹ (¹Hospital Virgen del Valle; ²Hospital Virgen de la Salud; ³Hospital Fuenfria; msamor@sescam.jccm.es)

Introduction: The elderly patients have a risk increased of developing respiratory failure due to presence of chronic obstructive pulmonary disease (COPD), cardiac failure, nutritional deficiencies and co-morbidity. Many studies have shown NIV decreases the need for endotracheal intubation, improve quality life and diminishes the mortality. *Objectives:* To present the effects of NIV in the management of acute respiratory failure of the elderly patients. *Methods:* A prospective study of patients aged 75 years old or more admitted between January and December 2006 with acute hypercapnic respiratory failure into geriatric hospital of Toledo, Spain. These patients were managed in a unit of taken care special by continue physiological monitoring controlled by trained staff. The inclusion criteria were: Acidosis with pH <7.35 and hypercapnia paCO₂: >45 mmHg, respiratory rate >22 breaths per minute. Before initiating the NIV conventional treatment was restored. We included as much acute exacerbation of COPD as cardiac failure. The exclusion criteria were impaired consciousness, cardiovascular instability, respiratory arrest, craniofacial trauma, moderate-serious cognitive impaired and the abundant secretions. We used «Respironics ST-D BIPAP» with nasal masks or full face. We collected sociodemographic data, mortality and stay in hospital, complications, exacerbation cause, co-morbidity by Charlson index, used time for NIV and mortality after the hospitable discharge. We check the vital signs and oximetry continuously and the arterial blood gas before NIV, at an at four hours after the NIV. For analysis we used the 12.0 version SPSS. *Results:* Were included twenty- two patients in the study. Their mean age was 83,27 years (ranging from 77 to 92 years), 68,2% were male and 54,5% ex-smokers. The comorbidity index were 3 (ranging from 1 to 6). Seventeen patients (77,3%) tolerated NIV, two failed to beginning and three after un hour. Mortality during the entrance was of 23,5%. Their mean time for NIV were 46,8 hours. The cause of acute hypercapnic respiratory failure was by respiratory infection in 33,3% and 14,3% by cardiac failure. *Conclusion:* Non invasive ventilation can be an alternative to endotracheal intubation in older patients with acute hypercapnic respiratory failure. For it, it's necessary staff

trained, a suitable location and a correct selection of the patients.

192. THE COORDINATION BETWEEN SPECIALIZED ATTENTION AND NURSING HOME IMPROVE THE MEDICAL CARE OF THE GERIATRIC PATIENT

M.S. Amor Andres¹, C. Pedreco Gutierrez², S. Arico Blasco², R. Torres Haba², E. Rodriguez Jimenez³, M.J. Led Dominguez³, M. Camacho Martinez³, S. Carmona⁴, C. Grau⁵ (¹Hospital Virgen del Valle, Toledo, Spain; ²Hospital General Granollers, Barcelona, Spain; ³Hospital Virgen del Valle; ⁴Hospital Fuenfria; ⁵Hospital Virgen de la Salud; msamor@sescam.jccm.es)

Introduction: In nursing home are the most fragile persons by their high comorbidity, dependency and cognitive impairment. These circumstances along with the limited material resources determines that these patients go frequently to the service of urgencies and admit the hospitals. **Objectives:** To improve the medical care to the group of institutionalized people by means of an interdisciplinary equipment specialized in geriatric of hospitable support. To avoid income in urgencies by means of the management of the sanitary resources. **Method:** During 2,5 months they were evaluated to 71 people proceeding from 27 residences who took our hospital as a center of reference. For it, before deriving to urgencies the patient they contacted with our equipment that managed the case by means of the valuation and integral geriatric attention and it valued the need to make analytical, radiological image and hospitable direct income. **Results:** The average age was of 83 years. They were presenting a high degree of dependency, with Barthel's index of 0/100 in 27% of the patients, 65% disorder of immediate memory and elevated drug consumption (7.8 drugs by patient). The main reason for consultation was geriatric syndrome in 28%, followed of respiratory pathology. Thanks to the program it was possible to avoid in more than 87% the need to come to urgencies by means of the utilization of alternative resources: 10% external consultations, 13% complementary tests (analytical and x-rays), 27% interconsultations in the hospital and 4% direct hospitable entrance. **Conclusions:** This study suggests that the management of the hospitable resources by means of equipment interdisciplinary of hospitable support, it is useful to avoid income in the service of urgencies of institutionalized patients. In addition it provided great satisfaction to the patients and sanitary people in charge of the residence.

193. QUALITY LIFE IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE

S. Amor, B. Cobos, C. Yera, R. Daimiel, C. Rosado, M.A. Carbonell, M.T. Fernandez, M.J. Led, M.A. De la Torre (Hospital Geriatrico Virgen del Valle de Toledo, Spain; mangelcarbonell@telefonica.net)

Chronic obstructive pulmonary disease (COPD) is a major cause of morbidity and mortality worldwide. Is a pathological process preventable and treatable characterized by a limitation to the air flow that is not completely reversible and includes the chronic bronchitis and the pulmonary emphysema. A part from smoking cessation, no approach or agent affects the rate of decline in lung function and progression of the disease. Especially in the later phase, COPD is a multicomponent disorder, and various integrated intervention strategies are needed as part of the

optimum management programme. A narrow follow-up of these patients with stable COPD can improve the function and quality of life of many patients, could reduce admissions to hospital, and has been suggested to improve survival. We present the results of an external consultation of follow-up of 75-year-old major patients with COPD in stadium II-III during the period 2005–2006. **Material and methods.** It is included 75-year-old major patients, with CODP diagnosis in stadium IIB-III, which have come in more than three occasions to the emergency room in the previous month or 2 or more admission in the past year. Their arterial blood gas measurement realized, chest film, complete blood count. One was explaining the methods of administration of the treatment and an analogical scale of well-being was passing. **Results.** There have been included 221 patients, all by CODP diagnosis from more of 10 years of evolution. The 80.8% of them are men and 19.2% women. The middle ages were of 82.6±4.3 years. The 75.8% of them were smokers and 86.3% lives in rural environment. The number of consultations was 3.37±1.3, and 39.6% had a hospital admission. The 93.2% of admission were or respiratory failure, cardiac failure or both. The average stay was 7.5 days with a mortality of 10.5%. An improvement demonstrated in the quality of life with an improvement in the punctuation of the subjective scale of well-being of 2 points. **Conclusions.** Though the control of the patients with CODP does not stop the progress of his disease without it they diminishes the episodes of exacerbations as well as the number of hospitable income expressed all this in an improvement in the quality of life of them.

194. PREVALENCE OF HYPOVITAMINOSIS D IN OLDER WOMEN AGED OVER 70 YEARS OLD

V. Andrei, C. Rusu, R. Parcalabu, M. Constantinescu (Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; tori_andrei@yahoo.com)

The metabolite with the highest concentration in human plasma is represented by 25-hydroxyvitamin D (25(OH)D). The large circulating 25(OH)D concentrations and its prolonged half-time make it an ideal parameter in view of evaluating D vitamin status in the organism. Many studies have pointed out that 25(OH)D is the best marker in this vitamin deficiencies, normal supplementing and intoxications with vitamin D. Vitamin D deficiency is associated with bone mass loss and micro-architectural damage leading to increase in bone frailty and risk for fracture. Hence, identifying people at risk is very important to clinical practice and public health. This work was carried out in view of establishing 25(OH)D serum values for the Romanian older women population and estimating D vitamin need. Serum 25(OH)D level was investigated in 30 women aged over 70 years old and with bone mineral density of -2.9±0.5 compared with a 30 women group aged between 50 and 70 years old to whom bone mineral density was corresponding to their age group -1.6±0.5 and a 21 healthy young women group aged between 20 and 45 years old selected according to the Senieur protocol. 25(OH)D serum determination was performed using immuno-enzymatic assays (commercial kits manufactured by Biomedica Groupe company) in which vitamin D binding protein measurement (EBPA) is based on competing for specific sites. The average 25(OH)D serum value for the group of older women with osteoporosis (12.57±5.5 nmol/L) was

significantly decreased ($p < 0.001$) compared with that in the young women group (44.47 ± 5.2 nmol/L as well as in comparison to that in the control group (26.57 ± 5.5 nmol/L) ($p < 0.001$). Taking into account hypovitaminosis D defined as 25 (OH)D < 30 nmol/L, we found out that its prevalence in the Romanian older women population was significantly increased 65.9% ($p < 0.05$) compared with 14.28% in the young women group. This study has pointed out a very increased hypovitaminosis D prevalence in the Romanian older women population and has suggested the necessity for the 25 (OH)D concentration determination in view of detecting and monitoring vitamin D deficiencies and maintenance of a healthy concentration between 78 and 100 nmol/L vitamin D.

195. PATHOMORPHOSIS OF ATHEROSCLEROSIS AND AGING

B.C.H. Anestiadis¹, I.T. Tsiple² (¹Centre For Pathobiology And Pathology of AS, Chisinau, Moldova; ²Emergency Hospital, Chisinau, Moldova; anes01@yahoo.com)

Pathomorphosis (PM) is a manifestation of an accentuated deviation in the general characteristic of the disease. It is necessary to distinguish clearly the therapeutic PM, caused by a treatment, which hides the pathomorphology, in a nosologic sense, up to a phenocopy. Usually PM includes general deviations of the morbidity and lethality in big groups of the population, under the influence of climatic, social, biologic, alimentary, xenobiotics, radioactive and other factors. The PM of the atherosclerosis (AT) presents a special interest, because the latter is the most frequent disease at the end of the XX century and the debut of XXI century. With its roots in the phylogenetic past, AT is connected with ontogenesis, aging, etc, being at the same time a problem of evolution and involution of the cardiovascular system. An adequate complex of micro- and macroscopical techniques was used for a study of atherosclerosis in 2000 patients from 20 to 90 years (mean age 58.5 years). The development and differential-structural transformations of the arterial system, age-related modifications, functional, haemodynamic changes contribute in several ways to the appearance of pre-AT and AT, primary processes, which may be considered reversible. Altering agents from the environment hurt the arterial system, causing AT in its classic meaning, which is actually relatively uncommon, and the more frequent manifestations, under the diverse forms of ecologic PM. Lately, due to fundamental studies, in some regions there has been discovered the PM of AT, called geographic, with extensively described features. The dynamics of the AT is decisively influenced by alimentary factors, demonstrating concomitantly original particularities, set in ecologic PM. Nutritional factors, along with the factors of the psycho-social stress, after a prolonged action, not only determine, but also eclipse the difference between arteriosclerosis and atherosclerosis causing considerable difficulties for therapeutic strategy and facts. Such kind of PM has been observed in extreme conditions in large populations. The injury phenomenon might be determined by the influence of a group of xenobiotics, which is the subject of a new discipline — Ecologic Angiopathology. The study of the PM of AT is at its incipient stage. The extension and development of studies in this direction constitute a most vital necessity for medicine and pathobiology.

196. DERMATOMYOSITIS IN ELDERLY. A CASE REPORT

M. Araujo, A. Rodriguez Mendez, C. Calvo Uceta (Hospital Virgen del Valle, Internal medicine — geriatrics, Toledo, Spain; maraujo@sescam.jccm.es)

Background. Dermatomyositis is an idiopathic inflammatory myopathy. In adults, the peak incidence occurs in the fifth decade, although all age groups may be affected. In older people, the dermatomyositis is associated with neoplasia up to 25%. The adenocarcinoma of digestive system is the most associated neoplasia. Therefore, in older people with diagnosis of dermatomyositis an underlying neoplasia must be dismissed. **Clinical case.** A 84 year old woman was transferred to this hospital because of edema and dysphonia. A diagnosis of breast cancer had been made four months before the admission. Mastectomy with ganglionar dissection was performed (adenoca grade 3: T2N0M0). At the same time of breast cancer diagnosis, the patient had asthenia, anorexia and symmetric proximal muscle weakness. Two months after the surgery, the patient also suffered from pruritus, facial edema with facial skin eruption, dysphonia and dysphagia. The patient was transferred to emergency due to a suspected 'vein cava syndrome'. Physical examination showed symmetric proximal muscle weakness in both arms, periorbital erythema and dysphonia. Complementary Tests: hemogram, renal and liver functions were normal, muscle serum enzymes (LDH, CK and ALDOLASA) were minimally elevated. EMG: The patient refused to do it. Skin biopsy: dates suggestive of dermatomyositis. The thoracic TAC showed cardiomegalia, and cava vein syndrome was ruled out. The patient was treated with glucocorticoid therapy with prednisona in a dose of 1.5 mg/Kg per day for three weeks and subsequently the dose was decreased by 5 mg every few weeks with obvious improvement. **Discussion.** The dermatomyositis is an idiopathic inflammatory myopathy with muscle weakness and certain skin manifestations (Gottron's sign and heliotrope rash). The diagnosis is made from five diagnostic criteria: (Bohan and Peter in 1975): symmetric proximal muscle weakness, rash, elevated serum muscle enzymes, myopathic changes on electromyography and characteristic muscle biopsy abnormalities. In older people, the dermatomyositis is associated with neoplasia up to 25%. Our patient was diagnosed with dermatomyositis and breast adenocarcinoma at same time. Although our patient rejected the EMG, the skin biopsy was the definitive test in establishing the diagnosis of dermatomyositis.

197. HEAT STROKE IN THE ELDERLY

M. Arellano, M.A. Marquez, J. Gutierrez, M. Pi-Figueras, C. Roqueta, O. Sabartus (Geriatric Acute Care Unit (GACU), Hospital del Mar. Institut d'Atenciy Geriatrica i Socio-sanitaria (IAGS), Institut Municipal d'Assistencia Sanitaria (IMAS), Barcelona, Spain; MArellano@imas.imim.es)

Aim: To describe clinical and epidemiologic features of elderly patients admitted with heat stroke to a GACU. **Methods:** Patients admitted for heat stroke during summer of 2006 were studied. Epidemiological features, previous functional status, clinical features and destiny of discharge were studied. **Results:** Seven patients, 6 women and 1 man, with a mean age of 83.9 years, were studied. Provenance was: home (5 patients) and rest home (2 patients). Previous functional status was: Barthel Index (BI) 55.2, Lawton Index 2.5, Charlson Index 1.9 and 71.4% had cognitive impairment. At admission, BI was 0 and Pfeiffer test was

impracticable in all patients. Periferical medium temperature at admission was 40.2°C, heart rate was 126 beats per minute and respiratory rate 31 breaths per minute. Most frequent signs were: consciousness alteration (100%) (42.8% confusion, 28.6% stupor and 28.6% coma), heart rhythm alteration (85.7%) (50% sinus tachycardia, 33.3% atrial arrhythmia and 14.28% ventricular arrhythmia), tachypnea (85.7%), anhidrosis (85.7%), oligoanuria (57.1%), arterial tension alteration (42.8%) (66.7% hypertension and 33.3% hypotension) and vomitus (28.6%). Most frequent laboratory findings were: hemogram alteration (85.7%) (71.4% leukocytosis and 42.8% thrombopeny), of coagulation (85.7%), of acid-base balance (83.3%), electrolyte alteration (71%), rhabdomyolysis (57.1%), liver function alteration (42.8%) and renal insufficiency (28.6%). Predisponent pathology prevalence was: hypertension (42.8%), diabetes (28.7%), cardiopathy (28.7%), Parkinson disease (14.3%) and cerebrovascular disease (14.3%). Predisponent drugs use was: antidepressants (42.8%), benzodiazepines (28.6%), neuroleptics (28.6%) and laxatives (14.3%). One patient was transferred to another hospital, two died in hospital after a mean stay of 4 days, two were transferred to a nursing home where they died during the first fifteen days and two were discharged with a mean stay of 21 days. 50% of survivors had neurological sequelae. **Conclusions:** 1. Elderly patients, due to high prevalence of diseases and drugs intake, are liable to suffer this seasonal pathology. 2. Heat stroke is a severe pathology with high mortality and severe sequelae. 3. In case of temperature rise, it is important to suspect this pathology in order to start an early treatment.

198. URINARY TRACT INFECTIONS IN THE ELDERLY

M. Arellano, M.A. Marquez, O. Sabartes, M. Pi-Figueras, A. Roig, J. Gutierrez (*Geriatric Acute Care Unit (GACU). Hospital del Mar. Institut d'Atenciy Geriatrica i Socioasistència (IAGS). Institut Municipal d'Assistència Sanitaria (IMAS). Barcelona. Spain; MArellano@imas.imim.es*)

Aim: To study urinary tract infection's (UTI) etiology in elderly population admitted to a GACU, its susceptibility to antibiotic treatment and to optimize an empiric treatment. **Methods:** Retrospective study of UTI that were admitted to GACU between 2004 and 2006. Etiologic agent and antibiogram were collected. **Results:** Two hundred seventy eight UTI were studied; 93.2% were caused by gram-negative bacilli (GNB). Most prevalent agents were: *E. Coli* (60.1%), *K. Pneumoniae* (12.2%), *P. Aeruginosa* (6.5%) and *E. Faecalis* (5%). GNB showed high susceptibility (>95%) to amikacin and imipenem and an acceptable susceptibility (> 80%) to other aminoglycosides, third generation cephalosporins, aztreonam, fosfomicin and nitrofurantoin. Susceptibility to piperacillin/tazobactam and to amoxicillin-clavulanate was < 80% and susceptibility to other antimicrobial agents such as trimethoprim/sulfamethoxazole was clearly lower. *K. pneumoniae* showed better susceptibilities to the majority of antimicrobial agents, except to fosfomicin and nitrofurantoin, than *E. Coli* did. *P. aeruginosa* showed high resistance (susceptibility <85%) to usual antipseudomonic antimicrobial agents, mainly ciprofloxacin. Gram-positive cocci (GPC) showed excellent susceptibility (100%) to teicoplanin, vancomycin, amoxicillin-clavulanate and oxacillin and a lower one to other antimicrobial agents like ampicillin, penicillin and ciprofloxacin. *E. faecalis* was the most prevalent GPC (73.7%); it showed an excellent

susceptibility to teicoplanin, vancomycin, amoxicillin-clavulanate, oxacillin, penicillin and ampicillin. Its susceptibility to ciprofloxacin was clearly lower. **Conclusions:** 1. GNB are the most common etiological agents of UTI in the elderly, therefore empirical treatment must be addressed to this group. 2. High resistances to ciprofloxacin advise against its use as an empirical treatment in slight infections whereas high susceptibility to nitrofurantoin and fosfomicin make them good empirical treatments. 3. Third generation cephalosporins are more appropriate empirical treatment than amoxicillin-clavulanate in slight infections. 4. In severe infections, antimicrobial treatment should be based on urine gram, amikacin or imipenem should be used in GNB caused infections and amoxicillin-clavulanate in GPC infections.

199. PRIORITIES OF IMPROVING DENTAL AID TO ELDERLY PATIENTS

A.L. Arieval, G.T. Arieval² (¹St. Petersburg Medical Academy for Post-Graduate Studies, Dept. of Gerontology and Geriatrics, Dept. of Dentistry (for intern doctors); ²Medical Academy of Postgraduate Studies, Dept. of Dentistry (for training of interns); ariev_al@mail.ru)

The recent decade in dentistry in Russia has been characterized by expansion of market relations; this implies the need for reforming dental care system and for reconsideration of educational policy in the area of training dental care specialists. Up to the present moment elderly patients with dental diseases frequently characterized by atypical and peculiar course are not viewed as a special entity. The priorities of improving dental aid to geriatric patients include: 1) Providing a definition for geriatric dentistry; 2) Establishment of a well-organized system of geriatric dental service; 3) Generating a register of dental diseases in elderly patients; 4) Introduction of geriatric dental care into the course of under- and postgraduate studies including internship and residency with detailed elaboration of the following divisions: characteristic features and consistent patterns of involutional changes of dentition; age-related characteristics — interrelationship of somatic and dental diseases; dental examination; clinical manifestations and course of the major dental diseases; dental treatment and the basics of clinical «geriatric» medicinal therapy.

200. MELATONIN. SIEGE OF LENINGRAD. COMORBIDITY. DENTAL PATHOLOGY

A.L. Arieval, G.T. Arieval, T.V. Kvetnaia², I.M. Kvetnoy² (¹St. Petersburg Medical Academy for Post-Graduate Studies; ²St. Petersburg Institute of Bioregulation and Gerontology, Russia; ariev_al@mail.ru)

Objective: To study the concentration of melatonin (MT) in the saliva of patients depending on the severity of dental pathology, on the existence of comorbid states, age, as well as on whether or not the patient had survived the siege of Leningrad (during World War II) in his/her childhood or young age. **Materials and methods:** The study was performed on 43 patients (17 men, 26 women) aged 26-80, average age being 61.44±13.35 years old. The studied cohort was subdivided into 3 age groups and a group of patients, who were residents of blockaded Leningrad in their young age. Dental pathology was represented by inflammatory diseases of parodontium and periodontium of different severity. Material (saliva) was collected from all patients strictly at a fixed time — 11.00 o'clock in strict

accordance with the «Protocol». 13 patients, who were diagnosed with acute maxillary periostitis, underwent a dynamic study — before surgical treatment and 5 days after it. Materials were studied in the Biomedical Research Centre of the University of Tübingen, Germany. *Results:* Spearman range correlation analysis revealed statistically significant connections between the indices of MT concentration and the severity of dental pathology ($R=0,50$, $p<0,0005$), comorbidity ($R=0,38$, $p<0,01$), age ($R=0,340$, $p<0,01$). Especially interesting is a correlation between the fact that the patient had survived the siege of Leningrad in his/her childhood or young age and the severity of dental pathology ($R=0,41$, $p<0,002$), as well as comorbidity ($R=0,52$, $p<0,0002$). The study of MT in dynamics — before and 5 days after the treatment — revealed a reliable decrease in this index in all patients. However, the most significant reliable decrease in the concentration was revealed in the groups of patients older than 60 years and the survivors of the siege of Leningrad. Initial indices of MT concentration in the saliva of patients, who had survived the siege of Leningrad in their early years were reliably higher ($p<0,005$), than in the patients of the same age group, who lived on territories other than besieged Leningrad. *Conclusion:* Presumably, a multifactor stress impact (hunger, cold, bombings, altered biorhythmics, psycho-emotional stress etc.) sustained by the patients, who had survived the siege of Leningrad in their early years, as well as comorbidity, account for the difference in melatonin concentrations in the saliva, both in initial and dynamic ones, before and after surgery.

201. THE IMPACT OF REGIONAL ANAESTHESIA IN THE TURKISH ELDERLY PATIENT POPULATION ON CAROTID SURGERY

E. Aslim, H.T. Akay, S. Candan, S. Ozkan, E. Akpek, S. Aslamaci (Baskent University Hospital, Ankara, Turkey; erdalaslim@yahoo.de)

Objective: Surgical carotid endarterectomy (CEA) remains the gold standard for management of carotid atherosclerosis in patients who harbor both symptomatic and asymptomatic carotid stenoses. Advanced age has been reported to be associated with an increased risk of carotid endarterectomy. Elderly patients are often labeled as being «high risk» for CEA, and medical care or catheter-based carotid angioplasty and stenting (CAS) are offered as preferred treatments for their carotid disease. The reduction of stroke risk to the patient by endarterectomy depends closely on the risk of the procedure itself; a single flaw during management can negate the benefits to the patient. The most important factor to minimize mortality and morbidity rates are closely related with monitoring cerebral perfusion during the surgery. *Methods:* Between June 2004 and January 2007, 65 CEA operations were performed under regional anaesthesia in 60 patients over 75 years of age. The 60% of patients were preoperatively symptomatic and 92% of patients were classified as ASA IV. In 55 patients only CEA was performed and in 5 patients CEA was combined with coronary bypass surgery. Hemodynamical and neurological status were observed and recorded in postoperative 30 days and follow-up period. *Results:* The mean age was 77.1 ± 1.8 (75–86) with 60 patients. There were 1 hospital death. Carotid endarterectomy and patch-plasty was performed in 50, CEA and primary closure in 15 patients. Shunt was used only in 5 patients. The mean

carotid clamp and operation time were 31.3 ± 4.4 (27–45) and 116.9 ± 25.2 (90–150) minutes respectively. The median intensive care unit (ICU) and hospital stay time were 2 days (minimum 1 and maximum 11 days) and 4 days (minimum 2 and maximum 11 days) respectively. There was not any stroke. *Conclusion:* Regional anaesthesia in Carotid Surgery is attractive and gaining popularity also in elderly patients for easy and reliable monitoring of cerebral perfusion during arterial clamping, providing a more relaxed and cautious repair [being aware of the awakensness of the patient and knowing that the neurological status is safe], therefore minimizing the use of selective shunting, lowering overall costs and reducing the incidence of morbidity and mortality. The experience of the surgical and anaesthetic teams and patient co-operation is probably the most important factor in deciding which anaesthetic technique to use for Carotid surgery. In conclusion CAE in elderly patients can be performed with acceptable outcomes by using Regional anesthesia.

202. CHARACTERISTICS OF DEGENERATE CALCINOSIS OF THE HART VALVE STRUCTURES AND THE ATHEROSCLEROSIS OF THE ELDERLY AND THE SENILE AGE IN HOT CLIMATE

L.E. Atahanova, G.H. Yarmukhamedova, J.S. Talipova, G.M. Tulabaeva, M.Sh. Ismailova, M. Sagatova (Tashkent Doctors Postgraduate Institute; isi@who.uz)

Purpose. To study the condition of the heart valving system of elderly and senile age in the hot climate.

Material and methods. 286 patients were surveyed (123 men and 163 women), in the age of 60–85 years (middle age $76,5\pm 4,67$ years). Were determined: end-diastolic (EDV) and end-systolic (ESV) volume of the left ventricular (LV), parameters of the contractility of the myocardium, ejection fraction (EF), stroke volume (SV), the size of left auricle (LA), weight of the left ventricular myocardium mass (LV MM), thickness of the inter valves septum (IVS) and posterior wall (PW) LV, amplitude of movement ISV and PW. For estimation of diastolic functions (DF) LV measured the maximal speeds of a blood-groove in a phase of fast filling (PVE) and atrial-systoles (PVA), their ratio (E/A), duration of a phase of fast filling, time of acceleration (AT) and delay (DT) a blood-groove in a phase of fast filling, etc. In a continuous mode of a Doppler-echocardiography determined isovolumic relaxation time LV (IVRT). On conglomerate expressivenesses and intensity echo-signals from mitral shutters (MV) and aortal valves (AV) the degree of fibrosis (Fi +) and calcinosis (Ca +) on 6 mark system was estimated. *Results.* Average values of parameters of the systolic functions LV at 83,2% on survey have been reduced (EF<55,6–58,2%). At 79,4% reduction in amplitude of disclosing of atrial (1,6–1,5 cm) and mitral valves (2,2–2,3 cm) have been identified, degenerate calcinosis of valve structures of heart identified at 64,5% of women above 60 years and at 35,5% of men of the same age, the Fi+Ca degree was in the range of 5–6 points. Degenerative changes as a conglomerate fibrosis (Fi +) and calcinosis only atrial shutters were revealed at 62,3% and in 37,7% as mixed character, i.e. simultaneous affection of both shutters and commissures. One valve affection of AV was marked at 15%, two valves (MV+ AV) at 57% (63,9% from them in women) and three-valves at 28%, these changes differed from characteristic changes of valves in acquired heart dis-

eases. Infringements diastolic dysfunctions on I type — at 85% (IVRT>73 мс, VEmax — 0.55см/с, VA — 0.83 см/с with, E/A — 0.5–0.6); On II type — 15% (IVRT cp-51 мс, VEmax — 0.94см/с, VA — 0.38 см/с, E/A — 2,1–2,3). *Conclusions:* Thus, Degenerate calcinosis of valves and atherosclerosis of the hearts are more often in hot climate and more often in women, than in men. Obtained data have scientific — practical interest for carrying out of the differential diagnostics of degenerative calcinosis of valves and atherosclerosis of the acquired heart diseases in elderly and the senile age. The echocardiography method should be used for early detection and treatment of the degenerative calcinosis valves and atherosclerosis of the heart.

203. PHOTODYNAMIC THERAPY FOR CHOROIDAL NEOVASCULARIZATION IN PATIENTS WITH AGE-RELATED MACULA DEGENERATION

S.E. Avetisov¹, M.V. Budzinskaya¹, T.N. Kiseleva¹, S.A. Shevchik², V.B. Loschenov², S.G. Kuzmin², G.N. Vorozhtsov² (¹State research Institute of eye diseases RAMS, Moscow, Russia; ²ISUE 'ISCC 'Intermedbiophyschim', Moscow, Russia; tkisseleva@yandex.ru)

Purpose: To examine the 12-month results for patients with choroidal neovascularization (CNV) who were treated with photodynamic therapy (PDT) with «Photosens». *Material and methods:* 42 patients with subfoveal CNV in age-related macular degeneration (AMD) were observed. Standardized protocol refraction, visual acuity testing, ophthalmologic examinations, color photographs, fluorescein angiographic were used to evaluate the results of photodynamic therapy with «Photosens» (0,02% solution of mixture sulfonated aluminium phthalocyanine 0,05 mg/kg, intravenously). A diode laser («Biospec», Inc, Moscow) was used operating in the range of 675 nm. Need for retreatment was based on fluorescein angiographic evidence of leakage at 3-month follow-up intervals. *Results:* At 3, 6, 9 month 18 (42,8%) patients had significant improvement in the mean visual acuity. At the end of the 12-month minimal fluorescein leakage from choroidal neovascularization was seen in 10 (23,8%) patients and the mean visual acuity was slightly worse than 0,2, which was not statistically significant as compared with the baseline visual acuity. Patients with fluorescein leakage from CNV underwent repeated PDT with «Photosens». *Conclusions.* Photodynamic therapy with «Photosens» can safely reduce the risk of severe vision loss in patients with predominantly classic subfoveal choroidal neovascularization secondary to AMD.

204. PHYSICAL TRAINING FOR ELDERLY PATIENTS WITH CHRONIC HEART FAILURE — SAFETY AND INFLUENCE ON EXERCISE CAPACITY, LEFT VENTRICLE AND HEART RATE VARIABILITY

B. Baciór, A. Klecha, A. Kubinyi, K. Kawecka-Jaszcz (Jagiellonian University, Krakow, Poland; arturklecha@poczta.onet.pl)

Exercise training is a well accepted treatment method for patients with chronic heart failure (CHF). The prevalence of CHF is especially high among elderly patients but they are often not qualified to physical training program because of advanced age. The aim of this study was to estimate the influence of 6-month physical training on safety, exercise tolerance, left ventricular (LV) parameters and heart rate variability (HRV) in patients above 65

years with ischemic CHF. *Material and methods:* 37 patients (mean age 71,4±7,8) with CHF, NYHA II-III class, EF≤35%, on standard pharmacotherapy were randomized either to a trained (A — 19 patients) or not trained group (B — 18 patients). There were no differences between groups in terms of age, sex, duration and severity of CHF. Supervised aerobic training (calisthenics, cycling at 60% VO₂ peak) for group A was conducted at the rehabilitation center for 6 months 3 times a week, 60 minutes daily (as a part of cardiac rehabilitation program). At baseline and after 6 months cardiopulmonary exercise test, echocardiography and 24hr continuous ECG recording with HRV estimation were performed in both groups. *Results:* At baseline there were no differences in analyzed parameters between groups. On completion of the study we observed a comparable number of hospitalizations and exacerbations of heart failure episodes in both groups. At 6 months in group A (trained) we observed a significant improvement of exercise capacity and no change in LV ejection fraction. Peak oxygen consumption increased from 12,3±2,7 to 15,9±3,0ml/kg/min (p<0,01), exercise time from 308±51 to 543±64 seconds (p<0,01) and ventilatory equivalent for carbon dioxide (VE/VCO₂) decreased from 39,6±4,8 to 34,2±4,1 (p<0,01). Ejection fraction of LV was 27,8±6,2% before and 28,5±5,6% (p-NS) at the end of the study. HRV parameters also improved in trained group after 6 months. In group B (control group) exercise capacity, HRV and LV parameters did not change significantly. *Conclusions:* Ambulatory exercise training provided for elderly patients (above 65 years) with ischemic CHF is safe and has a beneficial influence on exercise capacity, HRV and has no deleterious effect on left ventricular parameters.

205. ODOUR AND TASTE

J.P. Baeyens (AZ Damiaan Oostende; jpbayens@skynet.be)

Aim: Focus the attention on the fact that not only visual and auditory deficits are important, but that odour and taste are also important, not only for the quality of life but also for health. Testing odour and taste. An overview is given about easy to use test methods. Aging and Odour and taste. Aging has a clear influence on odour and taste. There is a higher threshold and the taste is changing. *Results of a literature search:* 1) Effect on quality of life; 2) Effect on health: poor odours gives diminution of nutrition intake; 3) Effect of health on taste and odour: with diminished general condition, diminished odor and taste; 4) Indicator for disease: a) Alzheimer disease, b) Renal insufficiency, c) Hypothyroidism, d) Vit. B 6 insufficiency, e) Alcohol dependence, f) Parkinson disease, g) Zink deficiency; 5) Effect of medications: 33% alteration in taste. Practical measures. Use of flavour enhancers. *Conclusion:* Odour and taste should be part of the routine geriatric assessment.

206. AGE-SPECIFIC FEATURES OF ENZYMATIC PROLIFERATION MARKERS UPON STOMACH ULCER

E.M. Bakurova, E.V. Khomutov, S.A. Zuiikov, Y.G. Zhebelenko, Z.M. Skorobogatova, B.G. Borzenko (Donetsk Medical State University, Ukraine; biochemistry@dsu.edu.ua)

The disturbances of cell division and growth processes caused by enzymatic activity changes can promote cancer development. It's known that risk of cancer is increased upon stomach ulcer (SU). Anabolic thymidine phosphory-

lase (TP_{an}, PD ECGF) is a factor of SU pathogenesis. Its activity correlates with the tissue proliferation rate. Catabolic phosphorylase (TP_{cat}) decreases the rate of tissue growth activated by TP_{an}. Adenosine deaminase (ADA) decreases the cell level of adenosine and by such way control its inhibitory influence on proliferation process. *Aim:* Study the enzyme activity features of thymidine phosphorylases, adenosine deaminase in mucous coat of stomach and serum blood for different age patients with SU. *Materials and methods:* The serum blood of 74 patients in age range 20–49 with SU has been studied. Control group was 108 subjects. The tissues of mucous coat of stomach (MCS) in periulceric area and distant areas have been studied for 20 patients with SU. Enzyme activity was determined by UV-spectroscopy. *Results:* The decreasing of TP_{cat} activity was found in ulcer area (up to 33,84±2,95, in distant areas MCS — 63,89±5,96 nmol/min/mg; p<0,01, respectively). The TP_{an} on the contrary had increased activity (up to 62,00±7,13, in distant areas MCS — 37,68±4,18 nmol/min/mg; p<0,01, respectively). The ADA activity also increased (up to 18,73±5,17, in distant areas MCS — 9,15±1,28 nmol/min/mg; p<0,05, respectively). We stated the direct dependence between enzymes activity changes in tissues and serum blood. The age-specific dynamics of TP_{an}, TP_{cat}, and ADA have been studied for norm and pathology. The SU tendency to age-dependent increasing of TP_{cat} activity is absent. The Spirmen correlation index (ρ) in control group is equal 0,87, upon SU=–0,19. In contrast to control group the activity of TP_{an} and ADA is increasing with age for patients with SU ($\rho=0,48$, $\rho=0,52$). *Conclusion:* Stated changes of enzymes activity in tissue and serum blood upon SU are evidences of proliferation activity increasing in MCS that elevates with age. This can promote a cancer development for patients with SU, especially in older age groups.

207. ACCELERATED AGEING PREVENTION IN OLDER AND VERY OLD PERSONS

S.N. Balashova¹, A.V. Dudkov¹, V.V. Benberin²

¹St. Petersburg Institute of Bioregulation and Gerontology, Russia; ²Medical Centre, Administration of the President of Kazakhstan; ibg@gerontology.ru

The study was aimed at evaluating the efficacy of peptide bioregulators of the brain (Cortexin, Pinelon, Cerluten) and vessels (Vesugen, Ventfort) in the complex treatment of patients from different age groups (60–79 years). The patients received 2 courses of different peptide bioregulators a year in addition to the conventional treatment. Control groups were formed of patients of similar age and with similar diseases. Efficacy of peptide bioregulators was estimated 2 times a year after the administration of peptide bioregulators, judging by the current psychophysiological status (B.S. Frolov, 1998), by subjective estimation by the patients of their status, as well as by the data from their case histories. Patients treated with peptide medications reported the improved indices of psychophysiological status (adaptive capacity, schizoidity, neuroticity, affectivity). The occurrence of chronic diseases in this group was reduced by 2–3 times as compared to the control patients. The occurrence of colds was also significantly reduced in the experimental group. The evaluation of subjective indices of the patients' health showed, that the number of complaints was reduced by 2–3 times. General status was improved, mental and physical working capacities were enhanced, irritability and the intensity and duration of headaches were reduced.

Control patients did not report any improvements in the current psychophysiological status or subjective indices of their physical well-being. Thus, the administration of peptide bioregulators normalizes and optimizes the functions of protective mechanisms of the organism, enabling the prevention of occurrence and development of diseases and pathologies. Presumably, peptide bioregulators are efficient in the prevention of accelerated ageing in older and very old persons.

208. QUALITY OF LIFE IN OSTEOPOROTIC WOMEN WITH INADEQUATE RESPONSE TO ANTIRESORPTIVE DRUGS

M. Barbagallo, L.J. Dominguez (University of Palermo; mabar@unipa.it)

Background and Aims: Osteoporotic fractures are a major public health problem affecting notably quality of life. The observational, multicenter study ICARO was designed to evaluate inadequate clinical response to antiresorptive drugs. The aim of the present study was to evaluate the impact of the clinical response to treatment on health-related quality of life in women with postmenopausal osteoporosis. *Methods:* 880 osteoporotic women (mean age 67.46±7.7 years) on treatment with antiresorptive drugs for at least one year were analyzed. All subject had at least 50% compliance to treatment (i.e. the patients took >50% of the prescribed doses). The «inadequate clinical response» (ICR), as opposed to «adequate clinical response» (ACR), was defined as the occurrence of X-rays evident new vertebral or nonvertebral fragility fractures at least 6 months after initiation of the antiresorptive therapy. The QUALEFFO-41 questionnaire was used to prospectively evaluate changes in quality of life. *Results.* 220 subjects (25%) presented an ICR. Non-responders had higher incidence of multiple vertebral fractures, compared to responders. The quality of life data in the study subjects showed a significant increased score (higher score is indicative of a lower quality of life) in the total mean score (37.89±16.7 vs. 45.84±18.2, p<0.01), as well as in all the domains/subdomains examined in the QUALEFFO-41 questionnaire in ICR when compared to ACR. *Conclusions:* Inadequate clinical response in subjects under antiresorptive drugs treatment is associated with an increased severity of the disease and with a significant reduction of quality of life.

209. MENTAL WELL-BEING AND QUALITY OF LIFE IN PROFESSIONAL DRIVERS

A.S. Bashkireva (St.Petersburg institute of bioregulation and gerontology, Preventive Medicine Dept., St.Petersburg, Russia; angel_darina@mail.ru)

Aim. Mental well-being is the main element in neurobehavioral status of the drivers' organism that determine the efficiency and reliability of his professional activity. Psychic adaptation in the system «Driver — vehicle — traffic environment» (DVTE) is considered to be a process, which provides the optimal accordance between a person and environment during the driving. This study was designed to estimate the psychoemotional status (PES), to compare the prevalence of psychoadaptive disorders among lorry-drivers in connection with their age, occupational hazards, work schedule and driving experience, and to assess the efficacy of peptide bioregulators (cytamins) in correction of PES disorders, as well as in providing conditions for stable psychic adaptation and in increasing professional drivers' quality of life. *Method.* 150 professional

drivers (men aged 30-59 years) were examined using a clinical questionnaire to identify, estimate and compare neurotic states according to 6 scales of anxiety, neurotic depression, asthenia, hysterical type of reacting, obsessive-phobic disorders and neurovegetative disturbances. The drivers were divided into 5 groups, 30 persons in each: I group received Cerebramin→, II — Vasalamin→, III — Cerebramin→ + Vasalamin→, IV — placebo, V — no preparations. *Results.* The study comprised drivers with stable psychic adaptation (58% of those under study), drivers with unstable psychic adaptation — a risk group (34%), drivers with stable psychic adaptation, i.e. with borderline mental disorders (BMD) — 8%. The predominance of drivers with unstable psychic adaptation and BMD was found: $\chi^2(2)=7.45$, $p<0.05$. As factor-disperse analysis showed the variability of psychoemotional imbalance levels in lorry-drivers was found to be due to a combination of the following factors: occupational exposure ($F(2,12)=100.6$, $p<0.001$) and their work schedule ($F(2,12)=34.16$, $p<0.001$). Comparative analysis of neurobehavioral disorders revealed the prevalence of the asthenic symptoms ($F(1)=10.503$, $p<0.01$), anxious and depressive manifestations ($F(1)=7.509$, $p<0.01$), hysterical reactions ($F(1)=6.040$, $p<0.05$) among lorry-drivers. The analysis of the incidence of various PES revealed a statistically significant increase in the number of drivers with stable psychic adaptation in Groups I, II, and III after cytammin correction as compared to the baseline level (3.3-, 2.4-, and 2.3-fold, correspondingly, $p<0.001-0.05$). A statistically relevant decrease in the number of the drivers with unstable psychic adaptation in Groups I, II, and III after a cytammin course was noted in comparison with the baseline level (2.5-, 3.0-, and 3.3-fold, respectively, $p<0.001-0.05$). No signs of BMD after cytammin application in the drivers of Groups I, II, and III were observed, whereas at the baseline these persons constituted 40.0% in Group I, 23.3% in Group II, and 26.7% Group III. A detailed examination of the drivers' PES according to different scales convincingly demonstrated the efficacy of combined application of Cerebramin and Vasalamin in correction of anxiety ($p=0.001$), neurotic depression ($p=0.0001$), asthenia ($p=0.0001$), hysterical type of reacting ($p=0.0004$), obsessive-phobic states ($p=0.0001$), and neurovegetative disorders ($p=0.003$). *Conclusion.* The presented results showed the occupational hazards and long driving experience being the risk factors for the development of BMD. The applied parameters of PES and early manifestations of BMD are informative criteria for assessing the life quality and professional suitability of lorry-drivers. Cytamins, interpolymer complexes of tissue-specific proteins with nucleic acids, are very effective in the correction of psychoemotional disorders and for attaining stable psychic adaptation.

210. INVASIVE GROUP A STREPTOCOCCAL INFECTION IN A GERIATRIC UNIT: ABOUT ONE CASE

S. Belliard, T. Cudennec, S. Koraiichi, L. Teillet, S. Mouliaas (CHU Ambroise Paré, APHP, Geriatric unit, Boulogne, France; sophie.mouliaas@apr.aphp.fr)

Case report: a 103 years-old demented woman, living in nursing-home, was hospitalised for a pyretic syndrome with erythrodermia. Two blood cultures were positives with group A beta-hemolytic streptococcus. The patient was treated with ampicillin and got better. The «Sanitary and social administration» was informed and asked for a special vigilance on febrile syndromes in the nursing home. Invasive infections incidence grew up from 2000

(1,5 per 100000 population per year), especially in elderly patients more than 80 years-old. Although outbreaks of group A streptococcal infections in nursing homes have been reported, there are no data on their incidence. The proxies can be infected with a risk 200 times more than the general population. Some risk factors are known, as underlying chronic disease, infection with the human immunodeficiency virus, cancer, diabetes, alcohol abuse. In many countries, some recommendations are known, as in France: the Sanitary and social administration has to be alerted (July 2001 law) and since november 2005 proxies have to be treated. For patients living in nursing homes, the proxies must be identified within people having contacts with the patient for 7 days before the first symptoms till 24 hours after the beginning of the specific treatment. Invasive group A streptococcal infection is a common disease in elderly people and is actually subject of a national survey. Management of the treatment, screening of the proxies and early diagnosis are necessary.

211. IMPROVING QUALITY OF CARE FOR TERMINAL PATIENTS AND THEIR FAMILIES BY ADDING VOLUNTEERS AS PART OF THE INTER DISCIPLINARY TEAM

S. Ben Shalom¹, I. Solomon², E. Wolfen², I. Shaha¹, D. Garfinkel¹ (¹Shoham Geriatric Medical Center, Pardes Hana, Israel; ²Ve-Ahavta — center for mental & spiritual care, Zichron Yaakov, Israel; dorong@shoham.health.gov.il)

Purpose: The Geriatric-Palliative department (GPD) at the Shoham Geriatric Medical Center provides palliative care to patients with chronic cancer/non cancer, «non-curative» diseases and to their families, in the «end of life» (EoL) period. We've identified needs that, with our present means & budget, were difficult to satisfy appropriately. Those included paucity of individual accompaniment and support to patients & families (P&F), continuity of care from GPD to the community, before and after death. «Ve-Ahavta», a non profit organization, provides accompaniment and support to people in situations of loss and bereavement. We joined forces and built a model for educating volunteers, thus enlarging the traditional, professional inter disciplinary team (IDT) to fill the above mentioned gaps, in an attempt to improve quality of EoL care. *Methods:* We used several local advertisement means to recruit volunteers to the challenging task of accompaniment and support to EoL P&F. The volunteers' educational program included 10 weekly 2 hours meetings, conducted by the two social workers of the GPD (SBS) and «Ve-Ahavta» (IS). It comprised knowledge of principles of volunteering, accompaniment & support to EoL P&F, stages of bereavement, role play, guided imagination, discussions and activities towards group materialization, as well as lectures given by the medical director (DG) and head nurse (ISh) of the GPD, and by the community Rabbi (EW). All volunteers were exposed to EoL patients & their families, and to the IDT, at the GPD. *Results:* Following personal interviews of the first 30 applicants, 15 candidates were chosen (11 women, 4 men, age 30–70). The first course started in October 2006, all 15 applicants completed it. Only one «graduated» volunteer dropped out because she had to leave Israel. On January 2007, 8 already started to function as volunteers to EoL P&F both at the GPD and in the community. The rest are waiting for us to match the right patient, as adjusting P&F needs to those of the volunteers are important for maintaining a successful, stable, long standing relationship. The anonymous feedback questionnaires given to the volunteers, the IDT, P&F, revealed a

very high score of satisfaction regarding the depth of links created and quality of care given. *Conclusions:* Adding non-professional, highly motivated volunteers to the traditional IDT, enables to relieve some burden off the later, while improving quality of care to EoL P&F. Our model is successful in increasing feelings of satisfaction in the volunteers as well.

212. EFFECT OF PEPTIDE CEREBROPROTECTOR ON PSYCHOEMOTIONAL STATUS OF OLDER AND VERY OLD PATIENTS

V.V. Benberin¹, A.V. Dudkov² (¹Medical Centre, Administration of the President of Kazakhstan; ²St. Petersburg Institute of Bioregulation and Gerontology, Russia; dyakovlev@gerontology.ru)

The need for social adaptation of older and very old persons stipulates the priority of the search for effective means of human psychoemotional status correction. Psychoemotional status disorder is manifested in a bad state of health, mood, reduced activity, high level of individual and situational anxiety, thus drastically reducing the quality of life in older individuals. The efficacy of peptide cerebroprotector Pinealon in normalizing the psychoemotional status was studied in 56 patients (16 men, 40 women) aged 62–84 years, reporting symptoms of exhaustion and cerebrastrhenic status. The medication was prescribed in the dose of 100 µg 2 times a day, for 30 days. The effect of the medication on psychoemotional status of patients was studied using computer program «Operative Status Test» and such widely used tests as «State of health, activity, mood» («SAN»), Spielberger-Khanin test and M. Luscher color test. Comparative results of the study of psychoemotional status before the experiment and after 30 days course of Pinealon showed, that the administration of the medication improved the results in the majority of tests. For example, SAN test results were improved by 28,4% (state of health), by 35,6% (activity) and by 41,3% (mood). «Reactive anxiety» index was reduced by 42,1%. M. Luscher test showed a reliable decrease in the indices «emotional stress», «vegetative coefficient», «summary deviation», «psychic exhaustion», «psychic tension», «anxiety» by 56,3%, 61,7%, 48,4%, 59,9%, 65,1% and 47,2% correspondingly. It is noteworthy, that the study of remote results of treatment (in 3 months after the beginning of the study) showed that 9 out of 11 studied indices remained stable. Thus, the administration of Pinealon reliably improved the indices reflecting psychoemotional status of older and very old patients reporting exhaustion and symptoms of cerebrastrhenia.

213. DOES METHYLPHENIDATE (MPH) REDUCE FALL RISK IN OLDER ADULTS? SINGLE-DOSE, RANDOMIZED, PLACEBO-CONTROLLED, DOUBLE-BLIND STUDY

R. Ben-Itzhak¹, J.M. Hausdorff², N. Giladi² (¹Movement Disorders Unit and Parkinson's Center, Tel-Aviv Sourasky Medical Center; Reuth Medical Center, ²Movement Disorders Unit and Parkinson's Center, Tel-Aviv Sourasky Medical Center; Sackler Faculty of Medicine, Tel-Aviv University, Ramat-Aviv, Tel-Aviv, Israel; ronbenitzhak@yahoo.com)

A randomized, double-blind, placebo-controlled, crossover study was conducted in 26 non-demented patients (mean age 73.8 years) with a subjective complaint of «memory loss». Gait and cognitive function were evaluated before and two hours after a single dose of methylphenidate (MPH) 20 mg or placebo, in two sessions

separated by 1–2 weeks. In response to MPH Timed Up & Go (TU&G), Stride time variability and Swing time variability during usual walking and dual tasking (DT) S3 significantly improved. TU&G improved significantly in compare with baseline as well as placebo. MPH improved cognitive function: Executive Function (EF) — significantly accuracy and reaction time. These findings suggest a new therapeutic option to decrease fall risk in community residing older adults.

214. ASSESSMENT OF PAIN IN PATIENTS WITH DEMENTIA IN SPECIALISED UNITS

S. Bernades¹, A. Corominas², S. Riu³ (¹Equip de Suport. Germanes Hospitalaries S.S.M. Hospital Sagrat Cor. Martorell, Barcelona, Spain; ²Unitat de Psicogeriatría. Hospital Benito Menni. St. Boi de Llobregat, Barcelona, Spain; ³Servei Estades Temporals Gent Gran. Llars Mundet, Barcelona, Spain; coord.pades@hscjscormar.org)

Grounds and goal: There is a high prevalence of pain in patients with dementia. Thus, the aim of this research is to assess the presence of pain in patients with dementia and its correlation with the prescription of analgesic treatment through three specialised psychogeriatric services. *Patients and methods:* It was a prospective trial of a total of 100 patients suffering from dementia (according to DSM IV criteria) in a psychogeriatric unit internment. The Charlson index was gathered, as well as GDS-FAST (Global Deterioration Scale-Functional Assessment Staging), MMSE (Mini-mental State Examination), Barthel index, Cornell scale, Doloplus scale, pain faces scale and the pharmacological treatment during the research. *Results:* The sample had a gender distribution of 73% women and 27% men with an average age of 76,8 years old (49% of them over 80). The most frequent dementia was Alzheimer disease (46%) and the most prevailing secondary diagnosis were locomotor system (70%), circulatory system (28%) and depressive syndrome (23%). The Charlson index average was 2,24. They mostly corresponded to stages 6 and 7 of GDS-FAST (45 and 50%). 77% of them suffered from total-severe dependence and serious cognitive deterioration was predominant (78%). In the depressive syndromes assessment, the average score on the Cornell scale was 7,9. Concerning pain assessment, the average on the Doloplus scale was 8,42 (presence of pain above 5 points) and of 3,9 on the pain faces scale. A 70% of them were taking analgesics, 54% were non-opiates and 28% were opiates (21% minor opiates and 7% major opiates). *Conclusions:* We can confirm that there is a high presence of pain in patients with dementia. Although we are finding a high pain detection level, analgesic prescription would be insufficient. Specific pain scales should be used on a regular basis in order to optimise the analgesic treatment in patients with dementia.

215. PRESCRIPTIONS USE IN COMMUNITY OLDER PEOPLE OF RURAL AREAS, SALAMANCA PROVINCE, SPAIN

D.A. Bernardini¹, A. Viloria², P. Gil², A. Martín Serna³, J.F. Macías Nucez¹ (¹University of Salamanca; ²Hospital San Carlos, Madrid, Spain; ³SACYL, Spain; diegobernardini@usal.es)

Objective: To evaluate elderly prescription use by age and medicine type in rural areas of Salamanca countryside, Spain. *Method:* A cross sectional study in two villages, Garcibuey (C1) and Villanueva del Conde (C2) of

Salamanca countryside. Our sample size included 165 elderly people (94,2%) from the total village older population. We collected information under systematic review, with 97% of direct interviews, 93% of them at home, between January and February 2006. We used SPSS 12.0. *Results:* We considered 161 (97.6%) cases, 4 were drop out by the statistical program, 35 (21.7%) of people use more than 5 prescriptions, 92 (57.1%) between 1 and 4; 34 (21.1%) lives without medicines. By gender 34 (45.9%) are women and 87 (54.1%) men, that use 54,1% of prescriptions and women 45,9% of the total. The village C2 has 26,9% of the total consumers with more than 5 prescriptions compared with 16,85% of C1. Prescription groups classification: CVD 137 (32.6%), antiulcers and metabolic therapy 76 (18%), blood 65 (15.4%), CNS and muscle 54 (12.8%), respiratory system 11 (2.6%), genitourinary 9 (2.1%), hormonal therapy 4 (0.9%), antimicrobials and oncology drugs 2 (0.4%), others 6 (1.4%). Regarding HTA therapy with 95 prescriptions, we founded diuretics as the most common therapy used, follow by ACE inhibitors and pharmacotherapy associations. By age group 45 (53.5%) of 65–74yrs and 42 (65.6%) with 1–4 prescriptions. *Conclusions:* Results of prescription consume data is concurrent with comorbidity data in our simple. Additionally we believe that community intervention in heavy users, group of 65–74 and 75–84yrs, could be cost effective in terms of pharmaceutical expenditure. Findings shows high values in women 21 (28.3%) with 5 and more prescriptions compare with 14 (16%) in men. High prescriptions use is considered predictor of morbid-mortality. To put attention and to design interventions to diminish prescriptions in older is mandatory in rural primary care.

216. LOCAL ANESTHESIA THORACOSCOPY IN GERIATRIC PATIENTS: OUR EXPERIENCE

L. Bertolaccini¹, A. Berra², E. Manno², F. Massaglia¹

(¹Dept. of Emergency, Section of Thoracic and General Surgery; ²Dept. of Emergency, Intensive Care Unit; l.bertolaccini@vodafone.it)

Background. Usually Video-Thoracoscopy is performed under general anesthesia by way of positioning double-lumen endotracheal tube. We describe our technique of Video-Thoracoscopy under local anesthesia and neuroleptic analgesia to diagnose and treat easy thoracic pathologies in geriatric patients. *Materials and methods.* Between January 2001 and January 2007, 56 patients (mean age: 77, range: 70–87 years) were referred for minor Thoracoscopic procedures. Indications were pleural effusions (44), pleural thickenings (6), and pleural plaques (6). Criteria of inclusion in the study group were: intrathoracic pathology not requiring double-lumen intubation or need for intrathoracic or mediastinal dissection, and absence of coagulopathy and/or cardiac dysfunction. Premedication was comprised of Atropine, 0.6 mg and Droperidol, 5 mg administered 20 minutes before scheduled operation time. In operating room, patient position was generally antero-lateral, although some procedures were performed in complete lateral positions. Sedation was maintained by Midazolam, 1–5 mg IV. Five minutes later, local anesthesia was injected in the intercostal space corresponding to the site of Thoracoscopic port, using Ropivacaine 7.5 mg/mL, 10 mL, associated to Lidocaine 2%, 10 mL. During operation, Propofol was injected (by demand), and crystalloid solutions were used to treat

Propofol secondary hypotension. After aspiration of fluid, accurate inspection of pleural space and mediastinum was made. Any loculations were divided. For histopathology examinations, multiple biopsies were performed under visual control. If needed, at the end of procedure, up to 4 g of asbestos-free talc was distributed as sclerosing agent uniformly onto pleural surfaces. Following removal of Thoracoport, a 24–28 F chest tube was inserted through the same incision and placed in the costo-vertebral gutter, as high as possible in direction of lung apex. Chest tube was connected to an underwater sealed chamber with wall suction. Postoperatively, chest roentgenogram was obtained to ensure full lung expansion and check for pneumothorax or residual effusion. Intercostal drainage was removed when drainage was <100 mL/day. *Results.* Mean operative time was 35 min. Among patients with pleural effusion, 37 effusions were simple and 7 effusions were complex. 4 g of asbestos-free sterile talc was administered in 39 patients with malignant pleural effusions. No major complications have been showed. Postoperative hospital stay was 5.5 days (range: 3–11 days). No hospital mortality occurred. No long-term complications requiring thoracoscopic or thoracotomy intervention occurred during the follow-up. *Conclusions.* Advantages of thoracoscopy in local anesthesia were reported in Literature, as were reported use of local anesthesia and sedation to treat pleural effusion with talc pleurodesis. In pleural effusion, our experience suggests that fluid may be not evacuated just before surgical operation. Patients with pleural effusion tolerated the procedure extremely well since they are used to breathing with a partial lung collapse. Complex pleural effusions are characterized by presence of loculations that are not sensitive; consequently, is possible to break the loculations. Our study demonstrates an effective way to perform thoracoscopy to diagnose and treat easy thoracic pathologies.

217. RISK FACTORS IN VASCULAR DEMENTIA AND ALZHEIMER DISEASE

A. Besga, P. Gil, L. Moron, A. Vilorio, R. Yubero, J. Ribera (Dept. Geriatry; aribesga@yahoo.es)

Objective: To identify the risk of AD and VD associated with vascular risks factors. *Methods:* Three years period observational prospective study of 274 patients. 115 EA diagnosed using the NINCDS-ADRDA criteria and 159 VD diagnosed using the NINCDS-AIREN criteria. The following parameters were measured: demographic variables (age, gender), cardiovascular risk factors (hypertension, diabetes, smoking, hyperlipidaemia, homocysteina, fibrinogeno, PCR), and comorbidity. Statitiscal analysis with a 95% significance in the statistical program SPSS 12.0 using the Kruskal-Wallis variable. *Results:* A total of 274 patients were included (average age 76,8±6,6 years). DV vs EA: female (71,7 vs 69,6%), hypertension (69,6 vs 61,5%), diabetes mellitus (25,2–19,8%), smoking (4,7 vs 8%), alcohol (10,3 vs 20,8%), hyperlipidaemia (60,9 vs 52%), ischemic cardiopathy (6,1 vs 6,1%), FA (6,2 vs 3,2%), thyroid disease (10,3 vs 6,3%), hypercholesterolemia (44,7 vs 47,6%), homocysteine (54–27%), fibrinogen (14,3–14,3%), PCR (77,8–66,7%), Hb1Ac (57,9–64,3%), head trauma (3,9 vs 1,1%), atrial fibrilation (6,2 vs 3,2%), depression (31,5 vs 8,5%). *Conclusions:* 1. These results suggest that vascular risk factord are linked to dementia. 2. There are significant differences in hyper-

tension, alcohol and depression between Alzheimer's disease and vascular dementia. 3. Hypertension and dyslipidaemia are the most prevalent vascular risk factor in both group.

218. RELATIONSHIP OF VASCULAR RISK TO THE PROGRESSION OF DEMENTIA

A. Besga, P. Gil, L. Moron, A. Viloria, R. Yubero, J. Ribera (Dept. Geriatry; aribesga@yahoo.es)

Objective: To examine the association between cardiovascular risk factors and cognitive decline. **Methods:** Three years period observational prospective study of 274 patients. 115 patients fulfilling the NINCDS-ADRDA criteria and 79 patients fulfilling the NINCDS-AIREN criteria. The following parameters were measured: Demographic variables (age, gender), cardiovascular risk factors (hypertension, diabetes, smoking, hyperlipidaemia, homocysteina, fibrinogeno, PCR). Statistiscal analysis with a 95% signficance in the statistical program SPSS 12.0 using the Kruskal-Wallis variable. **Results:** DV: GDS 3: genre male (16,7%), family history (1.09%), hypertension (83.3%), hyperlipidaemia (66.7%), diabetes (16.7%), smoking (0%), homocysteine (50%), PCR (100%), GDS 4-5 genre male (24,7%), family history (9.12%), hypertension (65.2%), hyperlipidaemia (67.4%), DM (22%), smoking (4.6%), homocysteine (47.4%), PCR (100%). GDS 5-6 genre male (39.1%), family history (2.18%), hypertension (78.9%), hyperlipidaemia (31.6%), diabetes (26.3%), smoking (5.3%), homocysteine (100%), PCR (100%). EA: GDS 3: genre male (16.7%), family history (0.36%), HTA (33.3%), hyperlipidaemia (50%), diabetes (0%), smoking (16.7%), homocysteine (0%), PCR (0%), GDS 4-5 genre male (34.8%), family history (5.4%), hypertension (61.2%), hyperlipidaemia (51.5%), diabetes (22.7%), smoking (9.1%), homocysteine (33.3%), PCR (72.7%). GDS 5-6 genre male (12.5%), family history (0.36%), hypertension (69.2%), hyperlipidaemia (1.5%), diabetes (27.3%), smoking (0%), homocysteine (50%), PCR (75%). **Conclusions:** 1. These results suggest a relationship between vascular risk factors and the severity's degree of dementia. 2. hyperlipidaemia and hyperthension are the most prevalent risk factor in both group.

219. RISK FACTOR IN VASCULAR DEMENTIA AND ALZHEIMER DISEASE

A. Besga, P. Gil, L. Moron, A. Viloria, R. Yubero, J.M. Ribera (Dept. Geriatry; aribesga@yahoo.es)

Objective: To identify the risk of AD and VD associated with vascular risks factors. **Methods:** Three years period observational prospective study of 274 patients. 115 EA diagnosed using the NINCDS-ADRDA criteria and 159 VD diagnosed using the NINCDS-AIREN criteria. The following parameters were measured: demographic variables (age, gender), cardiovascular risk factors (hypertension, diabetes, smoking, hyperlipidaemia, homocisteina, fibrinogeno, PCR), and comorbidity. Statitiscal analysis with a 95% significance in the statistical program SPSS 12.0 using the Kruskal-Wallis variable. **Results:** A total of 274 patients were included (average age 76,8±6,6 years). DV vs EA: female (71,7 vs 69,6%), hypertension (69.6 vs 61.5%), diabetes mellitus (25.2-19.8%), smoking (4.7 vs 8%), alcohol (10.3 vs 20.8%), hyperlipidaemia (60.9 vs 52%), ischemic cardiopathy (6.1 vs 6.1%), FA (6.2 vs

3.2%), thyroid disease (10.3 vs 6.3%), hypercholesterolemia (44.7 vs 47.6%), homocysteine (54-27%), fibrinogen (14.3-14.3%), PCR (77.8-66.7%), Hb1Ac (57.9-64.3%), head trauma (3,9 vs 1,1%), atrial fibrilation (6.2 vs 3.2%), depression (31.5 vs 8.5%). **Conclusions:** 1. These results suggest that vascular risk factord are linked to dementia. 2. There are significant differences in hypertension, alcohol and depression between Alzheimer's disease and vascular dementia. 3. Hypertension and dyslipidaemia are the most prevalent vascular risk factor in both group.

220. RISK FACTORS FOR SYNCOPAL FALLS IN COMMUNITY-DWELLING ELDERLY PEOPLE

C. Bilotta, L. Bergamaschini, A. Lucini, C. Vergani (Dept. of Internal Medicine, Geriatric Medicine Unit, Ospedale Maggiore Policlinico IRCCS, University of Milan, Italy; claudio.bilotta@unimi.it)

Background. The clinical spectrum of falls and syncope has been shown to overlap significantly in the elderly and common causes of syncopal falling, such as carotid sinus syndrome and vasovagal syncope, are not widely investigated in clinical practice. Thus, syncope is likely to be underestimated as cause of falling. Identifying elderly subjects at high risk for syncopal falls could favour recognition of cases in which specific diagnostic procedures for this kind of falls are advisable. **Objective.** To define risk factors for syncopal falls in elderly outpatients among features usually evaluated in clinical practice. **Methods.** We consecutively enrolled 422 community-dwelling elderly people aged 65 to 99 (on average 80 years) who visited our outpatient clinic for geriatric assessment including: office blood pressure, cognitive and functional status, cerebral neuroimaging, electrocardiography, color Doppler echocardiography, 24-hour dynamic ECG monitoring, echo color Doppler imaging of carotid vessels, carotid sinus massage and pharmacological treatment. **Results.** 82 patients (19%) reported at least one fall in the past 12 months. In 24 out of 82 cases (29%) falls were probably due to syncopal attack. At a multivariate analysis a number of features were significantly associated with syncopal falls: the use of antipsychotic drugs (Odd Ratio [O.R.]=5.43; P=0.007), a history of stroke or transient ischemic attack (O.R.=4.29; P=0.037), a systolic blood pressure ≤140 mmHg (O.R.=2.94; P=0.029) and arrhythmias (O.R.=2.81; P=0.028). Osteoarticular disease (O.R.=5; P=0.001), leukoaraiosis (O.R.=2.84; P=0.002) and the use of hypnotic and anxiolytic drugs (O.R.=1.96; P=0.041) turned out to be risk factors for non-syncopal falls. Cognitive impairment, polypharmacotherapy (use of four or more drugs) and the use of other classes of drugs did not appear to be independent predictors of the risk of falling. **Conclusions.** A syncopal cause of falling should be suspected in elderly outpatients on treatment with antipsychotic drugs, with history of symptomatic cerebrovascular disease, systolic blood pressure ≤140 mmHg or arrhythmias.

221. ERYTHROCYTE AND LIPID OXIDIZABILITY IN ELDERLY DYSLIPIDEMIC PATIENTS

C.D. Borsa¹, C. Rusu¹, M.V. Borsa² (¹Ana Aslan National Institute of Gerontology and Geriatrics, Buharest, ²Emergency Clinic Hospital, Buharest, Romania; cldbrs@yahoo.co.uk)

Background: Dyslipidemia is associated with an enhanced oxidative stress and a higher risk for endothelial dysfunctions. Oxidation of plasma and erythrocyte mem-

branes is a common accompaniment of cell damage and senescence. *Material and methods:* We investigated the link between «in vitro» serum lipid oxidation kinetics and the erythrocyte susceptibility to peroxidation (ESP) in aged patients with dyslipidemia. The kinetics of «in vitro» copper ions induced lipid oxidation in unfractionated serum was assessed by continuous recording of the time-dependence of the oxidation products accumulation at 245 nm during five hours and after 24 hours of the oxidation induction. ESP was evaluated by thiobarbituric acid reactive substances method based on generation, under oxidative stress induced by hydrogen peroxide, of malondialdehyde and other peroxidation products. *Results:* Significant higher values ($p < 0.01$) in kinetic parameters of lipid oxidizability (V_{max} , maximal oxidation rate; OD_{max} , maximal absorbance; V_{5h} , oxidation rate at five hours, and OD_{24h} , oxidation products accumulation at 24 hours) and marked increases in ESP in dyslipidemic elderly patients group ($N=27$) compared with control ($N=25$), were pointed out. Also, marked decreases in T_{max} (the time at which the oxidation rate is maximal) were recorded for dyslipidemia group. Linear regression analysis for dyslipidemic elderly patients showed significant positive correlations between ESP and oxidation products accumulation ($p < 0.05$) after 5 and 24 hours from the oxidation inducement, as well as ESP and the time ($p < 0.01$) at which the oxidation rate is maximal. Also, ESP has been positively correlated with atherogenic lipoproteins and negatively with non-atherogenic lipoproteins. *Conclusions:* In elderly dyslipidemia, increases in lipid oxidation kinetics lead to enhance erythrocyte membranes vulnerability to oxidation and make them more competitive in atherogenesis.

222. ADVANCED OXIDATION PROTEIN PRODUCTS AND LIPID OXIDATION KINETICS IN ELDERLY PATIENTS WITH TYPE 2 DIABETES MELLITUS

C.D. Borsa¹, C. Rusu¹, M.V. Borsa² (¹Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, ²Emergency Clinic Hospital, Buharest, Romania; cldbrs@yahoo.co.uk)

Background: Diabetes mellitus is associated with oxidative and carbonyl stress and accelerated non-enzymatic glycation. These processes impair endothelial function and may play an important role in the pathogenesis of cardiovascular events. We investigated the in vitro serum lipid oxidation kinetics and the advanced oxidation protein products in elderly patients with type 2 diabetes mellitus for assessing oxidative status and its relationships with other metabolic parameters. *Material and methods:* The kinetics of in vitro copper ions induced lipid oxidation in unfractionated serum was assessed by continuous recording of the time-dependence of the oxidation products accumulation at 245 nm during five hours and after 24 hours of the oxidation induction. Advanced oxidation protein products (AOPP) were determined spectrophotometrically at 340 nm. *Results:* The studies concerning the in vitro lipid oxidation kinetics were pointed out marked and significant increased values of recorded kinetic parameters in the elderly patients with type 2 diabetes mellitus ($N=24$), compared with control ($N=20$). Thus, the maximal absorbance of oxidation products accumulation at 245 nm (OD_{max} ; 0.493 ± 0.142 vs. 0.346 ± 0.07 ; $p < 0.05$), and the maximal oxidation rate (V_{max} ; 2.86 ± 0.71 vs. 1.83 ± 0.49 ; $p < 0.05$) were significant higher in diabetes group; whereas the lag

time was marked lower. The oxidation products accumulation at 24 hours after its inducement with copper ions, as well as the rate of their accumulation at 5 hours have been recorded marked increases in study group, compared with control. The levels of serum advanced oxidation protein products were significant higher in elderly patients with type 2 diabetes mellitus versus control group (78.8 ± 13.1 vs. 71.3 ± 9.7 ; $p < 0.05$). For diabetic patients a significant positive correlation of AOPP with serum triglycerides ($r=0.665$; $p < 0.05$) was pointed out. *Conclusions:* Our results reveal the increased oxidative status and the acceleration of oxidative processes in elderly patients with type 2 diabetes, which may contribute to extensive formation of advanced oxidation protein products, which acts as inflammatory mediators and lead to progression of atherogenic injuries.

223. THE AGE-DEPENDENT CHANGES IN DNA PRECURSORS METABOLISM IN PATIENTS WITH MASTOPATHY AND BREAST CANCER

B.G. Borzenko, O.P. Shatova, T.A. Zhuravel, E.V. Bogaturova, O.A. Verhova, Yu.D. Tursunova (Donetsk Medical State University, Dept. of Biochemistry, Donetsk, Ukraine; biochemistry@dsmu.edu.ua)

Objectives: The objective of the study was to investigate the age-dependant activity of metabolic enzymes of thymidine and adenosine — the main precursors of DNA. *Materials and Methods:* Changes in enzyme activity were studied in tissues, blood serum and lymphocytes of healthy women of different ages (23–60 years), women with mastopathy and women with breast cancer. *Results:* A significant decrease in thymidine phosphorylase (TP) activity in tissues and blood serum and adenosine deaminase (ADA) in lymphocytes of patients with mastopathy who were 46–60 years old was revealed. The activity of the enzymes studied in afflicted women aged 23–45 years is the same as in healthy women of the same age. It was revealed that age-related changes in the TP activity (0.81 ± 0.03 nmol/min nig) from blood serum of patients with mastopathy resembled the decrease in TP activity of patients with breast cancer (0.9 ± 0.01 nmol/min mg). The increase in activity of ADA in serum (6.78 ± 0.42 nmol/min mg) was accompanied by decreasing enzyme activity in lymphocytes and decreasing Lymphocyte Blast Transformation Index at the same age. *Conclusions:* These changes in enzyme activity can increase the level of inclusion of thymidine in DNA and the proliferation in general, and the immune system is disturbed. Thus, the age-dependant metabolic displacements during mastopathy may be one of the endogenous factors of oncological risk.

224. APPLICATION OF OSTEOINDUCTORS FOR STIMULATING OSSEOUS TISSUE REPARATION

B.K. Botabaev (Almaty Stomatological Institute for Post-Graduate Studies; profmedtrans@mail.ru)

The status of maxillofacial system is an important criterion in the evaluation of the quality of life in older and very old people. However, age-related alterations in the structure of the jaws and of the osseous tissue add difficulty to the restoration of maxillofacial system functions by prosthesis. This work was devoted to the study of osteoinductive properties of materials used in surgery for repairing maxillary osseous tissue defects. The experiment was

staged on 18 male Chinchilla rabbits aged 3,5–4 years with body weight of 5–5,5 kg. Lower jaw bone defect 0,4–0,5 mm in diameter was formed in all animals with a spherical bore under conductor and infiltration anesthesia by 1% Lidocain solution. Control animals had their bone defects filled with clots of blood. Experimental animals had their bone defects filled with granules of HAP-99 consisting of 50% hydroxyapatite and 50% tricalciumphosphate. After removal of the animals from the experiment micropreparations were made and morphological study was performed. The study showed, that by the 90th day of observation lower jaw bone defects in the control animals were filled with cellular-fibrillar connective tissue, in which fibrillar structures were prevalent. In experimental animals, in which bone defects were filled with HAP-99 granules, the damaged spot could not be revealed either macroscopically or by staining with hematoxylin-eosine. Newly formed osseous tissue throughout the spot of former bone defect had a laminar structure with uniformly oriented vascular channels. Thus, the border between regenerated tissue and the old one was completely diminished. X-ray studies showed that experimental animals had their bone tissue gaps completely filled with newly formed bone. Thus, HAP-99 granules revealed their pronounced osteoinductive properties, which enables to recommend them for application in geriatric dental aid with the purpose of accelerating reparative processes in older and very old patients.

225. AGE-RELATED PECULIARITIES OF IMMUNE RESPONSE AMONG PATIENTS WITH DIFFERENT FORMS OF MYASTHENIA

A.I. Bozhkov¹, E.M. Klimova¹, L.A. Drozdova², T.I. Kordon² (¹Research Institute of Biology, V.N. Karazin Kharkov National University; ²Institute of General and Urgent Surgery AMS of Ukraine; bozhkov@univer.kharkov.ua)

The functional activity of immune system changes in the course of ontogeny that may be a cause of autoimmune disease, and myasthenia in particular. Investigations of immune status in the course of autoimmune disease have two aspects: 1 — understanding age-related changes in regulation of different organism systems и 2 — choice of strategy medical treatment of autoimmune disease with regards of age of patients. In this work the most important of characteristic of immune system of young (20–39) and middle-age (40–67) patients were investigated. It is known, that hyperplasia of thymus in the case of myasthenia is frequently observed among young women, and carcinogenic thymoma — among aged men. This phenomenon is not sufficiently investigated. It was shown, that in middle-age patients with myasthenia and hyperplasia of thymus (MH) group the concentration of Ig E is elevated, and the concentration of immunoglobulins A, M, G not differ from referent values in the both age groups. The most significant is an increase of antibodies to hepatocytes and lung tissues among middle-age patients. In these groups the elevated concentration of interleukin 4 (IL4) was observed. The most significant effect of increase of this characteristic is observed among young patients. The γ -interferon concentration among MH patients is decreased without relation with age. Therefore in group of women with MH the significant changes of immune status are observed. This fact may be used in the choice of the stratagem of medical treatment. The decrease of the concentration of immunoglobulins A, M, G, E among men with myasthenia

and thymoma (MT) is shown without relation with age. In this group of middle-age patients very elevated (3 times) concentration antibodies to lung tissues in comparison to referent value was observed. In the group young patients with MT the highest concentration of antibodies to hepatocytes was shown. In the group the elevated concentration of antibodies to DNA was demonstrated.

226. TREATMENT QUALITY OF DIABETES MELLITUS IN GERIATRIC PATIENTS

A. Braun, A. Abel, C. Wittmann-Jennewein, T. Zieschang, P. Oster (Bethanien Hospital Heidelberg, University of Heidelberg, Germany; abraun@bethanien-heidelberg.de)

For elderly people with diabetes mellitus maintenance of autonomy is an important therapeutic goal influencing quality of life. *Objective:* Systematic assessment of the diabetes treatment quality and perceptions of elderly patients admitted to an acute geriatric hospital from different home environments (nursing home residents, home care, family carer, autosufficient). *Research design and methods:* Quality of diabetes treatment, metabolic control (HbA1c), nutrition, patients perceptions, treatment satisfaction and level of dependency (Barthel activities of daily living) were assessed in 94 patients with diabetes (age 80.6±6.2 y., HbA1c 7.5±1.6%, diabetes duration 10.2 (0.01–51.7)y., body-mass-index 25.7±5.1 kg/m², waist-Hip-Ratio 0.99±0.09). 33 patients were on diet therapy, 27 received oral antidiabetics (OAD), 26 insulin therapy and 8 insulin+ OAD therapy. *Results:* Seventy-six out of 94 patients (71.3%) showed an HbA1c ≤8% according to the guidelines for ageing people with diabetes of the German Diabetes Association (DDG). Compared to patients living independently at home, the metabolic control in nursing home residents (HbA1c 7.6±1.7 vs. 7.7±1.9, n.s.) and their treatment satisfaction (26.1±6.9 vs. 30.6±5.6 points, n.s.) were as good. They had a higher degree of dependency though (Barthel 22.1±25.1 vs. 61.9±28.9 points, p<0.01), more strongly impaired mobility (Tinetti 2 (0–17) vs. 13 (0–27) points, p<0.01), less knowledge about diabetes knowledge (1.9±2.6 vs. 6.3±2.7 points, p<0.01), inferior cognitive performance (MMSE, SPMSQ, p<0.01) and a higher prevalence of depression (GDS) (p<0.05). Better cognitive function correlated with better diabetes knowledge (r=0.49; p<0.001), but not with better metabolic control. *Conclusion:* Metabolic control of nursing home residents seems to be as good as that of patients caring for themselves at home. 64% of the nursing home residents showed HbA1c≤8% according to the national guidelines.

227. THE DEMOGRAPHIC CORRELATES OF WORRYING IN AN ELDERLY FREE-LIVING AUSTRALIAN URBAN POPULATION

K. Brock, R. Cant, L. Clemson (University of Sidney; K.Brock@fhs.usyd.edu.au)

Successful ageing is an aim of many countries' social policies. One aspect of successful ageing is freedom from the burden of worries. This study analyses which groups of elderly free-living Australians living in a large city were more prone to worrying. Sample selection: The data analysed were originally collected to test a falls programme in a population (n=320) of Sydney elderly Australians, aged over seventy years, living in the community who had each had at least one fall in the previous twelve months or

who were concerned about falling. Exclusion criteria were cognitive problems associated with dementia, inability to speak conversational English and being housebound. It was not selected on the basis of a chronic condition but nevertheless included some with arthritis, some who had been diagnosed as having Parkinson's disease, some who had previously experienced a stroke, and some who had broken a hip but had recovered mobility. Instruments and data: The worry scale (Wilsocki, 1988) used was designed for use among free-living elderly to identify the degree to which aspects of daily lives are troubling. It has three subscales of worry: one pertinent to finances (5 items), one to health (17 items) and one to social issues (13 items). In addition a fourth domain pertaining to falls with two items was added. *Results:* As in US studies, it was found that the elderly in urban Sydney were not prone to worrying. When the sample was divided into the Young-Old (aged 70 to 75 years) and the Old-Old (aged over 75 years), it was found that the means in the worry scales declined with age, that is older group worried less. Women were more prone to worrying than were men and those born outside English speaking countries were more prone to worrying. In addition those with conditions with a progressive element (arthritis and Parkinsons) were more prone to worrying than those who were affected by past traumatic health events (strokes and broken hips). Living alone was not correlated with a high level of worries and socio-economic status measures were not associated with worrying. Major worries included fears about falling, mobility issues, fears related to violence or crime and fears about personal or family members' health. Financial issues and issues related to appearance and social standing were rated low in terms of worries. The old do not show high levels of worry in Sydney, Australia and these levels decrease with age.

228. HUMAN ORGANISM MAGNETOSENSITIVITY IN PERSONS AT DIFFERENT AGE

Yu.A. Burda¹, A.V. Trofimov¹, A.V. Shabalin², V.G. Selyatitskaya¹ (¹SI Scientific Research Centre of Clinical and Experimental Medicine SB RAMS, ²Scientific Research Institute of Internal Medicine SB RAMS; morgana23@mail.ru)

Human organism magnetosensitivity mostly defines the cardiovascular system parameters, in particular, arterial pressure and correlates with the presence of magnetospheric perturbations and geophysical anomalies during the certain periods of prenatal developments at the moment of tests carrying out. Thus, the manifestation of magnetotropic reactions is possibly to consider as a parameter of correlations between an organism and environment. Frequency of arterial hypertension occurrence is known to increase with age. There is a question whether human organism magnetosensitivity (MS) changes in this case. MS of children (10–11 years, n=46), teenagers (15–17 yr, n=93), persons of middle (30–50 yr, n=100) and senile age (75 yr and more, n=36) by the diagnostic influence of a constant magnetic field on the area of ears and foot with estimation of arterial pressure level before and during testing have been investigated in the article. MS test was carried out in express variant within 2 minutes. The persons with low (decrease of systolic arterial pressure — SAP on 0–8 mm Hg), average (decrease of SAP on 8–15 mm Hg) and high (change of SAP on 16 mm Hg and more) MS were determined at arterial pressure changing, as compared to the reference

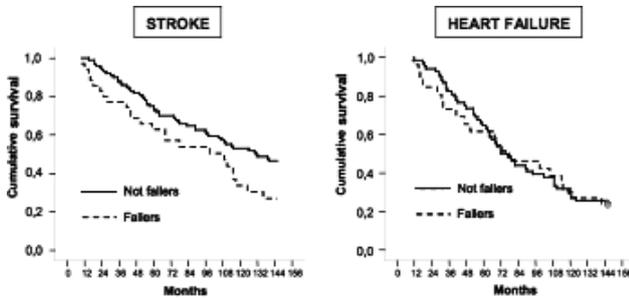
values, during the test in each age group. The results of testing showed, that in the case of high MS the SAP level decreased (hypotensive variant) or increased (hypertensive variant). The hypertensive variant is prognostically more unfavorable organism reaction on magnetic loading. There have shown 43,5% of children had low, 23,9% — average and 32,6% — high MS, and only one child had a hypertensive variant. Low and average MS meeting with equal frequency were typical for teenagers (32,5%), high MS — in 35,0% cases. The hypotensive and hypertensive variants of high MS et them was balanced (17,0% and 18,0%). In persons at middle age low MS was met in 32,0%, average MS — in 23,0%, and the frequency of high MS increased up to 45,0%, and hypertensive variant dominated (28,0%). As compared to patients at middle age, the frequency of low MS (42,0%) increased, the frequency of average MS was not changed — in average (22,0%), and the frequency of high MS decreased up to 36,0% in group of senile age. In this group wasn't revealed a man with high MS, the hypotensive variant. The evident SAP increase was registered in all investigated persons on magnetic loading. High MS occurrence frequency, the hypertensive variant in elderly persons (as compared to children) increased in 16,4 times. The results obtained are to assume, to be one of the factors promoting the arterial hypertension development risk with the age. MS increased, strengthening the interrelations between an organism and geomagnetic environment and increasing probability of crisis at the Earth magnetic field fluctuations.

229. FALLS IN THE ELDERLY: PREDICTIVE ROLE OF STROKE AND HEART FAILURE ON OCCURENCE AND LONG TERM MORTALITY

F. Cacciatore¹, F. Mazzella¹, G. Galizia², G. Testa², I. Simione², D.F. Vitale¹, G. Furgi¹, P. Abete², F. Rengo² (¹Maugeri Foundation, Institute of Care and Research, Telese, Italy; ²University of Naples, Federico II, Naples, Italy; fcacciatore@fsm.it)

Falls are common events in the elderly, frequently complicated by fractures and disability. Multifactorial interventions are demonstrated to reduce the falling rate of older patients. However, clinical consensus suggests to reserve these interventions for high-risk patients. Aim of the study was to identify the prognostic value of several conditions on falls among older patients and to assess the predictive role of falling on long term mortality. We evaluated the falls occurred in the year before the interview in a random sample of 1288 elderly subjects aged 65–95 years (mean 74.2±6.4 years), selected from the electoral rolls of Campania Region in Italy, visited by trained physicians in 1992. Several variables were considered as potential predictors of falls: hypotension (blood pressure <90/60 mmHg), visual impairment (VI), impairment of gross mobility (GM), medication use, limitations in instrumental activities of daily living (IADL), Mini-Mental State Examination-MMSE, presence of heart failure (HF) and previous stroke. We assessed long-term mortality after 12 year follow-up on the overall initial sample by means of death certificates. Prevalence of falls was 13.5%; among fallers 17.9% were frequent fallers (3 or more falls) and 13.9% of falls were complicated by a fracture. In subjects with HF and previous stroke, frequency of falls was 29.8% and 29.0% respectively (p<0.001) while in subjects with visual impairment and MMSE <24 was 23.8%

and 19.4%, respectively ($p < 0.001$). Multivariate logistic regression analysis demonstrated that subjects with HF and previous stroke showed an independent risk of falling 2.01 and 2.20 times greater independently by the effect of age, sex, hypotension, visual impairment, impairment of mobility, medication use, limitations in instrumental activities of daily living and MMSE.



Variable	OR	95% Confidence Interval	P value
Age	0,997	0,967–1,027	0,832
Sex	0,762	0,525–1,106	0,153
Hypotension	1,369	0,435–4,303	0,591
Visual impairment	1,011	0,870–1,176	0,885
GM disability	0,741	0,449–1,223	0,240
Drugs number	1,084	0,990–1,186	0,080
IADL Disability	1,729	1,108–2,698	0,016
Heart Failure	2,009	1,199–3,367	0,008
Stroke	2,201	1,432–3,383	0,000
MMSE < 24	1,399	0,929–2,105	0,108

To evaluate the predictive role exerted on long term mortality by falls we utilized Kaplan–Meier curves in all subjects and in those with stroke and HF. The Kaplan–Meier curves showed a statistical significant difference in mortality only in subjects with previous stroke (Log-Rank $p = 0.041$). In conclusion traditional risk factors for falls should be considered in approaching an elderly patients, but particular attention should be addressed to elderly subjects with heart failure and previous stroke. More importantly, intervention programs to prevent falls in stroke patients should be improved considering its greater predictive effect on mortality.

230. HISTOPATHOLOGICAL CHANGES IN GASTRIC MUCOSA DURING AGEING PROCESS

C.A. Carazanu (Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; crinacarazanu@yahoo.com)

Our approach was a post-mortem study made on a group of seven patients who died in the clinic of our institute and having no active gastric pathology. Their age was between 78 and 87 years old and there were four men and three women. The gastric tissue samples were taken from the gastric body and from the antral part, fixed in formalin 10% and then, processed by histopathological technique of paraffin embedding and cut in sections of 5 microns. These sections were coloured by hematoxylin-eosin routine staining and Van Gieson special staining for connective tissue. By light microscopic examination we noticed resemblant

histopathological changes in all examined cases like: inflammatory lympho-plasmocytic infiltrate, more abundant in the antral part, tending to form lymphoid follicles, some mitotic figures at basis of the foveolae, reflecting the specific turn-over, the expansion of lamina propria, tending to dissociate glands, sign of atrophy and the phenomenon of pyloric metaplasia which by replacement of body type of glands by mucous antral type could explain the acid production decline during ageing process.

231. AGE DIFFERENCES REGARDING USE OF LIFE-SUSTAINING TREATMENTS AT THE END-OF-LIFE IN ISRAEL

S. Carmel (Ben Gurion University, Israel; sara@bgu.ac.il)

The importance of the value of sanctity of life, the broad availability of advanced medical technology and affluent healthcare systems, have generated widespread use of aggressive and expensive medical care at the end of life. Awareness to the anguish often caused by use of life-sustaining treatments at the end of life and the ethical, medical and economical dilemmas involved, raise the need for change. The purpose of this study was to investigate age differences in preferences for the use and choice of different life sustaining treatments (LST). Data were collected from a random national sample of 708 Israelis aged 40+ by short telephone interviews (43% response rate). Interviewees were questioned about their hypothetical wishes for intravenous fluids, tube feeding, mechanical ventilation (MV) and cardiopulmonary resuscitation (CPR), if in three different illness conditions — cancer with metastases, severely mentally impaired, and a physically irreversible condition- being bedridden and incontinent. The findings indicate that persons aged 40 to 64 would want significantly more end-of life care than those aged 65+. These differences were statistically significant regarding all three health conditions and all but one LST. In comparison to the younger adults, a significantly higher percentage of the old desired euthanasia, if in a severe illness condition (58%, 69%, respectively). Similar age differences were found regarding pro euthanasia and physician assisted suicide attitudes (57.9% versus 67.1%, and 34.9% versus 42.9%, respectively). Women preferred less prolongation of life regarding all health conditions and all LST, and more euthanasia. Findings also indicate that elderly persons do not differentiate among the different LST, and both age groups would ask for more LST for a sick relative than for themselves, if in the same illness condition. These findings have practical implications, mainly regarding the need for open doctor-patient-family communication.

232. USING THE INTERRAI ASSESSMENT SYSTEM TO IMPROVE THE UNDERSTANDING AND EFFICIENCY OF CARE ACROSS HEALTH CARE SETTINGS

G.I. Carpenter (Univeristy of Kent, CHSS, Canterbury, UK; G.I.Carpenter@kent.ac.uk)

Physical and cognitive impairment are increasingly important determinants of cost of care as the numbers of people with chronic disabling diseases increase, primarily as a consequence of the aging populations of the world. Routine use of measures of function are necessary to maximise the efficiency of care services as they contribute to understanding how service configuration can be organised to deliver maximum benefit to those most in need. Data

will be presented showing the differences in functional ability in people receiving community care in EU countries and new data from the UK which illustrates the challenges in service organisation that must be understood and overcome if the cost pressures on health and social care services are not to overwhelm national health and social care budgets.

233. NURSES BEHAVIOUR AND ITS IMPACTS ON ELDERLY HOSPITALIZED PATIENTS

M. Carvalhais, L. Sousa (University of Aveiro; lilianax@cs.ua.pt)

Patients' perception of the quality of nursing care is crucial on the patients' assessment of health care quality. This study aims at identifying significant nurses behaviours (positive and negative), from elderly patients (75 years old or more) point of view, in hospital settings. The critical incidents technique was used and administered by interview to 30 subjects. Main findings suggest that the hospitalized elderly patients: i) appreciate by positive the nurses behaviours that guarantee the administration of treatments ensuring comfort, in a context of friendship, kindness, availability and concern; ii) appreciate by negative the nurses behaviours associated to the administration of treatments causing pain and/discomfort, in a context of hostility and unavailability.

234. ARE NURSING HOME RESIDENTS WITH DEMENTIA AND DAILY PAIN AT INCREASED RISK FOR NO ANALGESIA?

C. Catananti, R. Liperoti, M. Soldato, G. Gambassi, R. Bernabei (Universita Cattolica del Sacro Cuore, Rome, IT; chiaracata@yahoo.it)

Background. Low cognitive performance has been suggested to be an independent predictor of failing to receive adequate analgesia among patients with cancer¹ and muscle-skeletal pain² in several care settings. *Objective:* The aim of this study was to determine the association between treatment of pain and dementia in a population of nursing home residents experiencing daily pain. *Methods.* We conducted a cross-sectional study on nursing home residents in 5 US States by using the SAGE database, which contains data from the Minimum Data Set (MDS). We identified 161,446 nursing home residents aged 65 years and older, experiencing daily pain. Pain assessment was based on patients' report and was completed by nursing home personnel that observed, over a 7-day period, whether each resident complained or showed evidence of pain daily. Drug information from the MDS was used to assess whether or not the residents were receiving pain treatment. A complete list of medical and neurological diagnoses is reported in the MDS. A reported diagnosis of Alzheimer's disease or other dementia was used to identify residents with dementia. Data were collected between January 1st 1998 and December 31st 2000. The use of analgesic medications according to cognitive level was estimated. Logistic regressions models were used to derive crude and adjusted measures of association. *Results.* The prevalence of pain treatment was 80%. Main conditions associated with daily pain included osteoarthritis (40.2%), osteoporosis (16.5%), cancer (14.3%) and hip fracture (11.9%). Nearly 23% of residents were using NSAIDs (World Health Organization [WHO] level 1 drugs), 55.7%

were using weak opiates (WHO level 2 drugs) and only 1.9% were using strong opiates (WHO level 3 drugs). After control for potential confounders, a low cognitive level was associated with no pain treatment (adjusted odds ratio [adj. 0.68 OR]; 95% confidence intervals [CI] 0.66–0.70). The lowest probably of being treated was estimated among residents with severe cognitive impairment (OR 0.59; 95% CI 0.57–0.62). The observed association was independent of age and functional status. *Conclusions.* Dementia is an independent predictor of receiving no treatment for pain among elderly nursing home residents. Public health interventions need to be implemented to improve the management of pain in nursing homes especially among those residents with cognitive problems. *Reference.* [1] Shega JW, Hougham GW, Stocking CB, Cox-Hayley D, Sachs GA. Management of noncancer pain in community-dwelling persons with dementia. *J Am Geriatr Soc.* 2006;54(12):1892-7. [2] Bernabei R, Gambassi G, Lapane K, Landi F, Gatsonis C, Dunlop R, Lipsitz L, Steel K, Mor V. Management of pain in elderly patients with cancer. SAGE Study Group. *JAMA.* 1998;279(23):77-82.

235. DIAGNOSIS IN EXTERNAL CONSULTING OF GERIATRICAL HOSPITAL

B. Cobos, C. Yera, S. Amor, C. Rosado, M.J. Led, R. Daimiel, M.A. Carbonell, M.T. Fernandez (Hospital Geriatrico Virgen del Valle de Toledo, Spain; mangelcarbonell@telefonica.net)

Introduction: The external consultation of a geriatric hospital is a basic assistance for the geriatric patients. In this attending level, the ambulatory patients older than 75 years are examining. It's the first contact with geriatrics world. *Objective:* To analyze the characteristics of the patients who are send to the consulting room in a geriatric hospital and the motives why are they studied in this centre. *Material and methodes:* We took 535 clinical histories from the patients who went to the external consultation for first time during one year. We studied the characteristics of them. *Results:* During one year 535 patients were attending for first time at external consultation during one year. (30 patients were excluded for not complete correct criterions). The average age was of 82 (8.7%), 60% were women and 40% were men. 87.9% lives in rural environment and 10.7% lives in urban centre. The services sent to geriatrics consulting were emergency (42%) and primary attention (48%). The cause of consulting more important was cardiologic (20%), followed by neurology (18.8%), alteration blood analytical (12.3%) and several no specific symptoms (11.5%). The cardiologic groups presents 7.7% of arrhythmias, 6.1% of cardiac insufficiency, 2.2% pectoris pain, 2.2% syncope and 2% hypertension. In the neurology group, there was 6.7% by stroke, 7.1 alteration conscience levels, 3% Parkinson's disease, 1% headache, 1% epilepsy. In the alteration blood analytical group, 6.9% was anaemia, 1.8% kidney insufficiency, 0.8% thyroid alteration y 1.6 elevated rate of glucose. *Conclusions:* We can conclude that the most frequent reasons of visit our consulting was the cardiologic cause, concretely, arrhythmias, and the most important was atrial fibrillation. In second place, was neurology cause where stroke are the first of the group and the third place of the list is for anaemia diseases.

236. ASSESSMENT OF LDL — CIRCULATING IMMUNE COMPLEXES IN ELDERLY PATIENTS

G. Constantin, D. Gradinaru, C. Rusu (*Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; gianina_constantin@yahoo.com*)

Oxidative modifications of lipoproteins are thought to contribute to atherogenesis through their ability to trigger an immune response leading to the production of autoantibodies and implicitly the formation of immune complexes. These low density lipoproteins circulating immune complexes (LDL-CIC) are involved in the development of atherosclerosis in diabetic patients. This study aim has been to assess in elderly patients with type 2 diabetes LDL oxidative modified from circulating immune complexes. Studies were carried out in 30 patients aged 75±12 years, hospitalized at the National Institute of Gerontology and Geriatrics. Patients were enrolled in two study groups: a group of patients (n=18) with type 2 diabetes and a control group of patients (n=12) selected according to the SENIEUR protocol for immunogerontological studies. For evaluation LDL-CIC were separated after adding polyethylene glycol (PEG 8000) and an enzymatic assay of immune cholesterol was conducted. Results showed for the type 2 diabetes patients, a significant decrease in cholesterol content of the immune complexes, compared to that of the control group (44.27±22.04 vs. 114.24±35.16 µg cholesterol/ml serum, p<0.001). The lower cholesterol content in these immune circulating complexes associated with type 2 diabetes could be explained through that patients with diabetes have immune response dysfunctions at cellular and systemic levels. Another possible hypothesis could be that a part of these CIC is bound in the atheroma plaque, so that they are undetected by the method we used.

237. VITAMIN D LEVELS, AGING AND SUPPLEMENTATION

R. Crilly, D. Tanner, R. Nassur, M. Mason (*University of Western Ontario, London, ON, Canada; richard.crilly@sjhc.london.on.ca*)

Purpose: to explore the impact of vitamin D supplementation on plasma levels across the age spectrum. *Methods:* Subjects were patients attending an osteoporosis outpatient clinic and those attending for rehabilitation following hip fracture. Data is available on the 25-hydroxycholecalciferol levels, PTH levels and calcium, alkaline phosphatase and measures of renal function in over 600 patients. Results are presented on those on zero vitamin D supplements, (n=389), 400IU (n=53) and 1000IU (n=97) daily in subjects ranging from 20 to 99 years of age. In the case of treatment, all subjects had been on the same D dose for at least 3 months. All claimed to be taking the supplements daily but no formal compliance monitoring was undertaken. Those with renal impairment (creatinine >130 nmol/l) were excluded from the PTH analysis. *Results:* Data on untreated subjects show a weak but significant decline in D levels with age (r=-0.2, P<.001), but this is mostly due to a decline after the age of 70 yrs.; there is no significant decline before that age. On different doses of vitamin D, either 400 or 1000 IU per day the pattern was the same, but occurred at higher blood levels. On average the rise in 25OHD levels on either dose was greater for the younger (<70 yrs) and the middle group 70-79 yrs., than for the oldest, (>79 yrs). The difference in D levels between the levels on no supplement and on both the 400IU and the 100IU was least for the oldest group, suggesting the older subjects derived less benefit for the same dose administered. The PTH levels generally reciprocated the

D levels. In this population it was not clear if the problem was one of compliance. However in another study where D levels were measured in a Nursing Home population, where compliance is not an issue, the levels were similar to the community dwellers. *Conclusion:* We conclude that the response to vitamin D supplements may be compromised in the oldest subjects.

238. POLYTHERAPY FOR POLYPATHOLOGY

P. Crome (*Keele University, Keele, Staffordshire, UK; p.crome@med.keele.ac.uk*)

The prevalence of most chronic illnesses increases with age. For each condition the patient has there is now more likelihood that pharmacological treatments have evidence that they are effective. New drugs require proof of efficacy (amongst other properties) for licensing. In the past the emphasis of geriatricians was to reduce drug adverse events by stopping unnecessary and toxic drugs but now there is more emphasis on ensuring that patients are not denied drugs that might be beneficial. As a result patients may be prescribed 10 or more drugs all of which appear safe. As each new condition is identified the potential for adding more drugs exists. Too often the effectiveness of drugs has been evaluated in groups of older patients who may be unrepresentative of older people who present to geriatricians. Patients in trials tend to be young old rather than old old, on fewer drugs, have less co-morbidity and cognitive impairment and are better supported in the community. Such atypicality may be even worse if specific exclusions are applied to entrants to clinical trials. In many countries older patients, who tend to be poorer, will have to pay for all or part of the cost of drugs and therefore it behoves prescribers only to prescribe drugs that really make a difference. The heterogeneity of older people makes it impossible to provide comprehensive advice which is applicable to all situations however the following principles apply. Consider absolute benefit rather than relative benefit. Compare that benefit with patient's life expectancy and physical status. Treat first those diseases which are causing the most distress. Consider using drugs that work quickly — older people do not have time to wait. As always it is necessary to explain the purpose, potential adverse events and method administration to the patient.

239. PECULIARITIES OF THE DETERMINATION OF THE BIOLOGICAL AGE AMONG THE ELDERLY PEOPLE LIVING AT THE SPECIALIZED INSTITUTIONS

R.I. Danilova¹, A.V. Demin¹, N.J. Danilova²
(¹M.V Lomonosov Pomor State University, Arkhangelsk, Russia; ²Northern State Medical University, Arkhangelsk, Russia; danilova@pomorsu.ru)

For the last years great attention in gerontological science has been paid to the determination of the biological age as an indicator of functional state of a body. According to Belozero L.M. (1999, 2006), the biological age can be determined by the personal physical and intellectual efficiency, cerebral bioelectrical activity, spirometry data, and results of blood analyses. The process of the biological age determination among the elderly people living at inpatient institutions has its own peculiarities. For instance, elderly people of the age above 65 living at inpatient institutions for the period of more than 3 years get so much used to the passive way of life and refuse to carry out even easy physical and mental exercises during the research. Accordingly we concluded that the methods based on the data of the cerebral bioelectrical activity, spirometry data

and results of blood analyses are the most effective in the determination of the biological age. Within the framework of the present research there were used the methods of biological age investigation based on the functional indicators of the organism (Apanasenko, 2000; Voitenko, 1991) and biochemical blood indicators. 70 elderly people living at the one of the specialized institutions in Arkhangelsk town took part in this research. The research showed considerable differentiations in the indicators of the biological age evaluated on the basis of Apanasenko's and Voytenko's methods and blood analyses. From our viewpoint the biological age is truly determined by the biochemical blood indicators.

240. GERIATRIC CANCER: QUALITY OF LIFE OR LIFE DURATION? THE THERAPEUTIC DILEMMA

M. Davidovic, D. Milosevic, N. Despotovic, P. Erceg
(Centre for geriatrics, Beograd, Serbia; davidovi@eunet.yu)

The ageing rate has not changed for centuries, but the quality of living significantly has. On the other hand, research of old-age changes contribute to our knowledge about many diseases, especially malignant ones. It is a common belief that anyone would enjoy living as long as possible, so they could enjoy life. Modern medicine, including aggressive surgical methods, or chemotherapy, has created the ability for some to survive previously fatal illnesses. In reality, these procedures create mixed feelings in most. Obviously, an individual would like to make it through an illness or injury, but on the other hand it is disconcerting to many that this involves difficult therapeutical methods. There are many studies around today that speak to this dichotomy in people's wishes. It is quite certain that there is no simple definition of what quality of life includes or at least what would be sufficient to define it. It seems the answer would probably include: love, a meaningful profession, safety and security, health and energy, maybe even fame of some sort, long life and of course a society that would promote and support the institutions necessary to sustain a meaningful life. Given this frequency of malignant diseases, chemotherapy is not infrequent in elderly. Experience from clinical practice indicates that the principles of antineoplastic treatment in elderly population are not defined. Also, there is widespread belief that elderly are infrequently suitable for chemotherapy. General purpose of chemotherapy is destruction of malignant tumor if possible (complete remission) or decreasing tumor burden (partial remission), where the primary goal is slowing of disease progression, improving quality of life and increasing survival.

241. HEALTH STATUS AND DIETARY HABITS. DEVELOPMENT OF A «ZINC SCORE» AND A «MEDITERRANEAN DIET SCORE»

G. Dedoussis¹, S. Kanoni¹, G. Herbein², T. Fulop³, A. Varin³, J. Jajte⁴, L. Rink⁵, D. Monti⁶, E. Mariani⁷, M. Malavolta⁸, F. Marcellini⁸, E. Mocchegiani⁸
(¹Harokopio University of Athens, ²Frache-Comte University, France, ³University of Sherbrooke, Canada, ⁴Medical University of Lodz, Poland, ⁵Institute of Immunology, RWTH-Aachen, Germany, ⁶University of Florence, Italy, ⁷Istituto di Ricerca Codivilla Putti, IOR, Bologna, Italy, ⁸Immunology Center and Social Gerontology Unit, INRCA, Italy; dedousi@hua.gr)

Nutrition and health status are closely interrelated in older individuals. Single micronutrients, like zinc, as well as dietary patterns, like Mediterranean diet, have long been recognized to influence several biochemical mark-

ers. The main objective of the current study was the assessment of differential dietary habits in European elderly populations and the investigation of their impact on cytokine and zinc status. Within the pan-European ZINCAGE project (supported by the European Commission in the «Sixth Framework Programme», n°: Food-CT-2003-506850) population study, 957 (444 men and 547 women) healthy old subjects (≥60 years old) from five European countries (Italy, Poland, Germany, Greece and France) were recruited. Plasma interleukin (IL)-6, IL-8, monocyte chemoattractant protein (MCP-1), tumor necrosis factor-alpha (TNF-alpha) and zinc levels were measured in fasting blood samples. Dietary data were collected applying a food frequency questionnaire and were used to design and calculate a validated zinc score, representative of zinc-related dietary habits, and to estimate adherence to a Mediterranean diet, by calculation of a diet score. Dietary zinc intake was significantly different among most of the investigated European countries ($P < 0.001$). Major food sources of zinc in the elderly included meat, poultry, dairy products, fish, peas, cookies, pulses, pasta and rice. Significant country- and gender- specific sources of zinc were reported. A decline in zinc score with age was documented ($P < 0.001$). There were significant correlations between total consumption of zinc food-groups and zinc plasma levels in subgroups of the cohort. The zinc score revealed differential gender- age- and country-dependent dietary zinc intakes among European elderly. Furthermore, greater adherence to the Mediterranean diet was observed in the German and Polish populations comparing to the French, Greek and Italian populations. The Mediterranean diet was associated with reduced IL-8 concentrations in old Greeks ($\beta = -0.167$, $P = 0.034$) and with increased zinc plasma levels in old Germans and Greeks ($\beta = 0.242$, $P = 0.018$ and $\beta = 0.160$, $P = 0.043$, respectively). Several origin-dependent correlations among the biomarkers and components of the Mediterranean diet were observed. Single nutrient and dietary pattern scores are useful tools for assessing differential dietary habits in multiethnic cohorts and estimating their interactions with biochemical and inflammatory markers.

242. END-OF-LIFE CARE: FUTURE AND NEW CHALLENGES

L. Deliëns (Vrije Universiteit Brussel, End of Life Care research Group, Brussels, Belgium; luc.deliëns@vub.ac.be)

European societies are facing the largest public health challenges in their history, namely the growth of the population of older adults and the changing patterns of dying with a chronic illness. Improvements in public health, antibiotics, and modern medicine have resulted in unprecedented gains in human life expectancy. For most, the years after the age 65 are a time of good health and independence. Eventually, however, most of us will develop one or more chronic illnesses with which we might live for many years before we die. At the end of our lives we all hope to get the best palliative care possible. Palliative care is the interdisciplinary care that aims to relieve suffering and improve quality of life for patients with advanced illness and their families. It is ideally initiated at the time of diagnosis of any serious or life-threatening illness, independent of prognosis. Hence, giving optimal time to plan and arrange for a good death. With the aging of the populations, palliative care will be challenged as well. While palliative care

has originally be developed in cancer patients, a growing number of older patients will be suffering of co morbidity and a more complex symptomatology. Interestingly, the core precepts of geriatrics and palliative care are virtually identical: care is patient-centered, high priority is given to enhancing functional independence and quality of life, and an interdisciplinary team approach is required to address the needs of patients and their families. Furthermore, care is delivered wherever the patient happens to be (home, nursing home, hospital) at whatever stage of illness, and for whatever diagnosis. In this presentation we will address some conceptual issues in end of life care and address the future and new challenges of palliative care in the context of the aging of societies.

243. PSYCHOLOGICAL, PHYSICAL AND SENSORY CORRELATES OF FEAR OF FALLING AND CONSEQUENT ACTIVITY RESTRICTION IN ELDERLY

N. Deshpande¹, E.J. Metter², S. Bandinelli³, F. Lauretani⁴, B.G. Windham², L. Ferrucci² (¹University of Kansas Medical Center, Kansas, USA; ²National Institute on Aging, Baltimore, MD, USA; ³Geriatric Rehabilitation Unit, Azienda Sanitaria di Firenze, Florence, Italy; ⁴Tuscany Regional Health Agency, Florence, Italy; nandini@d@yahoo.com)

Fear of falling (FF) has been recognized as a serious and common problem in older persons. Activity restriction, social withdrawal and loss of independence constitute common serious consequences of FF which have rendered FF as a legitimate focus for rehabilitation. The purpose of this study was to identify psychological, physical and sensory function parameters that are specifically associated with FF and fear-induced activity restriction in a population-based sample of older adults. The study population (n=848, age ≤ 65 years, women 55%) is a representative sample of the population living in two towns of the Chianti countryside of Tuscany, Italy who were enrolled in InCHIANTI epidemiological study. Total FF and fear-induced activity restriction were quantified using the Survey of Activities and Fear of Falling in the Elderly (SAFE) questionnaire. Psychological parameters included cognition, depression and personal mastery. Physical measures included standing balance, time to complete 5 repeated chair stands, and lower limb muscle strength and grip strength normalized for participant's body weight. The sensory functions of visual acuity and contrast sensitivity and vibrotactile sensitivity were evaluated. Nearly 50% participants (women 65%) reported some FF. FF increased with age and was higher in women ($p < 0.001$). From those who reported FF, 65% reported some activity restriction. When controlled for severity of FF, fear-induced activity restriction increased with age ($p < 0.001$) but was similar in two sexes ($p = 0.949$). After adjusting for age, BMI, sex, social support and history of falls, personal mastery ($p < 0.001$) and repeated chair stand performance ($p = 0.001$) were independently associated with FF. In those with no depressive symptoms, personal mastery, standing balance, lower limb strength and visual contrast sensitivity were associated with activity restriction ($p < 0.001$ to 0.011) in addition to severity of FF. In contrast, in those who had significant depressive symptoms, total FF was the major factor strongly associated with activity restriction ($p < 0.001$) with marginal but significant association for cognition ($p = 0.027$) and standing balance ($p = 0.015$). In conclusion, psychological and physical factors are independently associated with FF. Presence of depression

possibly modulates what factors, in addition to severity of FF, induce activity restriction. It is possible that the physical and some psychological parameters can have reciprocal relationships with fear of falling as well as fear-induced activity restriction. A longitudinal evaluation is warranted to substantiate causal relationships.

244. VERBAL CUED RECALL AS A PREDICTOR OF CONVERSION TO AD IN MILD COGNITIVE IMPAIRMENT

E. Dierckx¹, S. Engelborghs^{2, 4}, R. De Raedt³, M. Van Buggenhout⁴, P.P. De Deyn^{2, 4}, I. Ponjaert-Kristoffersen¹ (¹Vrije Universiteit Brussel, Brussels, ²Middelheim General Hospital (ZNA), Antwerp., ³Ghent University, Ghent, ⁴Institute Born-Bunge, University of Antwerp., University College, Antwerp., Belgium; eva.dierckx@vub.ac.be)

Background. With the ongoing development of new disease-modifying treatments for Alzheimer's disease (AD), there is an increasing need for early diagnosis. This study was set up to investigate whether neuropsychological tests are able to predict conversion to AD among Mild Cognitive Impairment (MCI) patients. *Methods.* At baseline the cognitive part of the Cambridge Examination for Mental Disorders of the Elderly (CAMCOG), the Mini Mental Status Examination (MMSE), the Geriatric Depression Scale (GDS), a Dutch variation of Rey's Auditory Verbal Learning Test (10-RAVLT; a 10-word learning task), the Memory Impairment Screen plus (MISplus; a verbal cued recall task) and the Visual Association Test (VAT; a visual cued recall task) were administered to 40 patients of a memory clinic diagnosed with MCI (according to Petersen's criteria). After 18 months (range=14–22 months), MCI-patients were reassessed with the CAMCOG, MMSE and GDS and a follow up diagnosis was established. Of those who were seen for follow up (n=31), 7 fulfilled (NINCDS-ADRDA) criteria of probable AD (i.e. converters), while 24 did not convert to dementia (i.e. nonconverters) (conversion rate=23%). *Results.* A binary logistic regression analysis showed that the MISplus contributed most to the prediction of conversion (Wald $X^2(1)=5.78$, $p=.016$ (CI95%:.099–.790)). With a cut-off of 2 out of 6, a sensitivity of 71.5%, a specificity of 91.5%, a positive predictive value of 71.5%, a negative predictive value of 91.5% and an overall diagnostic accuracy of 87% were obtained. According to paired samples t-tests among converters there was a significant decline in CAMCOG-score between baseline ($m_1=85.71$, $sd_1=5.44$) and follow up ($m_2=77.29$, $sd_2=8.08$) ($t(6)=-3.36$, $p=.015$), whereas among nonconverters no significant differences were found between both CAMCOG-scores ($m_1=90.67$, $sd_1=5.94$; $m_2=90.14$, $sd_2=6.49$). *Conclusion.* This prospective, longitudinal study showed that low scores (i.e. a score of 0 or 1 out of 6) on the MISplus, a delayed verbal cued recall test, may be a good indicator of conversion to AD among MCI-patients.

245. URINARY INCONTINENCE AND ITS REPERCUSSIONS ON THE QUALITY OF LIFE, IN PATIENTS OVER 64 YEARS OF AGE. SPAIN 2006

J.M. Dios-Diz, J.R. Garcia-Cepeda, F.J. Brenes Bermudez, J.F. Zuazagoitia Nubla, M. Merlo-Loranca, P. Ramos Calvino (Servicio Galego de Saude (SERGAS), Spain; jdd@mundo-r.com)

Objectives: To find the prevalence of Urinary Incontinence in the general population of Spain amongst the over 64s — a currently unknown statistic. To study

the type of UI suffered by the patients. To value their illness along with the quality of life. *Material and method:* Descriptive study based on a questionnaire carried out individually with one of 21 doctors. The size of the sample was calculated using the program EPIDAT. The points of sampling were obtained using a random process, proportional to the population. 2,160 interviews were given at 33 population centres in The Balearic Islands, The Canary Islands, Catalonia, The Basque Country, Madrid and Galicia. At each place, the predetermined number of people was chosen at random, to whom the objective was explained and whose consent was requested in writing. Once carried out, the results of the interviews were entered into a database, from where the statistical analysis was performed; a) Amongst those chose for the sample it was found that 33.7% suffered UI, with an absolute precision of 2% and a level of trust of 95% (calculated in accordance with the formula proposed by Schwartz), b) Questionnaire: the questionnaire consisted of 20 questions or items, c) Data gathering: By means of personal interviews, the interviewing doctor filled in the questionnaire in collaboration with the GP of each of the interviewees, d) Interviewers: The participating doctors in this study had previous training and practice in both the interview process and any problem solving that may arise. *Results:* 1) The prevalence of UI in those over 64 yr of age in the population studied is 34.25%, 31.42% of which were men and 68.58% women. 2) 30.3% of the population studied between 65 and 74 yr of age had Urinary Incontinence. 3) The ICIQ-SF test was carried out, giving a rank between 2 and 11 amongst those who had Urinary Incontinence (with an average of 7.63). 4) 42% of the patients with UI had Mixed UI. 5) In 94% of those with UI in the population studied, their Quality of Life was objectified, affecting them not only individually, but also socially. *Conclusions:* Urinary Incontinence is a serious health issue, as a third of over 64-yr-olds suffer from it, affecting almost twice as many women as men, and having serious repercussions on the quality of life of the people who suffer from it. The most common type of UI is Mixed (Hyperactive Bladder + Force UI).

246. PROGETTO ANZIANO: A POPULATION-BASED PROGRAM TO PROMOTE THE HEALTH OF 80.000 OLDER PERSONS LIVING IN PADOVA-ITALY

D. Donato¹, M.C. Corti¹, F. Focarile¹, R. Toffanin¹, C. Guerra¹, S. Maggi², F. Rao¹ (¹Azienda Ulss16, Direzione Sanitaria, Padova, Italy; ²CNR — Center on Aging, Padova, Italy; dirtsan.ulss16@sanita.padova.it)

The Project Progetto Anziano was designed to promote health and to prevent disabling diseases among older persons living in the area of Padova. This three-year Program has been implemented in 2005 according to the WHO recommendations (Active Aging 2000) by the Public Health Authority, ULSS16, who delivers health care (universal coverage) to over 400.000 persons. Primary and secondary prevention programs have been designed to target the most important conditions affecting physical function and health care utilization. Primary prevention programs include interventions to: 1) prevent falls and fractures screening and modifying the risk profile of high risk individuals. 2) promote physical exercise among sedentary individuals with individual and group-based programs to increase muscle strength and improve balance. 3) promote healthy dietary habits among independent persons and screen malnour-

ished individuals among home-care service patients. 4) screen visual symptoms with a validated questionnaire to detect and treat potentially modifiable visual acuity defects. 5) reduce the number of interacting prescription and OTC medications among patients receiving 4 or more drugs. Secondary prevention programs are aimed at improving transitional and post-discharge care of patients hospitalized with congestive heart failure, stroke, COPD and other diseases associated with recurrent hospitalizations. Patients are registered by hospitalists in an electronic disease registry that triggers a pre-discharge consultation between general practitioners (GP) and hospitalists. Patients are then discharged with discharge instructions and followed-up by GP according to disease management guidelines for up to three months. Home care nursing and post-discharge medical visits are arranged according to personal needs and disease severity. Passive surveillance is monitoring vital status, nursing home admission, hospitalization, outpatients services, medications and home care use after registration and intervention. *Results:* At least 72%–86% of the target population was reached by the prevention programs. As compared to the year 2004, subjects discharged in 2006 with a discharge diagnosis of CHF, stroke, COPD or other specific diagnoses experienced a reduction in hospital stay by 5% as compared to other patients discharged with other medical diagnoses who experienced a small increase (+1%). *Conclusions.* Implementing a set of evidence-based interventions of disease management and primary preventions has been shown to be feasible with the support of GP and hospitalists. Preliminary results are satisfactory but less than expected as compared to previous data from randomized clinical trials. Our findings could be explained by a less selected sample of older persons and by the limited use of additional resources.

247. MULTIVITAMINS ARE DEVoured, WHY CLINICAL TRIALS HAVE NOT SHOWN CLEAR CUT OUTCOMES

Y. Dror (Hebrew University, Institute of Biochemistry, Rehovot, Israel; dror@huji.ac.il)

Delay in the aging processes, so-called Anti-Aging, is the most fascinating issue in gerontology while optimal diet for the elderly is probably the most important tool for Anti-Aging. However, we may scarcely change the general dietary habits but we may easily supplement elderly people with a proper complementary preparatory of vitamins and microelements, so-called 'multivitamin'. Inadequate intake of one or more micronutrients has been observed in most of the elderly populations in the Western societies. In many studies conducted in the elderly, most of the subjects consumed at least one micronutrient at a level lower than half the recommendation. Nonetheless tens of studies, or probably more, were conducted to prove or disprove the beneficial effect of 'multivitamin' supplementation, with no clear cut outcomes. Despite a long history, through the last seventy years, of nutritional recommendations issued by the health authorities of the League of the Nations, Europe, North America and other countries, suggesting moderate micronutrient consumption, in almost all of the studies, the elderly were supplemented with high to very high amounts of vitamins and microelements or alternately hazardous compounds, such as iron or synthetic β -carotene (all-trans) which were also incorporated into the tested preparatory. Micronutrient supplementation is

probably the easiest task to improve public health, if somebody could only tell us what the optimal formulation is. However, excessive vitamin or microelement supplementation may compete, according to basic biochemical rules, with another micronutrient or vitamin derivative and thus disrupt the normal biochemical pathways. In particular, free radicals are regularly neutralized by a long array of endogenous and exogenous antioxidants. Supplementation with high amount of exogenous antioxidant disrupts the cellular capacity to cope with the damage produced by free radicals. Because in most of the elderly subjects inadequate intake prevails, a routine 'multivitamin' supplementation of moderate amount is required. As most of the people consume micronutrients in their diet at a level of at least half the recommended amount, micronutrients should be supplemented in the elderly at about one half of the recommendation quantity. A public committee, nominated by the Israel Ministry of Health, suggested micronutrient supplementation for the elderly, mg/day: vitamin A, 0.45; vitamin D₃, 0.015; vitamin E, 10; thiamin, 0.6; riboflavin, 0.7; biotin 0.03; pantothenic acid 3; niacin 8; vitamin B₆ 0.9; folic acid 0.12; vitamin B₁₂, 0.0024; vitamin C, 60; choline, 275; zinc, 8; copper, 0.9; fluorine, 0.5; manganese, 1.2; chromium, 0.020; molybdenum, 0.045; selenium, 0.03 and iodine, 0.075.

248. OSTEOPENIA IN ELDERLY PATIENTS AND EFFICIENCY OF PREVENTIVE MAINTENANCE AND TREATMENT

V.N. Drozdov (Gerontol. and geriatr. dept. of MGMSU, Moscow, Russia; ukonev@rambler.ru)

The objective of the research. Establishment of frequency osteopenia and an osteoporosis in elderly patients, revealing of pathogenetic mechanisms of loss of mineral density of a bone tissue, and therapeutic options of osteopenia correction. *Materials and methods.* Metabolites of vitamin D — 25OHD₃ and 1,25 (OH)₂D₃, parameters phosphorus-calcium metabolism, TNF α and IL — 6 were assessed in 156 patients. *Results.* Disorder of vitamin D₃ and phosphorus-calcium metabolism in patients with IBD has been revealed. At 24% increase of the blood cytokines contents was revealed. BMD reduction was due to vitamin D₃ metabolism disorder and high activity TNF α . Osteopenia marked in 75% of patients. *Conclusion.* Etiologic factors of development of a bone rarefication due to vitamin D₃ metabolism disorder and high activity of proinflammatory cytokines. Prescription of alfacalcidol reduces risk of a bone rarefication, and as consequence risk of bone fracture at the given elderly patients.

249. MULTIFACTOR ANALYSIS IN EVALUATION BY THE DATA MINING METHOD OF ORGANISM'S AGING IN METABOLIC SYNDROME

V.A. Duk¹, M.F. Ballyuzek², T.N. Grinenko²
¹St. Petersburg Institute of Informatics and Automatization;
²St. Petersburg Clinical Hospital of RAS, Russia;
 ntgrin@mail.ru

Analysis of data obtained in the process of study of human age-related evolution, especially with added diseases formed with age, is a complex problem, particularly if the model is a multifactor, multicomponent pathological state, such as metabolic syndrome (MS). Taking into account polymorphism of manifestations of this syndrome and a wide range of degrees of their expression in the course of formation of the disease up to the senile age, it is useful to apply current systems of the multifactor analysis. This

usefulness can be elucidated by the following key words, characterizing the Data Mining methods: preciseness, multidimensionality, type versatility of data, automatic search. In our study we used the Deep Data Diver™ system designed to search for the IF-THEN-rules in clinicoexperimental data. This innovational system was developed by Technical Sciences Doctor V.A. Duk (2004) at Laboratory of Biomedical Informatics of St. Petersburg Institute of Informatics and Automatization, Russian Academy of Sciences. The system is based on a modified apparatus of linear algebra with use of the procedure of data self-organization under effect of informational structural resonance. The Deep Data Diver™ system allows detection of multi-aspect, including hidden, interrelations in an unlimited volume of various and diverse (quantitative, qualitative, nominal) data. Thus, its use has allowed us to reveal the most characteristic combinations of components of MS and its complications in patients with various levels of nocturnal melatonin (MT) secretion by examining 108 patients with taking into account their age aspect. By this way, there were revealed the most significant 9 MS components (type and duration of carbohydrate metabolism disturbances, the presence of certain degrees of obesity, lipid metabolism disturbances, etc.), whose combination was observed to be accompanied by the highest positive correlation with the type of MT hypersecretion with taking into account the age-related physiological hypoproduction of this hormone in patients of different ages.

250. NORWEGIAN SCABIES: A MISSED DIAGNOSIS

L. Dulou¹, L. Hamza², C. Le Roux-Villet², G. Sebbane¹,
 P. Hoang², F. Caux² (¹Rene Muret Hospital, Sevrans,
 France; ²Avicenne Hospital, Bobigny, France;
 lydie.dulou@rmb.aphp.fr)

Objectives: Norwegian scabies is a form of scabies related to a massive infestation with *Sarcoptes scabiei*. It may be difficult to diagnose and have severe outcome especially in the elderly. We describe the consequences of misdiagnosis in a patient with Norwegian scabies, whose rash was initially diagnosed and treated as eczema. *Case report:* A 92-year-old woman was admitted for the management of an alteration of her general status. She presented with a chronic skin disease started about 1 year prior to admission and initially diagnosed as eczema. Physical examination revealed diffuse scaly crusts on the trunk and the limbs, including the hands and feet and hypothermia (33.8° C). Laboratory investigations showed hyperleukocytosis, elevation of C reactive protein, anemia, and severe hypoalbuminemia. Microscopic examination of the scales detected numerous scabies mites in accordance with a diagnosis of Norwegian scabies. After isolation the patient was given an application of benzyl benzoate and daily applications of petrolatum, associated with an oral administration of 9 mg of ivermectine. A large-spectrum antibiotic treatment was simultaneously provided associated with parenteral rehydration and renutrition. Bacterial analysis revealed septicaemia with multisensitive beta haemolytic streptococcus, and urinary tract infection with methicillin-resistant *Staphylococcus aureus*. Despite adapted antibiotherapy, the patient's clinical status worsened and she died three days after admission. An evaluation of the infection status of her old-age home failed to detect an outbreak of scabies, but her two sons have been affected and treated eight months before. *Discussion:* Norwegian scabies often affect elderly persons but also immunosuppressed patients.

This form of scabies may masquerade as hyperkeratotic eczema or psoriasis resulting in misdiagnosis. Misdiagnosis was associated in our case with two serious consequences: the infestation of the patient's sons and bacterial colonisation of the crust complicated by septicaemia. Malnutrition may also have lead to immunosuppression in our patient and participated to the seriousness of her status. The delay for diagnosis of this form of scabies is known to result in worsening of the patient's status and institutional outbreaks of scabies. In old bedridden patients the clinical signs of scabies are atypical with the appearance of red papules on the back and the buttocks. *Conclusion:* Every physician has to be aware of the cutaneous signs of Norwegian scabies which differ from the skin lesions of classical scabies. The clinical knowledge of this highly contagious disease will permit to improve the patients' outcome and to reduce outbreaks.

251. ANALYSIS OF 27 RECORDS OF ELDERLY PATIENTS WITH NEOPLASMS: THE GERIATRICIAN'S POINT OF VIEW

L. Dulou¹, E. Letellier², P. Agranat², G. Sebbane¹, O. Fain² (¹Rene Muret Hospital, Sevran, France; ²Jean Verdier Hospital, Bondy, France; lydie.dulou@rmb.aphp.fr)

Objectives: the aim of this retrospective study was to evaluate the position of a geriatrician in the multidisciplinary management of elderly patients with malignant pathologies in an internal medicine department. *Materials and methods:* the medical records of a series of patients over 80 years old who were managed for neoplasms in the internal medicine department of Jean Verdier hospital during the year 2005 were reviewed. The following variables were researched and analyzed: age, sex, anatomopathologic diagnosis, associated pathologies, dependence, number of drugs taken, nutritional and emotional aspects, geriatric syndrome identification, number of multidisciplinary sessions for each patient and final therapeutic decision. *Results:* twenty seven patients (8 males, 19 females; average age, 85.11 years) were analysed. Solid malignancies were more frequently observed (15 cases versus 12 hemopathies). All the patients but one lived at home. Presence of the family did not mean sufficient help for daily living. The study of past medical histories identified a subgroup of five frail patients with more than six associated pathologies. Polymedication concerned 9 patients. Nutritional aspects were briefly noted with albuminemia in 22 cases, activities of daily living were not clearly evaluated. Emotional conditions were not notified for 10 patients, but the cognitive status was notified in all records. 21 patients were presented once in a multidisciplinary session, three patients, twice, three patients, three times for consensual decision: specific treatment was proposed for 15 patients (chemotherapy: 11, surgery: 2, radiotherapy: 3, support treatment: 3). For four cases, complementary investigations were requested. Therapeutic abstention was decided for the last eight patients, without any additional precision in their medical records. The absence of homogeneity in the patients' profile may explain these variations. *Conclusion:* the analysis of these records demonstrated that the research for parameters of frailty in the elderly population with neoplastic conditions was not exhaustive. The presence of a geriatrician in such multidisciplinary teams could provide specific help for a better assessment, before the presentation of the patient in a multidisciplinary session. The impact of his presence in the final therapeutic decision needs further evaluation.

252. SELECTIVE PARALYSIS OF THE ARMS COMPLICATING THE IMMOBILIZATION OF AN ODONTOID FRACTURE BY RIGID MINERVA

R. Dulou¹, L. Dulou², O. Goasguen¹, G. Dutertre¹, A. Dagain¹, F. de Soultrait¹ (¹Department of neurosurgery, Val-de-Grece Hospital, Paris, France; ²Geriatrics Dept., René Muret Hospital, Sevran, France; renaud.dulou@wanadoo.fr)

Objectives: We present the rare case of a patient with predominant upper limbs motor deficit which appeared the day following the immobilization of an odontoid fracture by rigid Minerva. *Case report:* A 91-year-old man sustained a mechanic, benign-supposed fall. He presented immediately after trauma moderate but not worrying pain. Past medical history included myocardial infarction and auricular fibrillation requiring antivitamin K. Three weeks after trauma cervical pain increased which decided the patient to present to the emergency department. On arrival, his neurological examination was unremarkable. Hemostatic status was severely disturbed with an INR of seven times normal. Emergency cervical standard radiographs and computed tomographic (CT) scan showed type II odontoid fracture. The patient was immobilized with bivalved resin Minerva. The day following admission he suddenly presented with tetraparesis, with muscle testing of the shoulders and arms evaluated at 2/5 compared with both legs evaluated at 4/5. Emergency laminectomy of C1C2C3 was performed after rapid correction of hemostasis. Postoperative course showed dramatic improvement of the neurological deficit. *Discussion:* Selective paralysis of the arms may be attributed to two syndromes affecting the costicospinal tract: central cord syndrome (CCS) and cruciate paralysis (CP). Both are characterized by disproportionately greater motor involvement of the upper than the lower extremities, bladder dysfunction and a varying sensory loss below the level of the lesion. CCS is classically more frequently seen in the elderly, and usually results from hyperextension of the cervical spine, with compression of the spinal cord in an already generally narrow spinal canal. It is rarely associated with concomitant vertebral fractures. CP is a rarer situation. The latter is the consequence of an injury to the anterior part of the cervicomedullary junction, and is frequently associated with superior cervical spinal lesions. Treatment of type II odontoid fractures in the geriatric population is controversial. Coexisting medical conditions encountered in the elderly patient often increase operative risk. The cervical immobilization was then supposed to be the optimal treatment in the present case. The acute neurological deterioration in spite of the rigid Minerva is very unusual, and may be attributed to a secondary acute spinal cord damage in relation with the spinal severe narrowness.

253. ANTIVITAMIN K EXCESS RESULTING IN ACUTE CRANIAL AND SPINAL SUBARACHNOID BLEEDING

R. Dulou¹, L. Dulou², M. Lahutte³, A. Dagain¹, E. Blondet¹, P. Pernot¹ (¹Department of neurosurgery, Paris, France; ²Geriatrics Dept., René Muret Hospital, Sevran, France; ³Department of neuroradiology, Val-de-Grece Hospital, Paris, France; renaud.dulou@wanadoo.fr)

Objectives: We present a rare haemorrhagic complication related to AVK excess in an elderly patient who presented with acute cranial and spinal subarachnoid bleeding. *Case report:* A 78 year-old woman was admitted because of recurrent falls with temporospatial disorientation and difficulties ambulating after her son's suicide a few days

earlier. Past medical history included valvular prosthesis requiring prevascular for 8 years. On examination, the patient was confused with slowed thought process. The INR was 5 and cerebral CT-scan showed subarachnoid haemorrhage. AVK was replaced by heparin. Progressively the patient developed partial motor deficit of the inferior limbs. A first spinal MR scan showed a possible T12-L1 disc herniation. A first neurosurgical opinion was required in the absence of clinical amelioration but no surgery was held. The deficit worsened and a second MR scan confirmed the diagnosis of Spinal subarachnoid haemorrhage which required emergency decompressive surgery, performed in another neurosurgical department. The clinical state, first improved, worsened 2 weeks later because of anaemia (in relation with a bulbar ulcer). Secondary ischemic cerebral vascular accident (related to anaemia) was resolved with the correction of haemoglobin value by blood transfusion. Ten months later, the patient still presented complete sensitivomotor paraplegia. *Discussion:* Spinal subarachnoid haemorrhage is difficult to diagnose and frequently has a disastrous outcome. In our case, the clinical symptoms were not in the foreground. Moreover, two successive MR scans were necessary to make its diagnosis. Coagulation disorders also play a noxious role for long-term outcome, in terms of both neurological recovery and survival. This can be illustrated in our patient with the associated intracranial subarachnoid haemorrhage and the cascade of complications after surgery, which worsened the initial neurological improvement. Anticoagulation treatments may be associated with bleeding complications and must be closely supervised during some more delicate periods, such as attention troubles. Elderly are notably concerned by AVK excess, especially when associated diseases exist.

254. STEREOTACTIC BIOPSY FOR INTRACRANIAL LESIONS IN AWAKE ELDERLY PATIENTS: CLINICAL ANALYSIS OF 27 CASES

R. Dulou, G. Dutertre, C. Nioche, J.M. Delmas, O. Goasguen, A. Dagain, B. Pouit, C. Lavkque, P. Pernot (Val-de-Grece Hospital, Paris, France; renaud.dulou@wanadoo.fr)

Objectives: the aim of this study was to analyse the diagnostic yield and associated morbidity in a retrospective series of stereotactic magnetic resonance (MR)-guided procedures in awake elderly patients. *Materials and methods:* the medical records of a series of patients over 70 years old who underwent stereotactic MR-guided brain procedures from 2000 to 2006 were reviewed. The following variables were analyzed: age, sex, past medical history of neoplasm, anatomopathologic diagnosis, postsurgical complications. *Results:* twenty seven patients (14 men, 13 women; average age, 75.85 years) were analyzed (14.8% of the overall procedures during the same period). Eight patients had past medical history of neoplasms. Stereotactic MR-guided biopsies allowed diagnosis in 25 cases (diagnostic yield: 92.6%). The anatomopathologic diagnoses were high grade glioma (n=17), lymphoma (n=4), metastasis (n=2), low grade glioma (n=1), craniopharyngioma (n=1). For three patients, the preoperative supposed diagnosis was different from the final anatomopathologic *Conclusion.* Complications occurred in two patients: transient motor deficit in relation with haemorrhage (n=1, 3.7%), permanent deficit in relation with intracranial hypertension (oedema, n=1). Specific treatment was proposed for 19/23 pa-

tients. Four patients were lost of view after the procedure. *Conclusion:* these results suggest that the stereotactic brain biopsy is an effective procedure for evaluating intracranial lesions in the elderly, with a high diagnostic yield and a low morbidity rate.

255. SERUM ALDOSTERONE CONCENTRATION IN OBESE ELDER PERSONS

S. Dziegielewska¹, E. Wysocka¹, M. Cymerys¹, L. Torlinski¹, A. Jakrzewska-Sawinska² (¹Poznan University of Medical Sciences, Poznan, Poland; ²Home Hospice for Adults of Association of Volunteers of Palliative Care in Wielkopolska, Poznan, Poland; syladzie@hotmail.com)

Background: Obesity is concerned to be a risk factor for type 2 diabetes and cardiovascular disease. The studies appreciating the involvement of renin-independent mechanisms has been suggested in adrenal stimulation of aldosterone secretion in obese patients. The best treatment of obesity reaching the idea of the disturbance could be possible after well recognized pathomechanism of its components. *Objective:* to investigate aldosterone concentration in obese middle aged (1) and elderly (2) patients according their oral glucose tolerance test result. *Methods:* White obese Europeans (BMI \geq 25 kg/m², WHO criteria) without aldosterone inhibitor treatment were studied. Subjects with no acute disease or severe chronic disorder were assessed waist, body mass index, BMI, % of body fat (BodyStat equipment), FAT and arterial blood pressure (systolic, SBP and diastolic, DBP). During oral glucose tolerance test fasting and 2h-glycemia were determined (enzymatic-bioMérieux, France) then type 2 diabetics were excluded. In fasting blood samples from 53 subjects plasma lipids: total cholesterol T-C, HDL-cholesterol, HDL-C, triglycerides, TG and LDL-cholesterol, LDL-C (bioMérieux, UV-160A Shimadzu) and aldosterone concentration (radioimmunoassay-Immunotech SA, France) were estimated. The subject were divide into: middle age, MA group aged 40-64 yrs (n=29) and elder, E group aged \geq 65 yrs (n=24). Statistical analysis was performed using STATISTICA 6.0 for Windows. *Results:* 1. Both groups MA and E were recognized of prediabetic and normoglycemic subjects. In MA group were no significant differences in aldosterone concentration among normoglycemic and prediabetes state (p=0,4) whereas in E group aldosterone concentration differ significantly in normoglycemic in comparison with prediabetes subject (p=0,009). 2. The positive correlations between aldosterone and total cholesterol concentration were found in obese elderly patients (p=0,0061). *Conclusion.* The study suggests that aldosterone secretion in obese patients differ according their age. Follow-up studies are needed to confirm these observations.

256. INVESTIGATION OF ELDERLY ABUSE IN GENERAL CENTERS IN AHVAZ — 2006

N. Elahi¹, M. Kardani² (¹Iran-Ahvaz Jondishapur Medical Science University, ²Iran-Tehran Narmak Rehabilitation Center; elahi_118@yahoo.com)

Elderly abuse can be physical, emotional, or simply neglect. The elderly peoples may or may not report abuse. The elders 65 years or more are exposed abuse and experience it. This problem is a major threat for them. The elderly abuse were estimated between 1 to 12 percent. It is alternative in every countries. By attention, it is a serious problem in community, we decided to survey it. The main goal of

this survey indicates frequency of elderly abuse in Ahvaz city. *Method and Material.* This is a cross-sectional descriptive study. The community of research was elderly 60 years (men, women) and more that referred to public place (e.g., hospital, clinic, retired center) or resident in elderly home. The sampling was simple randomly based on objectives. We selected 385 elders (incidence =0/5). The instrument of data collection was hand made researcher questionnaire that it is made by Elder assessment instrument (EAI), and review lectures. The data are collected by interview and observe with samples. Then data were coding and analysis by SPSS version 11 and descriptive statistic. *Finding:* the result of survey showed the most of sample (53/2%) were women, they have had 60-70 years (36/7%). The most of them (52/2%) were widow and lived with our children (62/5%), also they were depended finance to family (44/2%). They had physical problem (79/7%) that (26/3%) suffered vascular and heart disease. (18/2%) physical abuse were seen and (9/2%) were physical trauma, (18%) had emotion abuse (psychological abuse), also were reported (15%) verbal abuse. (68%) neglect and self neglect were seen and most of its were about diet (15/3%). also were seen abandonment (32/7%) and (25/1%) financial exploitation were seen. *Conclusion:* By attention, don't exit any credited scale for are measured abuses in Iran and people don't have knowledge about elderly abuse and elderly problem, therefore we suggested elderly abuse will survey in country based on vary cultures also are implemented education program to families about care of elder by professional staff for example staff health, nurses...

257. PHYSICAL AND COGNITIVE FUNCTION AMONG CENTENARIANS — A COMPARATIVE STUDY OF TWO DANISH CENTENARIAN BIRTH COHORTS

H. Engberg, K. Christensen, K. Andersen-Ranberg, B. Jeune (University of Southern Denmark, Institute of Public Health, Odense, Denmark; hengberg@health.sdu.dk)

Background: The oldest old, including the number of people reaching their 100th anniversary, has increased at a rapid pace since the 1950s in most developed countries. A fundamental issue in the planning and delivery of health care and social services is how well this ageing population can be expected to function, cognitively and physically, in the future. *Aim:* To test whether more recent cohorts of centenarians differ from previous cohorts in terms of health and function. *Material and methods:* The Longitudinal Study of Danish Centenarians (LSDC): a nationwide, clinical epidemiological survey comprising all individuals living in Denmark and celebrating their 100th anniversary in the period 1st April, 1995, through 31st May, 1996. In total, 207 out of 276 eligible respondents participated in the survey, corresponding to a response rate of 75%. The Danish 1905 Cohort Survey: a nationwide, longitudinal survey comprising all individuals born in Denmark in 1905. At baseline in 1998, a total of 2,262 persons aged 92 or 93 participated in the intake survey. Since then, in-person follow-ups have been conducted every two years, the most recent follow-up taking place in 2005. In total, 225 out of 362 persons who reached their 100th anniversary in the cohort participated in the last wave, corresponding to a response rate of 62%. In both cohorts, cognitive function was assessed using the Mini Mental State Examination. Physical function was assessed according to Katz ADL and Avlund's PADL.

Because health-related non-response is a major bias in studies of the elderly, this project is supplemented by a linkage to Statistics Denmark's nationwide registers including information on socioeconomic status, medication, hospitalizations and deaths for all individuals in the cohorts, including the non-respondents. *Results:* There were no systematic differences in cognitive score between the two cohorts, but the younger 1905 cohort displayed better self-reported ADL activities. Stratified by gender, this apparent cohort advantage was due to women in the 1905 cohort performing significantly better than their female counterparts in the 1905 cohort. *Conclusion:* The results of the study suggest that the increasing number of centenarians does not entail increasing numbers of cognitively and physically impaired individuals in this extreme age group.

258. ETHICAL GUIDELINES ON END-OF-LIFE DECISIONS AT THE NURSING HOME

A. Ester^{1, 2}, S.B. Husebo², G. Bollig^{1, 2}, B.S. Husebo³
(¹Bergen Red Cross Nursing Home, Norway; ²University of Klagenfurt and Vienna, Austria; ³University of Bergen, Norway; bettina.Husebo@isf.uib.no)

Worldwide 24 million people suffer from dementia; their number has been estimated to increase to 81 million by the year 2040. End of life decisions are complicated and need to be balanced between curative and palliative treatment. Hardly any long-term care institution has ethical guidelines on end-of-life decisions. In the last years of life, nursing home (NH) patients are frail, dependent on care, and often mentally impaired. In Norway, 40% of all deaths occur in a NH. *Aims:* The study site was one of the largest NHs in Norway, a 174-bed facility with a palliative care ward and long-term care units. It was the aim to develop ethical guidelines on end-of-life decisions based on review of the literature and clinical experience regarding informed and presumed consent, communication, and restraint of life prolonging treatment. *Methods:* Guidelines were introduced for the staff and implemented in clinical work by establishing an ethical support team. Decision making processes were registered in a qualitative observational trial. *Results:* It is necessary to discuss and make individual arrangements before a patients' death. Guidelines on end-of-life decisions emphasise starting the communication process early. In most of the cases, decisions are made during doctors' rounds. Input by the ethical support team was necessary more frequently regarding questions about patients with dementia or multimorbidity than about patients with cancer disease. They include the patients (if possible), relatives and staff. *Conclusion:* End-of-life decisions in NHs have to be backed up by ethical guidelines. Guidelines and preliminary results will be presented.

259. CARDIOPROTECTOR PHARMACOTHERAPY VERSUS RESPIRATORY IN THE ADULT PRINCIPAL AT A GENERAL HOSPITAL

M.L. Estevez, R. Chacyn, B. Rodriguez, J.F. Jimenez, F. Hernondez, C. Jimenez (Pharmacy, Nursing, Las Palmas of Gran Canaria, Spain; mestgarn@gobiernodecanarias.org)

Introduction: Old people are often prescribed a high intake of medicines. This represents a high economic cost and also we must not forget that patients submitted to this kind of pharmaceutical treatment are at a high risk of suffering from problems relating to medicinal interactions.

Objectives: To assess the level of medical intake in the elderly, in relation to their cardiovascular and respiratory prescriptions, at a general hospital in both preventative and therapeutic processes. **Material and methods:** a cross sectional study. **Results:** Ninety percent of elderly patients in our hospital take the antiagregante plaquetaria medicines and 85% of patients take anticoagulant medicines. In relation to neumoprotectora pharmacotherapy, it is important to highlight the use of inhalers which however are used less than cardioprotector medicines with only 5.62% of patients using them. However, in men, the necessity of inhalers is seen in oncological situations, this accounts for 50% while in women this usage is more directed to the symptomatic relief of respiratory processes of a chronic nature, this accounts for 66.66% of female patients. **Discussion:** Due to the fact that cardiovascular and pneumological processes attend to the most crucial needs of human beings, they require as much effort as for therapeutic resources. This circumstance is incremented, for obvious reasons, in the elderly, constituting one of the factors that propitiate the use of many drugs together in situations which are a high risk to them. **Conclusions:** The prescription of cardiovascular medicines in the elderly at our hospital is dispersed in two different directions. Antiagregantes plaquetarios are dispensed to individuals with established cardiovascular problems, while anticoagulants are prescribed predominantly in the prevention of problems of a nature where thrombosis is a risk as in surgical or traumatic procedures. As regards the neumoprotectora farmacoherapy, it is important to highlight the fact that, in men, the use of inhalers is due to a predominance of oncological issues which are probably due to the consumption of substances like tobacco. However, in women, they tend to be used because of respiratory problems which are linked far more closely to age and weight issues such as obesity.

260. DELIRIUM: A MARKER OF FRAILTY IN OLDER IN-PATIENTS?

C. Fernandez-Alonso, J. Mora-Fernandez, L. Silveira-Guijarro, J.M. Ribera Casado (*H. Clinico S. Carlos, Madrid, Spain; cesareofa@hotmail.com*)

Objectives: 1) To describe the prevalence of delirium in an Acute Geriatric Unit (AGU) and, 2) To analyze its association with Frailty after hospital discharge. **Methods:** We study a cohort of inpatients of our Acute Geriatric Unit. The presence of Delirium at discharge was collected (DSM IV criteria). Demographic, clinical, functional (Katz index, Barthel and the Physical Red Cross (PRC) scales) and psychosocial variables were taken from clinical records. Six months after discharge, telephone contact was made gathering functional data, social status, readmission, and mortality. Statistical analysis: Means and proportions comparisons, level of confidence 95%. SPSS 12.0. **Results:** n=182. Age 85.5 years (SD 6.0); 61.0% women. Prevalence of delirium: 46.1%. The delirium group showed: 1) More in-hospital complications: respiratory and/or urinary nosocomial infection (67.8% vs 29.6%, $p<0.001$), nosocomial diarrhoea (29.7% vs 7.1%, $p<0.01$), higher in-patient mortality rate (38.1% vs 8.1%, $p<0.001$). Pneumonia, stroke, urine infection and geriatric syndromes as main diagnoses, were more frequent without reaching statistical significance. 2) Higher basal dependence (Katz>D 75.0% vs 36.7%, $p<0.001$; Barthel <60: 58.3% vs 27.5%,

$p<0.05$ and PRC>3: 63.1% vs 31.6%, $p<0.05$) and a higher functional lost at admission were found (86.9% vs 11.2%, $p<0.001$). 3) Dementia was more frequent (85.7% vs 30.6%) as well as the need of caregiver (92.8% vs 46.9%), both of them $p<0.001$. Six months after discharge we found in this group: a higher emergency use (80.0% vs 33.3%, $p<0.001$), dependence (Katz>D 50.0% vs 25.6%, $p<0.01$; and PRC>3 42.0% vs 21.1%, $p<0.05$), and higher post-discharge mortality (44.0% vs 17.8%), with no tendency to functional loSt. **Conclusions:** Delirium was prevalent and associated with important complications during admission in this sample, worsening clinical and functional outcome after discharge. This poor prognosis enhances to identify patients in risk for Delirium in AGU.

261. QUALITATIVE AND QUANTITATIVE CHANGES OF MELATONIN LEVELS IN PHYSIOLOGICAL AND PATHOLOGICAL AGING AND IN CENTENARIANS

E. Ferrari, L. Cravello, S. Chytiris, F. Magri (*University of Pavia, Italy; ettofer@libero.it*)

The circadian rhythm of melatonin secretion plays a role of endogenous synchronizer for different biological rhythms; furthermore possess some anti-aging properties. Thus we examined melatonin levels in physiological aging, in extreme senescence and in senile dementia. In healthy old (age 66–94 yr) and young subjects (age 23–39 yr) and in demented patients (age 68–91 yr) plasma melatonin was measured by radioimmunoassay in 8 serial blood samples. In centenarians (age 100–107 yr) melatonin levels were estimated by assaying urinary 6-hydroxymelatonin sulfate (aMT6s) in two different urine samples collected from 08:00 to 20:00h and from 20:00 to 08:00h. These data were compared with the aMT6s excretion of old and young controls. Elderly subjects, demented or not, exhibited a flattened circadian profile of plasma melatonin, due to the elective impairment of the nocturnal peak. An age-related decline of the circadian amplitude of the melatonin rhythm occurred in old subjects, especially in demented individuals. Furthermore, the melatonin nocturnal peak was significantly correlated with the severity of the cognitive impairment. aMT6s urinary excretion also declined with age. The weakening of melatonin signal persisted also in extreme senescence, but in centenarians, likewise to young controls, the aMT6s excretion was significantly higher at night than at day-time. On the contrary, elderly subjects did not exhibit statistically significant differences between the nocturnal and diurnal excretion of the melatonin metabolite. In conclusion, the pineal melatonin secretion is affected by age and by the degree of cognitive impairment. The maintenance of the circadian organization of melatonin secretion in centenarians may suggest that the amplitude of the nocturnal peak and/or the persistence of a prevalent nocturnal secretion may be an important marker of biological age and of health status.

262. EATING BEHAVIOUR IN SENILE DEMENTIA

E. Ferrari, L. Cravello, S. Chytiris, F. Magri (*University of Pavia, Italy; ettofer@libero.it*)

Weight loss and changes in eating behaviour are important risk factors for morbidity, mortality and cognitive impairment in elderly subjects. *The aim* of our study was to evaluate the occurrence of changes of eating behaviour as possible cause of weight loss in senile dementia. We

studied 188 old demented patients (degenerative, vascular and reversible dementia) hospitalized for a period ranging from 40 to 75 days. Forty-seven not-demented patients, were considered as controls. In each subject, at both admission and discharge, anthropometric measures, body composition, the Mini Nutritional and the geriatric multidimensional assessment were performed. The main biochemical nutritional markers were assayed. The eating behaviour and the degree of autonomy during meals were assessed by the Blanford Scale and the Eating Behaviour Scale, respectively. In the demented group all the aspects of eating behaviour explored were deeper impaired than in controls. All these changes were significantly related to the degree and the severity of cognitive impairment, to functional deficit and to malnutrition. Before discharge, demented patients exhibited an improvement of eating behaviour, associated to the stability of biochemical nutritional markers as well as to an improvement of the MMSE score. *In conclusion*, changes in eating behaviour may play a pathogenetic role in weight loss and in the progression of dementia. This finding assumes clinical relevance since special care during meals or nutritional interventions could act in synergy with specific pharmacological therapy of dementia, by slowing its progression and improving patients' and care givers' quality of life.

263. EVALUATION OF FRACTAL DYNAMICS IN CENTENARIANS

E. Ferrari¹, A.A. Ferrari², F. Magri¹, V.D. Corino³, L.T. Mainardi³, L. Cravello¹ (¹University of Pavia, Italy; ²IRCCS Policlinico S. Matteo, Pavia; ³Polytechnic University of Milan, Milano, Italy; ettofer@libero.it)

New methods of heart rate variability (HRV) evaluation, based on fractal scaling and non-linear dynamics («chaos» theory), may give new insight into heart rate dynamics. *The aim* of this study was to evaluate the autonomic nervous system activity in aging people and in centenarians, both by conventional frequency-domain measures and by the fractal scaling and complexity (chaos) theory method. We studied 72 subjects, divided into 4 groups: 20 young subjects (aged 25–39 yr, mean 29.1±0.7), 20 adult subjects (aged 40–64 yr, mean 54.8±1.8), 20 elderly subjects (aged 65–85 yr, mean 75.8±1.3) and 12 centenarians (aged 100–103 yr, mean 101±0.9). All subjects underwent a 24-hours ambulatory Holter ECG monitoring, performed by a digital system. The power spectral analysis of HRV (LF, HF, LF/HF ratio) and the fractal scaling exponent (1/alpha), obtained by Detrended Fluctuation Analysis (DFA), were investigated in stationary segments of ECG recorded during both the daytime (awake) and the night time (sleep). At daytime the centenarians showed LF component and LF/HF ratio lower than all other subjects, while HF component was higher (p<.001 vs young and adult subjects, p<.01 vs elderly subjects). At night time only HF component was significantly lower than in young (p<.001) and adult (p<.001) subjects. The fractal scaling exponent (1/alpha), obtained by DFA, was lower in adult and elderly subjects than in young subjects (p<.001), while centenarians had a fractal scaling exponent similar to young subjects. *In conclusion*, healthy aging was associated with R-R interval dynamics showing higher regularity and altered fractal scaling, consistent with a loss of complex variability whereas centenarian subjects, despite lower overall heart

rate variability, exhibited complexity and fractal correlation properties of R-R interval time series comparable to those of young subjects.

264. GERIATRIC RHEUMATOLOGY PATIENTS RECEIVING ANTI-TNFA AGENTS HAVE COMPARABLE RESPONSE BUT INCREASED INCIDENCE OF SERIOUS ADVERSE EVENTS

I.D. Flouri¹, P. Sidiropoulos¹, S. Panagiotakis¹, A. Drosos², D. Karras³, I. Papadopoulos⁴, K. Boki⁵, F. Skopouli⁶, F. Kanakoudi⁷, P. Geborek⁸, D.T. Boumpas¹ (¹University Hospital of Heraklion, Crete, Greece; ²University Hospital of Ioannina, Ioannina, Greece; ³NMITS Hospital, Athens, Greece; ⁴General Hospital of Kavala, Kavala, Greece; ⁵Sismanoglio Hospital, Athens, Greece; ⁶Eurokliniki Hospital, Athens, Greece; ⁷Ippokratia Hospital, Thessaloniki, Greece; ⁸Lund University Hospital, Sweden; iriald@yahoo.com)

Background: Anti-TNFa agents are used in the treatment of rheumatoid arthritis and seronegative arthritides. Long-term observational studies are essential to explore effectiveness and safety profile of these new treatments in groups of patients usually excluded from randomized clinical trials. *Methods:* The Hellenic Biologic Registry for Rheumatic Diseases collects efficacy and safety data from 7 Academic and State Rheumatology clinics in Greece. Demographics, disease characteristics and treatments are recorded according to a standardized evaluation protocol. Data recording and analysis is performed according to the South Swedish Arthritis Treatment Group (SSATG) protocol. To date 961 adult patients have been enrolled. This report is on behalf of the investigators of the «Hellenic Registry for Biologics in Rheumatic Diseases». *Results:* Data was analyzed for 175 geriatric (18% of total adults) and 786 non-geriatric adults (82%) treated with anti-TNFa agents. During follow-up (3230 patient/year), treating physicians recorded 952 events in total. Incidence was similar in the two age groups (31 and 29 events/100 patient/year in geriatric and younger adult patients respectively). However, analysis according to severity of events revealed higher incidence of serious adverse events (SAE) in geriatric patients: 8.2 versus 3.1/100 patient/year. Discontinuation of treatment due to an adverse event was also higher in the geriatric age group (4.4 versus 2.9 discontinuations/100 patient/year). Infections (56% respiratory, 18% skin, 13% urinary tract and 13% other) were the most common type of events, occurring more frequently in geriatric patients (20 versus 16/100 patient/years). Difference in incidence was even more significant for serious infections (4.6 versus 1.3/100 patient/year). 7 cases of tuberculosis were reported (5 in the geriatric group). Geriatric patients also had more frequent vascular events (1.5 versus 0.5/100 patient/years). Response to treatment was analyzed for rheumatoid arthritis patients using the EULAR response criteria and was found comparable in the two age groups: after 12 months of treatment 51% of the patients had moderate and 18.7% had good response. *Conclusions:* Geriatric patients who receive treatment with anti-TNFa agents have similar response to therapy but increased risk for a SAE- particularly infections, tuberculosis and vascular events- compared to younger adult patients. Attention to predisposing factors and preventive measures as well as early diagnosis and treatment of events should be carefully exercised.

265. OUTCOMES OF CEREBRAL STROKE TREATMENT IN OLD-AGED AND ELDERLY PATIENTS (DATA PROVIDED BY SOLOVYEV DISTRICT MILITARY HOSPITAL #442)

V.V. Flud (Solovyev District Military Hospital #442; final1963@rambler.ru)

Acute stroke or cerebrovascular disease is one of the main causes of mental and physical disability and quality of life decrease. In this country 390 out of 100 000 people suffer from cerebral strokes per year. Most often cerebral strokes occur in elderly patients. It was noticed that the older the person the higher the stroke rate. It varies from 0.09 pro mil in 25-29 year-old patients to 15.05 pro mil in patients of 70 and older. Mortality rate is also higher for the elderly and fluctuates from 0.04 pro mil at age 30-35 to 7.55 pro mil at age 70 and older. The stroke takes the second place among all death causes and is the first in a row of diseases responsible for primary disability. It's expected that in the nearest 25 years the significance of this disease as a medical and social phenomenon will be only increasing. The reason is a demographic decline and rising share of risk groups among population. In Solovyev District Military Hospital #442 (St. Petersburg) includes the internal intensive care unit (ICU) where in specialized wards the patients with acute stroke can get a full range of medical care including the course of therapy aimed at early rehabilitation. 529 patients with cardiovascular disease were hospitalized to the ICU in 2005. Among them there were 170 patients with acute stroke (147 individuals with ischemic stroke and 23 individuals with hemorrhagic stroke). Most of them (60%) were elderly and old-aged patients. The efficacy of therapy of those early cerebral stroke cases was assessed on the basis of the received medical monitoring data. The complex of medical care pointed at early rehabilitation of patients with acute stroke has decreased the number of death outcomes from 28% in 2000 to 20% in 2005. Thus during that period of time the mortality rate for ischemic stroke fell from 23% to 17% and for hemorrhagic stroke — from 49% to 43%. Such decrease in mortality was mainly observed in middle-aged patients. However the death rate figures for patients over 60 did not show a substantial decrease. This might be related to the fact that most of them were suffering from advanced concomitant diseases. The implementation of new methods of therapy such as thrombolysis for the treatment of ischaemic stroke and surgery method for hemorrhagic stroke will help to achieve the better results in therapy of cerebral strokes.

266. METABOLIC AND CARDIOVASCULAR EFFECTS OF LONG-TERM CALORIE RESTRICTION IN HUMANS

L. Fontana (Italian National Institute of Health, Food Science, Human Nutrition and Health, Rome, Italy; fontana@iss.it)

Calorie restriction (CR) has been shown to prevent/delay age-associated chronic diseases and to extend maximal lifespan in rodents. Whether or not CR increases maximal longevity in humans remains an unanswered question. However, preliminary evidence suggests that humans develop some of the same adaptations to CR that occur in rats and mice. CR decreases insulin resistance, growth factors and inflammation, improves diastolic function, and alters neuroendocrine function. These are among the adaptations

that have been hypothesized to mediate the slowing of aging and protection against cancer by CR in rodents. CR in humans also has powerful protective effects against disease processes responsible for secondary aging, including atherosclerosis, type 2 diabetes and hypertension.

267. HYPERTENSION, DIABETES AND COGNITIVE FUNCTIONS. DATA FROM THE «FAENZA COMMUNITY AGING STUDY»

C. Forlani¹, A.R. Atti¹, V. Morini¹, B. Ferrari¹, P. Casadio¹, E. Dalmonte², D. De Ronchi¹ (¹*Institute of Psychiatry, University of Bologna, Italy*; ²*Presidio Ospedaliero di Faenza, AUSL di Ravenna*; claudia.forlani@fastwebnet.it)

Background. Hypertension and diabetes are highly prevalent and treatable disorders among elderly and research is interested on their possible involvement in cognitive decline with preventive perspectives. The aim of the study was to investigate the association between hypertension, diabetes or both conditions with CIND (Cognitive Impairment No Dementia) or dementia, in an elderly Italian population. *Methods.* All participants (7930 subjects, aged 61 to 107 years; 60.3% females) underwent a semi-structured interview, a screening for cognitive functions and, if positive (Mini-Mental State Examination score ≤ 24 or Global Deterioration Scale score ≥ 2), an extensive neuro-psychological evaluation. Medical conditions were assessed by personal history; a clinical diagnosis of dementia was implemented through a double-blind procedure, according to DSM-III-R criteria. CIND was defined on the basis of MMSE scores, corrected by age and education: subjects were CIND for scores ≤ 2 standard deviations than the mean of MMSE scores among non-demented people. Associations between hypertension, diabetes or both conditions and CIND or dementia were estimated by logistic regression models, that allowed us to compute the Odds Ratios (OR) and relative 95% confidence intervals (95%CI). All models were adjusted by socio-demographic variables (sex, age, education, marital status, socio-economic status), clinical variables (dyslipidemia, BMI), smoking and drinking habits and presence of depressive symptoms. *Results.* Prevalence of hypertension and diabetes were 37.6% and 9.8% respectively; the 7.7% of the population was affected by both conditions. CIND and dementia were diagnosed in 5.1% and 6.5% of subjects respectively. Hypertension was associated with CIND only in the un-adjusted model (OR(95%CI)=1.20(0.98-1.47)), whereas it was negatively associated with dementia (OR(95%CI)=0.76(0.61-0.95)). Subjects affected by diabetes were more likely to be CIND, comparing to non-diabetics (OR(95%CI)=1.78(1.33-2.39)). Suffering from both hypertension and diabetes was associated with a two-fold probability to be diagnosed as CIND compared to non hypertensive-non diabetic subjects (OR(95%CI)=2.09(1.40-3.13)). *Conclusions.* The present study represents one of the first evidences on an Italian population of a possible role of hypertension and diabetes on cognitive functions, independently from many potential confounders. Studies on possible implications of diabetes or hypertension on cognitive functions are critical for understanding possible risk factors and establish preventing strategies for cognitive deficits and dementia that would be of great impact on public health.

268. ASSOCIATION OF NUTRITIONAL STATUS WITH FUNCTIONAL AND COGNITIVE IMPAIRMENT: AN OBSERVATIONAL STUDY IN 880 HOSPITALIZED ELDERLY PATIENTS

M. Franceschi¹, C. Scarcelli¹, P.L. D Ambrosio¹, M. Corritore¹, M.G. Longo¹, A.M. Paziienza¹, D. Seripa¹, M.G. Matera¹, G. D Onofrio¹, B. Dallapiccola², A. Pilotto¹ (¹IRCCS «Casa Sollievo della Sofferenza», San Giovanni Rotondo (FG), Italy; ²CSS-Mendel Institute, Rome, Italy; alberto.pilotto@operapadrepio.it)

Introduction. Nutritional status is a key factor in determining the quality of life of older people. *Aim* of study was to evaluate possible correlations of Mini Nutritional Assessment (MNA) values with functional (ADL, IADL), cognitive (SPMSQ) impairments in hospitalized elderly patients. **Methods.** We investigated 880 elderly patients (M=425, F=455, mean age=78.6±7.1 yr, range=65–100 yr) consecutively admitted to the Geriatric Unit from January 01 to December 31, 2006. In all patients, a Comprehensive Geriatric Assessment (CGA) was performed using the Activities of Daily Living (ADL), the Instrumental Activities of Daily Living (IADL), the Short Portable Mental Status Questionnaire (SPMSQ), the Cumulative Index Rating Scale (CIRS) and social aspects. Nutritional status was evaluated by means of the MNA and rated as follows: MNA ≤17: poor nutrition; MNA >17≤23.5: at risk of poor nutrition; MNA ≥24: well nutrition. Statistical analysis was carried out by means of the Pearson chi-square test, Mann Withney U Test and Kruskal-Wallis test. **Results.** 20% of patients was malnourished (Group 1, MNA <17), 36.3% was at risk of malnutrition (Group 2, MNA >17 ≤23.5) and 43.8% of patients had a well nutritional status (Group 3, MNA ≥24). Among the three groups, significant differences in mean age (group 1=81.2 vs group 2=79.5 vs group 3=76.7 years, p=0.001), ADL-disability score (group 1=1.8±2.4 vs group 2=3.9 ± 3.2 vs group 3=5.5±1.2, p=0.0001) and IADL-disability score (group 1=1.3±2.0 vs group 2=3.2±2.8 vs group 3=5.8±2.6, p=0.0001) were observed. Moreover, malnourished patients present significantly lower values in haemoglobin (11.2 vs 12.9, p=.0001), albumin (3.5 vs 4.1, p=.0001), total cholesterol (142.4 vs 168, p=.0001), and iron (51.2 vs 66.8, p=.0001) compared to subjects with a well nutrition status. A severe deficit cognitive (SPMSQ=8-10, p<0.0001), an increased risk of depression (p<0.0001) and a risk of developing pressure sores (p<0.0001) were significantly higher in malnourished subjects vs patients with a well nutrition status. A poor nutritional status is associated with a higher number of concomitant disease (p<0.0001) than patients with a well nutritional status. **Conclusion.** In this population the status of malnutrition is high and is associated to deficit of status cognitive and functional. Evaluation and monitoring of nutritional status is need in the elderly hospitalized for prevention of the disability.

269. PREVALENCE, CLINICAL FEATURES AND AVOIDABILITY OF ADVERSE DRUG REACTIONS AS CAUSE OF ADMISSION IN A GERIATRIC UNIT: A PROSPECTIVE STUDY ON 1756 PATIENTS

M. Franceschi¹, C. Scarcelli¹, V. Niro¹, G. Pepe¹, L. Pacilli¹, A.M. Paziienza¹, D. Seripa¹, M.G. Matera¹, G. D Onofrio¹, B. Dallapiccola², A. Pilotto¹ (¹IRCCS «Casa Sollievo della Sofferenza», San Giovanni Rotondo (FG), Italy; ²CSS-Mendel Institute, Rome, Italy; alberto.pilotto@operapadrepio.it)

Aim. To evaluate prevalence, clinical features and avoidability of ADR-related hospital admissions in elderly

patients. **Methods.** All patients 65 years or over of age who were consecutively admitted to the Geriatric Unit, Casa Sollievo della Sofferenza IRCCS, Italy from November 01, 2004 to December 31, 2005 were evaluated. The ADRs were defined according to World Health Organization-Adverse Reaction Terminology system (WHO-ART). Drugs were classified according to anatomic-therapeutic-chemical (ATC) system. Naranjo algorithm was used to evaluate the relationship between drug use and ADR (certain, probable, possible, unlikely) and Hallas criteria were used to evaluate the avoidability of the ADR (definitively avoidable, possibly avoidable, unavoidable). All cases were discussed by a team trained in drug safety that included three geriatricians, one clinical pharmacologist and one pharmacist. Only cases of ADR with an agreement ≥ 80% were considered for inclusion. **Results.** Of the 1756 patients observed, 102 subjects (5.8%, males=42, females=60, mean age=76.5±7.4 years, range=65–93 years) showed a certain (6.8%) or probable (91.2%) ADR-related hospitalization. Gastrointestinal disorders (48 patients, 47.1%), platelet, bleeding & clotting disorders (20 patients, 19.6%) and cardiovascular disorders (13 patients, 12.7%) were the most frequent ADRs. Non-steroidal antiinflammatory drugs (NSAIDs, 23.5%), oral anticoagulants (20.6%), low-dose aspirin (13.7%) and digoxin (12.7%) were the most frequently drugs involved in the ADR. 45.1% of ADRs were defined as definitely avoidable, 31.4% as possible avoidable, 18.6% as unavoidable and 4.9% as unassessable. Of 78 patients with definitely or possible avoidable ADRs, 17 patients (21.7%) had received an inappropriate prescription, 29 patients (37.1%) had not received a prescription of an effective gastroprotective drug concomitantly to NSAID or low-dose aspirin treatments and 32 patients (41%) had not received a correct monitoring of drug treatment. **Conclusions.** In the elderly, a high percentage of hospitalization are ADR-related. Most of these ADRs are potentially avoidable. Strategies that reduce inappropriate prescriptions and monitoring errors as well as that improve active prevention of ADRs are needed in elderly subjects.

270. COMMUNICATING A DIAGNOSIS OF TUMOUR TO AN ELDERLY PATIENTS

B. Francesco¹, S. Gordana¹, C. Roberto¹, B. Oreste¹, A. Pietro², B. Concetta³ (¹City of Udine Hospital, Udine, Italy; ²S.Vito Hospital, Pordenone, Italy; ³Institute of Oncology on Cancer Research, University, Messina, Italy; budaf@libero.it)

Preliminary remarks: despite the development of new clinical research programmes in the sphere of geriatric oncology, psychological discomfort in elderly patients affected by tumours has not been sufficiently investigated. In particular, problems relative to the communication of the diagnosis have not yet been resolved. **Aim:** To find a way to facilitate the oncologist in communicating the diagnosis to the elderly patient, respecting the person's desire and capacity to receive clinical «bad news», in accord with the family. **Materials and methods:** From January 2004 to December 2006 a total of 188 patients (96 males=51% and 92 females=49%) aged between 65-80 years (mean age=72.27 years; median age=72 years) were evaluated subsequent to an initial diagnosis of either solid tumour (110 pats=58%) or secondary tumour (78 pats=42%). The mean age of the male patients was 72.27 years (min. 65, max. 80, median=72 years) and that of the females

(49%) was 72.30 years (min. 66, max. 78, median=73 years). After having obtained their informed consent, we administered to the patients a questionnaire for the purpose of collecting clinical (type of tumour, Mini-mental State Examination, ADL and IADL scores) and social/economic information. In cooperation with the psychologists, we carried out semi-structured interviews with the patient and with a leading family member separately, in order to gauge the degree of awareness of the disease in course and the desire to receive the diagnosis. *Results:* out of the 188 patients assessed, only 60 (32%) had understood the reason for the hospital admission and the tumoral nature of the disease while the remaining 128 patients (68%), prior to our observation, were not fully aware of the disease and of clinical stage it had reached. The diagnosis, on the other hand, was already known to 85% of the family members (n=159) while it was unclear or unknown to the remaining 15% (n=29) of the family members. 88.2% of the total patients (more males 89/96 than females 77/92) expressed the desire to be informed as to the type of disease in course, on its treatment and on its degree of gravity, while the remaining 11.8% (n=22) preferred not to be informed in detail, but just to be given general information both on the disease and on its gravity. Before any therapeutic action was taken, all of the patients were subjected to a CGA (Comprehensive Geriatric Assessment) with a view to recognising and handling problems related to age or fragility. Those patients who wished to be informed in detail as to the nature of the disease and the possible types of treatment underwent the therapies planned with a greater degree of serenity compared to those who preferred not to be informed in detail as to the nature of the disease and its possible therapeutic treatments, who then suffered a greater psychological impact, of an anxious, depressive type. Although all of the members of the family were either totally (n=159) or partially aware of the nature and gravity of the disease of their relative, they tended, all the same, to prefer that the patient not be informed as to the real diagnosis, even in cases in which autonomy and Mini-Mental State scores were good. *Conclusions:* Our experience confirms that elderly patients affected by tumours wish to receive information on the disease and its treatment and that, once they have been informed, irrespective of their age, they agree to undergo the relevant therapy suffering a lesser psychological impact compared to those who, on the other hand, prefer not to receive detailed information or not to receive any information at all on their state of illness, as a kind of refusal. In any case, the family, although motivated by protective instincts, often represents an obstacle in the oncologist-patient relationship. Preventive intervention by the psychologist could, therefore, limit the consequences of insufficient diagnostic information.

271. FACTORS UNDERMINING THE QUALITY OF LIFE IN ELDERLY ONCOLOGY PATIENTS IN THE TERMINAL PHASE: OUR EXPERIENCE BASED ON A COMPARISON OF FATIGUE AND DEPRESSION

B. Francesco¹, S. Gordana¹, C. Roberto², B. Oreste², A. Pietro³, B. Concetta⁴ (¹City of Udine Hospital, Udine, Italy; ²S.Vito Hospital, Pordenone, Italy; ³Institute of Oncology on Cancer Research, University, Messina, Italy; budaf@libero.it)

Preliminary remarks: Fatigue and Depression in oncological patients undergoing chemo/radiotherapy treat-

ment are two of the factors undermining the quality of life in the elderly patient. Recent studies have attempted to compare the two factors, with contradictory results. *Aims:* to discover which of the two factors (fatigue and depression) was more markedly perceived by elderly patients in the terminal stage. *Materials and methods:* For the purposes of the investigation, 30 elderly patients (17 males and 13 females) with an age range of 62-92 (mean age 67.5 years), affected by various neoplastic diseases, were assessed. The following assessment tools were used: Fatigue Symptom Inventory (FSI) for fatigue, Geriatric Depression Scale (GDS) for depression and the Mini Mental State Examination (MMSE) for cognitive abilities. Additionally, a psychological assessment sheet was drawn up for each patient. The questionnaires were administered, using the interview method, during the first meeting with the psychologist, which usually takes place within the first week of the patient being accepted. Subsequently, a psychological assessment sheet was drawn up containing the examiner's impressions of the patient and of the family with regard to coping and the feelings expressed through words and gestures. *Results:* The sample population gained a mean score of 21.6 in the Mini Mental State, adjusted for age and education. With regard to total fatigue, the mean score was 8.2, out of a range of 1-10. In the GDS screening, the sample population obtained a mean score of 4.6. *Conclusions:* From the data emerging, it is clear that elderly terminal patients perceive fatigue as a factor undermining their quality of life to a greater degree than depression, which they do not perceive as having a decisive effect on the quality of life. These data match those of the psychological observation sheet, which, in contrast revealed a high incidence of anxiety in terminal patients.

272. ORAL CANCER. IN RELATION TO A PARTICULAR CASE

F. Galera-Molero¹, I. Galera², J.A. Casas³ (¹Morales Meseguer Hospital, ²Santa Maria de Gracia Health Centre, ³Private practice, Dental Care, Hoya Del Campo-Murcia, Spain; fegalera@hotmail.com)

A 70-year-old patient sent by his family doctor with non-satisfactory evolution in order to be evaluated or studied and a possible treatment. Taking into account his family past, we highlight his addiction to tobacco (20 cigarettes a day since 60 years ago) and epithelioma with surgical treatment 4 years ago without any relapses at this moment. Related to his dental history past, we should point out that the patient has a complete prosthesis in the upper teeth and a partial one in the lower teeth where he already keeps his two canine teeth. In the consultation, he talks about dental pain in the tooth 3.3 since six months ago with the sensation of a foreign body and with no improvements even with pharmacological treatment. The pain referred is a pain that increases when he uses the lower prosthesis and it has become more noticeable in the last three months. He also feels a moderate pain when he speaks or eats. The examination does not indicate strange signs in his teeth, although there exists a certain disorder in his lower prosthesis that can be produced by the age of the prosthesis (more than 15 years). In the examination of the soft tissues it can be observed at the bottom of the mouth in the quadrant 30, an exophytic lesion of 3x2 Mm. hard and painful to touch. We do not appreciate any neck ganglion, homolateral nor counterlateral. As there exists the possibility of oral cancer, we send this

report to the Maxillar- Facial department of our hospital to confirm diagnosis and an adequate treatment. A biopsy has been carried out and later complementary explorations (radiological or scanner). Once the diagnosis of oral cancer has been confirmed and as there is no show of metastasis, we have proceeded to the surgical removal of the lesion by resection of half jaw and bottom of the mouth tissue and bone graft and a later treatment with radiotherapy. The vital prognosis is very good for the next years, despite the importance of the diagnosis. *Conclusions:* In patients with or without past history of oral cancer and predisposition due to several factors such as tobacco, old dental prosthesis or not really adapted, an early oral examination should be done to evaluate all the lesions that can appear in their mouths with an evolution superior to 15 days and that do not disappear when the irritative element is removed. The early diagnosis and treatment will produce a better prognosis at these ages.

273. A POSSIBLE SOLUTION TO THE ABSENCE OF EVIDENCE IN GERIATRIC MEDICINE: STANDARDIZED ASSESSMENT AND CLINICALLY-RELEVANT DATABASES

G. Gambassi (Universita Cattolica Sacro Cuore, Rome, Italy; giovanni_gambassi@rm.unicatt.it)

Synopsis: This presentation will present how can standardized assessment be used to generate clinically-relevant databases, and how this can be done at the national and international level, considering different health care settings. Examples will be presented to suggest that observational studies with careful analytical strategies can generate much needed information to inform the decision-making process of physicians confronted with the relative lack of evidence in geriatric medicine. *Abstract:* In the era of evidence based medicine, proof of efficacy is derived almost exclusively from randomized clinical trials and from meta-analyses and systematic review based on trials data. However, randomized clinical trials tend to privilege the enrolment of patients who little resemble the ones in the real world. For a series of methodological opportunities the ideal patient for trials is an adult men, with a single, generally acute disease who is taking no medication and afford maximum compliance with treatment and follow-up. The patients in the real world instead are very old women, with 4-5 concomitant medical conditions that are chronic, degenerative and progressive and who take 7-8 medications daily. This discrepancy is believed to be the reason for the rather incomplete applications of recommendations and guidelines in the care of older persons. Besides, only 50% of medical practices have ever been tested in formal trials and trials tend to value efficacy well beyond safety and tolerability. The use of standard assessment forms has allowed in recent years the creation of a series of database, both in the US and in Europe. Some of these database were administrative, ie, created for purposes different from research; other were designed to collect information on specific aspect of care. The analyses of the data elements need to be careful for a series of assumptions necessary when dealing with databases not assembled for research. Once dealt with those, clinically-relevant databases become and incredible resource. Example of data that can be derived include: characterization of patients, utilization of medications, trends and temporal patterns, outcomes, data on tolerability (ie, post-marketing surveillance) and adverse

drug reactions. Despite a global tendency to be more inclusive of elderly individuals in trials (pragmatic trials) is highly unlikely that these will generate the necessary wealth of information required to deal with the every day problems of these individuals. Databases will continue to be an important resource and the global application of standard assessment protocol might transform them in an international data bank.

274. VENLAFAXINE-INDUCED HALLUCINATIONS IN A VERY OLD PATIENT

P. Gareri^{1, 2}, A.M. Cotroneo³, R. Lacava⁴, L. Gallelli¹, S. De Fazio¹, G. Seminara¹, A. Siniscalchi¹, G. De Sarro¹ (¹Clinical Pharmacology Unit and Pharmacovigilance Center, University Magna Graecia of Catanzaro; ²Operative Unit «Elderly Health Care», AS 7- Catanzaro, Italy; ³DSA, Elderly Health Dept., ASL 3, Birago Di Vische Hospital, Turin, Italy; ⁴Operative Unit «Elderly Health Care», AS 7- Catanzaro, Italy; pietro.gareri@alice.it)

An 85 year-old woman (affected with hypertensive heart disease, recurrence of supraventricular tachyarrhythmias, COPD (Chronic Obstructive Pulmonary Disease), arthritis, past right femur fracture treated by endoprosthesis) was visited at home for depression. Depressive symptoms appeared in the last six months, when the patient lost the other daughter, affected with a neurodegenerative disorder (multiple sclerosis) and in the last three weeks symptoms increasingly worsened, notwithstanding that her general practitioner had prescribed a selective serotonin-reuptake inhibitor, sertraline. She took several drugs, ticlopidine 250 mg/day, ramipril 5 mg/day, torasemide 10 mg twice a week, theophylline 300 mg/day, propafenon 300 mg/day, paracetamol 500 mg as needed, triazolam 0.125 mg as needed at bedtime. The presence of depressed mood suggested the administration of venlafaxine prolonged release 75 mg/day. After four weeks, psychiatric disturbance was only partly changed, so that venlafaxine dosage was increased up to 150 mg/day. One week later clinical conditions dramatically worsened for the onset of visual hallucinations, especially by night, associated to psychomotor agitation. Geriatric and psychiatric consultations agreed with the suspicion of an adverse event to venlafaxine administration, so that clinicians, in agreement to general practitioner, decided for the antidepressant interruption. After drug interruption, sensorial disturbances decreased; one week later venlafaxine was administered again at 75 mg/day, without the onset of hallucinations. The onset of hallucinations with a prolonged release drug is not quite a surprise, in particular because: a) elderly patients present changes in pharmacokinetics and pharmacodynamics, especially in over-80 year old patients; b) individual changes in drug metabolism are present, some of them may be explained by genetic polymorphism; CYP2D6 and CYP3A4 are involved in venlafaxine metabolism; c) our patient is treated by propafenon, which is a CYP2D6 enzymatic inhibitor; it might cause an increase in its plasma concentrations; d) hallucinations disappeared on treatment interruption and this is another proof for iatrogenic cause (Kramer algorithm=5, probable reaction). In the elderly, especially in very elderly patients, polytreatment ought to be carefully evaluated and the onset of new symptoms and/or signs suggests the need for researching the relationship with drug administration.

275. USE OF BETA-BLOCKERS AND DEPRESSION IN A 65-YEAR-OLD MAN: A CASE-REPORT

P. Gareri^{1, 2}, P. De Fazio³, A.M. Cotroneo⁴, R. Lacava⁵, N.M. Marigliano¹, D.S. Costantino⁵, G. De Sarro¹

¹Clinical Pharmacology Unit and Pharmacovigilance Center, University Magna Gracia of Catanzaro; ²Operative Unit «Elderly Health Care», AS 7- Catanzaro; ³Chair of Psychiatry, University Magna Gracia of Catanzaro, Italy; ⁴DSA, Elderly Health Dept., ASL 3, Birago Di Vische Hospital, Turin, Italy; ⁵Operative Unit «Elderly Health Care», AS 7- Catanzaro, Italy; pietro.gareri@alice.it

Depression in the elderly is often underdiagnosed and undertreated, particularly in non-psychiatric settings and is often associated with a decline in both well-being, daily functioning and quality of life (Gurland, 1992; Mulsant and Ganguli, 1999). A number of different drugs may cause depressive symptoms, i.e. digoxin, steroids, central antihypertensive drugs, β -blockers, and so on. Findings regarding the association between β -blockers and depression are equivocal, as reported from cross-sectional observational studies and case-control studies. Evidence exists both for and against the hypothesis that lipophilic β -blockers cause more depression than do hydrophilic β -blockers (Ried et al., 1998). A 65-year-old patient was hospitalized for an acute anterior myocardial infarction (MI); he underwent PTCA (percutaneous coronary angioplasty), a stent was placed on coronary descending anterior artery and he was discharged with medical therapy. Treatment was based on bisoprolol 2.5 mg/day, aspirin 100 mg/day, clopidogrel 75 mg/day, ramipril 5 mg/day, transdermal nitroglycerine 10 mg/day, lovastatin 20 mg/day. He became independent in activities of daily living and socially active again soon. Two months after his discharge, he developed loss of interests, sadness, fatigue, insomnia, depressed mood with crying, ideas of death; 15-items Geriatric Depression Scale (GDS) scored 11 (depressed). He underwent geriatric consultation; in the suspect of iatrogenic depression, β -blocker bisoprolol was gradually interrupted in two weeks, instead of administering an antidepressant drug to a polytreated patient. Two months later, geriatric consultation was performed; general conditions were good and mood was markedly improved, the patient had begun again his normal life, his socialization was normal, he did not complain insomnia. However, he performed cardiologist consultation, echocardiography/doppler showed a slightly depressed ejection fraction (42%), mean heart rate was 85 bpm. Since β -blockers are recommended after MI, cardiologist prescribed bisoprolol again, at the same dose (2.5 mg daily). Two months later, he developed depressed mood and ideas of death, ruin, insomnia, anxiety. After geriatric and psychiatric consultations, both specialists agreed in the administration of a selective serotonin-reuptake inhibitor (SSRI) drug, citalopram, 20 mg/day. After 20 days it was augmented up to 30 mg daily; one month later, patient was dramatically improved and GDS scored 3. SSRIs have now become the first-line treatment for depression in the elderly because of their favourable side-effect profiles and low risk of complications after an overdose (Alexopoulos et al., 2001); they have widely shown to be effective also in patients with coronary artery disease (Lesperance et al., 2007). In the present case report, depressive symptoms disappeared on drug discontinuation and reappeared when the drug was administered again. We know that there are no conclusive evidences about the role of β -blockers in depression of the elderly; there are actually no proofs on molecular mechanisms which could explain the onset of depression in patients treated by β -blockers. In

animal models of depression it was shown that a reduction in noradrenergic neurotransmission increases depressive behaviour (Stone and Quartermain, 1999). However, this case-report seems to suggest that in some patients (perhaps predisposed), especially if old, lipophilic β -blockers such as bisoprolol might have a significant role in the onset of depression.

276. IMPROVING QUALITY OF DRUG THERAPY IN DISABLED ELDERLY PEOPLE USING THE GERIATRIC- PALLIATIVE APPROACH

D. Garfinkel (Shoham Geriatric Medical Center, Pardes Hana, Israel; dorong@shoham.health.gov.il)

Purpose: The extent of medical and financial problems resulting from drug related problems and inappropriate medication use, is increasing with age and with the increase in disability and the number of drugs consumed, being particularly disturbing in nursing homes and nursing departments (NH/ND). Our research hypothesis was that in NH/ND, the sum total of negative impacts of polypharmacy, outweighs the sum total of the potential beneficial effects of all specific drugs. We present the geriatric-palliative (GP) approach for improving drug therapy and minimizing drug intake in NH/ND. *Methods:* Drug discontinuation (DD) was carried out in 6 nursing departments at the Shoham Geriatric Medical Center, Pardes Hana Israel. The aim was to minimize drug intake using an original GP methodology and algorithm. The control group was composed of patients of the same ND in whom no DD performed. After 12 months, the results were tabulated for: the rate of success of any change in medications, death rate, acute care facility referrals, and cost reduction. *Results:* A total of 332 different drugs were discontinued in 119 patients of the study group (average 2.8, range 1-7 drugs/patient). The overall rate of DD failure was 18% of all patients and 10% of all drugs. Stopping nitrates in 22 patients was not associated with clinical or ECG changes; no GI symptoms were noticed in 94% of patients in whom H2 blockers were discontinued; No increase in blood pressure was reported in 42 of 51 patients (82%) in whom complete DD of anti hypertensive drugs achieved. Success rate of DD was very high for potassium and iron supplements. DD was not associated with significant adverse effects. In some patients, decreased agitation, increased alertness and improvement in disability, were reported. The 119 patients of the study group and 71 patients of the control group were comparable regarding age, sex and co-morbidities. The one year mortality rate was 45% in the control group but only 21% in the study group ($p < 0.001$, chi square test); the annual referral rate to acute care facilities was 11.8% in the study and 30% in the control group ($p < 0.002$). DD was associated with a substantial decrease in the cost of drugs. *Conclusions:* Application of the geriatric-palliative methodology in disabled elders enables simultaneous discontinuation of several medications and yields a number of benefits: reduction in mortality rates and referrals to acute care facilities, improved quality of living and lower costs.

277. COMBINING GERIATRIC AND PALLIATIVE PERCEPTIONS FOR DEVELOPING A COMPREHENSIVE RATIONAL APPROACH TO CARE FOR DISABLED ELDERLY

D. Garfinkel (Shoham Geriatric Medical Center, Pardes Hana, Israel; dorong@shoham.health.gov.il)

Purpose: There is an alarming increase in the portion of the population who suffer from disabling, non-curable diseases, thus creating exponentially increasing medical,

economic and social age-related problems. This resulted in an increased demand for health professionals of a variety of fields and served as an incentive for the rapid development of both geriatric medicine and palliative care. Unfortunately, although these two modalities have a lot in common, they have developed along different lines, each apparently having its own perceptions, principles, knowledge, guidelines, education and literature. We believe, that combining palliative principles in geriatric education and vice versa, would significantly improve the knowledge of both, «geriatric» and «palliative» inter disciplinary teams, and would eventually lead to much better overall health care for adults and elderly people. *Methods:* We call our educational program «Palliative aspects in Geriatrics». Each course is composed of 5 full day conferences, two weeks apart. The lecturers are leading figures of several specializations in medicine, geriatrics, nursing, palliative care, social work, law, ethics and a chaplain. They are instructed to concentrate on palliative aspects of their unique specialty (eg. palliative aspects of: dementia, pressure sores, osteoporosis, osteoarthritis, end stage heart, lung or renal failure). Discussions involve speakers of a variety of fields who do not usually meet thus contributing to the comprehensive, holistic educational perception while enreaching the audience knowledge in a large variety of subjects; these include coordinating patient/team expectations, multidisciplinary team problems, communication, medical, financial, social, spiritual and ethical end of life issues. The program plan have been distributed to a variety of professionals involved in care for the elderly in the north part of Israel. *Results:* 80 professionals working in the community, long term care facilities and hospitals participated in our new educational program (43 nurses, 35 physicians, 2 social workers). Although many of the participants were experienced professionals of high positions, they all concluded they have learned much and gained new knowledge from the program for their daily work. The anonymous feedback questionnaires revealed a very high score of satisfaction regarding the educational atmosphere, quality of lectures, originality of the program and its contribution to the participants' daily work. *Conclusions:* Educational programs that combine geriatric and palliative principles of several professions have potential for creating knowledgeable professionals of different fields who care for elderly patients. Promoting such programs will eventually result in improved overall care of elderly patients.

278. HOW TO IMPROVE «DEATH QUALITY» WHEN LIFE QUALITY IS DIMINISHING? THE TRUTH IS... THERE IS NO TRUTH...

D. Garfinkel (Shoham Geriatric Medical Center, Pardes Hana, Israel; dorong@shoham.health.gov.il)

Purpose: Improved medical technology has resulted in sharp increase in the average length of survival since patients with chronic/terminal diseases are first classified as «non-curative», until death. The «usual end of life» involves serious physical & mental suffering & disability for a long time. Providing «Quality of Life» to patients and families (P&F) during end of life period seems a paradoxical, sarcastic task and deserves unique preparations & assimilations for all members of interdisciplinary teams (IDT), patients and families. Since 2003, the Geriatric-Palliative (GP) department (Hospice) at the Shoham

Geriatric Medical Center was trying to achieve two goals: To provide the best comprehensive palliative care to P&F suffering from cancer/non-cancer incurable diseases, and: To become a leading center for teaching geriatric palliative care. *Methods:* Our approach is based on a modification of the Maslow's theory of needs insisting on the changing priorities of needs. For dying people, money, properties, status & entertainment become irrelevant. Basic physiologic needs that, for healthy people seem insufficient and taken for granted (breathing, eating, sleeping, talking, functioning, sphincters' control, lack of pain) — become desirable goals and their achievement perceived as maximal Quality of Life. Our major principles/goals: Facing no cure and imminent death — we should concentrate on qualities that can realistically be preserved or improved; promoting tight connections to home-care units preferring that the patient dies with dignity at home; when this becomes unbearable for community teams, P&F — the patient is referred to the GP department (not to hospitals); building a geriatric palliative educational program for IDT of different professions in a variety of fields aimed at improving specific therapies, communication skills & care for P&F; Promoting team's pride assimilating the notion that their activity is self-enriching, unique «holy task», indispensable, and makes a real difference for P&F before and after death; Accepting P&F as part of the team in identifying patient's needs, determining treatment policy and preparing for the inevitable death — physically, mentally and spiritually; repeated discussions for adjusting expectations; active means against polypharmacy; continuity of therapy around the clock; concentrating on permanent pain & symptom relief using medical, psychological and spiritual means even during the period of bereavement. *Results & Conclusion:* In 3/2007, most goals have been achieved using several educational programs to our IDT and improved connections to community home-care units. The feedback questionnaires reveal increasing scores of satisfaction from IDT members, P&F (before and after death).

279. EFFICACY OF HIP PROTECTORS IN DECREASING THE RATE OF HIP FRACTURES IN ELDERLY PATIENTS IN DEMENTIA SPECIALIZED UNITS

D. Garfinkel, Z. Radomisky, S. Jamal, R. Har-Noy, J. Ben-Israel (Shoham Geriatric Medical Center, Pardes Hana, Israel; dorong@shoham.health.gov.il)

Purpose: There is an alarming increase in the incidence of hip fractures in the elderly, particularly in patients with dementia, making hip fractures the commonest reason for admission of elderly people to orthopedic wards, accounting for 0.1% of global burden of disease. Hip protectors (HP) consist of specially designed padding worn around the hip and are supposed to decrease the risk of hip fractures as a result of falls. We evaluated the efficacy of HP in preventing hip fractures, in physically independent patients with dementia hospitalized in dementia specialized departments. *Methods:* Between January 1, 2001 and September 30, 2006, the teams of 4 dementia specialized units, at the Shoham Geriatric Medical Center in Israel, began to monitor falls in all patients with dementia. Each patient with a «Fall» was immediately checked by a physician, and the details recorded. Since January 2004, we recommended the use of HP to each family/guardian of all patients in these departments. The study group was defined as patients who put on regularly HP. The control

group included patients treated by the same teams who were not using HP. We compared the number of fractures per falls between patients who were or were not wearing HP. Patients in whom the use of HP was discontinued after less than 2 months were excluded from final analysis, as well as patients with expected or actual life expectancy of less than 6 months. *Results:* We evaluated the medical records of 228 patients (152 women, 76 men). 149 patients had at least one fall during their hospitalization. The study group was composed of 107 patients who were wearing HP for a total period of 1945 months. The control group was composed of 153 patients not using HP, who have been followed for a total period of 3095 months. The study and control groups were comparable regarding age, gender, comorbidities, routine laboratory findings and medications. The rate of falls was comparable in both groups. However, in the control group there were 324 falls resulting in 14 hip fractures and in the study group 269 falls and two hip fracture (4.3% Vs. 0.7% respectively, $p=0.007$, $\chi^2(1)=7.16$). *Conclusions:* Hip protectors significantly decrease the risk of hip fractures as a result of falls, in patients hospitalized in dementia specialized departments. Therefore, wearing HP in patients in this setting is recommended; it should also be considered in independent elderly people particularly with dementia, in the community as well.

280. REGIONAL DIFFERENCES IN HOME CARE UTILISATION IN BELGIUM

J. Geerts¹, S. Hoeck¹, J. Breda¹, M. Vandewoude¹, G. Van Hal¹, H. Van Oyen² (¹University of Antwerp, ²Scientific Institute of Public Health, Brussels, Belgium; joanna.geerts@ua.ac.be)

Background. Ensuring accessibility of care is a core principle in European and Belgian national health and long-term care policies. One dimension of accessibility is availability of services. In this respect, Belgium displays relatively large regional differences. This study explored whether such variations result in regional inequalities in home care utilisation by elderly persons which are not attributable to differences in care needs. *Methods.* The study relied on pooled data from the Belgian Health Interview Surveys of 1997, 2001 and 2004. We analysed data on 6993 respondents aged 65 years and over who were living at home. Dependent variables were use of home care services, use of home nursing, use of meals on wheels and use of at least one of these services. For a subset of elderly persons (n=213) with severe limitations in activities of daily living (ADL), information was available on formal/informal help, grouped into four categories: informal help only, formal help only, formal and informal help, no help. We used logistic regression models to examine regional differences in service utilisation, controlling for age, gender, frailty and survey year. Frailty was measured with the VIP (Variable Indicative of Placement)-instrument, which gauges living conditions, need for assistance with washing and dressing, and mobility limitations. To test for regional differences in help with ADL we applied multinomial logistic models. *Results.* Belgium exhibits significant regional differences in home care utilisation. The proportion of elderly home care users is 24.7% in Wallonia, 24.3% in Flanders and 17.6% in Brussels ($p=0.015$). Significant regional differences persist after controlling for age, gender, frailty and survey year. For instance, odds of contact with home care services are 2.2 (95% C.I. 1.5 — 3.1) times higher in Flanders than in Brussels. For severely

limited elderly people, the likelihood of receiving formal help only or formal and informal help — as opposed to informal care only — is significantly higher in Brussels and Wallonia than in Flanders. Although home care services in Brussels seem to be more targeted to need, severely limited elderly persons from this region are more likely to have unmet ADL-care needs than people living in Flanders. *Conclusions.* There is evidence of significant regional differences in the use of long-term care services by older people in Belgium, even after controlling for the effect of individual-level care determinants. Findings underscore the importance of taking into account these differences in the further planning and allocation of long-term care services.

281. CLINICAL CONSEQUENCES OF ISCHEMIC LESIONS IN BRAIN AGING

G. Gold, E. Kovari, P. Giannakopoulos, C. Bouras (Geneva School of Medicine, Switzerland; Gabriel.Gold@hcuge.ch)

Background: Vascular lesions are particularly common in the aged brain. However, it is still unclear whether all such lesions affect cognition. *Objectives:* to better explore relationships between specific characteristics of vascular lesions (type, size and location) and cognitive status. *Methods:* we performed a series of clinicopathological studies in elderly individuals with varying levels of cognitive impairment. *Results:* Our data reveals the significant impact of cortical microinfarcts on intellectual function, in contrast to focal cortical and white matter gliosis, which are not significantly associated with cognitive status. Both periventricular and subcortical demyelination are associated with cognitive status in the absence of macrovascular pathology. When lacunes are present, these microvascular lesions have no independent effect on intellectual impairment. The relationship between lacunes and cognition is highly dependent on localization. Basal ganglia and thalamic lacunes correlate with cognitive decline but not lacunes in the frontal, temporal and parietal deep white matter. *Conclusion:* Recent studies suggest that some cases of dementia might be misclassified: 1. Cases with typical Alzheimer course and moderate lacunes in subcortical white matter should probably be considered pure Alzheimer's disease. 2. The presence of microscopic infarcts can markedly impact cognition but is not detectable by currently available neuroimaging techniques and the vascular component of such mixed cases may go undiagnosed. The development of urgently needed new criteria for vascular dementia should take into account the relative contribution of various types of vascular lesions that can impact cognitive function.

282. EFFECTS OF AMLODIPINE ON THE ENDOTHELIUM, HEART RATE VARIABILITY AND CEREBRAL BLOOD FLOW IN ELDERLY PATIENTS WITH ARTERIAL HYPERTENSION

E.D. Golovanova, N.N. Silaeva, D.Y. Kovalev (Smolensk State Medical Academy, Russia; GolovanovaED@rambler.ru)

Aim. To determine vasomotion of endothelium, heart rate variability (HRV) and cerebral blood flow in elderly patients received amlodipine for arterial hypertension (AH). *Materials and methods.* A total of 84 patients aged from 60 to 92 years with (AH) of stage II-III and isolated systolic arterial hypertension (ISAH) were examined. Control group was included 15 patients with arterial blood

pressure <140/90. All of the patients were performed rheo-angiography of right arm for reactive hyperemia test, ultrasound dopplerography of common carotid artery (CCA), internal carotid artery (ICA) and vertebral artery (VA), cardiointervalography by Baevsky with statistical and timing analysis. I group (20 patients) received 2.5 mg of amlodipine (Kardilopin, «EGIS») once daily and II group (21 patients) was administered 5 mg of amlodipine once daily for 8 weeks in the morning. *Results.* The compare of endothelial dependent relaxation showed decreasing of pulse blood flow (PBF) in patient with moderate and severe AH (15,8%) and ISAH (9,4%) versus control group (38.3%, $p<0.01$). The number of paradoxical reactions (such as decrease PBF) was raised in patients with the increasing of age and depending on arterial hypertension stage. There were not revealed significant differences in changes of endothelial dependent relaxation in the I group patients, but there was discovered the significant increase (30%) of variational range (MxDMn), the decrease (48%) of stress index (SI) and the decrease (18,6%) of the peripheric resistance index (RI) of CCA ($p<0,01$). In the II groups there were improved PBF (12.56% and 26.95%, $p<0.05$), index of HRV — MxDMn and SD (dispersion) was doubled as well as SI reduced by 54.8%. Heart rate was < 80. The RI in CCA and in ICA was decreased by 16.4% and 27.3% ($p<0.05$) correspondingly. Peak systolic and diastolic speeds in VA were reduced to 25.6% and 29.7% respectively. *Conclusions.* Amlodipine (5 mg) influenced positive to endothelial dependent relaxation and cerebral blood flow. Amlodipine (2,5 mg and 5 mg) improved heart rate and it optimized sympathetic and parasympathetic relation. The data could be used for additional test for efficacy of monotherapy and combined therapy in the elderly patients.

283. DISORDER OF CALCIUM EXCHANGE AS A SIGN UNDER CHRONIC RUN OF MULTIPLE SCLEROSIS

V.I. Golovkin, T. Ponomareva (Medical Academy of Postgraduate Studies, St.Petersburg, Russia; golovkin@hotmail.com)

Introduction. Multiple sclerosis (MS) is a chronic progressing disease of nervous system starting at the age of 20. In spite of their young age the patients got such symptoms of the ageing as hyperlipidemia. Therefore one of the therapeutic methods is prescription of retardates of ageing which suppresses the progress of the disease. Detection of other metabolic deviations will allow to make additional medical treatments and to get the synergy therapeutic effect. *Material and method.* 10 patients with MS aged 19–35 and with disease duration 2–12 years were tested. Testing of 60 psychosomatic indicators was performed at computerized diagnostic-treatment system «Strannik». *Result of the research.* Most frequently test results showed disorder of calcium exchange — and with high figures of compensatory (60–70%) and pathological (70%) signal (see table 1).

Computer bioresonance diagnostic of calcium exchange condition of patients with MS

Patiens	Compensatory / pathological signal –hypoparatirosis«	Compensatory / pathological signal –polyarthritis«
A.	8/59	87/184
B.	25/3	

Patiens	Compensatory / pathological signal –hypoparatirosis«	Compensatory / pathological signal –polyarthritis«
C.	64/31	84/175
D.	10/6	
E.	4/1	87/185
F.	66/26	
G.	3/23	23/49
H.	4/28	39/85
I.	37/17	49/105
J.	11/77	112/233

Minimum diagnostic figure — 7 units. *Conclusion.* Detection of endocrine-metabolic disorders, nominally defined as «hypoparatirosis» and «polyarthritis» corresponds with osteoporosis, thus additional secondary prophylactics measures can be recommended.

284. NEEDS IN CARE/SERVICES AND QUALITY OF LIFE OF THE ELDERLY PEOPLE AT THE SPECIALIZED INSTITUTIONS OF VARIOUS TYPE IN THE EUROPEAN NORTH OF RUSSIA

E.J. Golubeva, R.I. Danilova (M.V.Lomonosov Pomor State University, Arkhangelsk, Russia; prosipa@pomorsu.ru)

For the last 10 years there has been a considerable increase of the number of the elderly people. The number of the elderly people in Russia comprises 20,5% of the total population; in 35 regions the part of the elderly people reaches 26,6%. Despite the high death rate, the elderly people above 60 years in Russia are the most fast-growing group of population (N.M. Rimashevskaya, 2003). There is a necessity to provide elderly population with worthy living conditions which have to meet expectations and needs of the elderly people, to use social and economic resources for rendering necessary kinds of medical and social help and care for the elderly people in an effective way. The specialized institutions for the elderly people are a traditional form of care/service in Russia. More than 216 thousand of people are placed in 1159 institutions of this type (2004). The aim of this research is to carry on an evaluation of everyday activity of an elderly person, quality of life, needs in social and medical services and its efficiency at the high- and low-capacity specialized institutions in the European North of Russia. The results of the research showed that living of elderly people at in-patient institutions (specialized institutions) has a positive effect for the organization of their life activity: facilitation of dwelling conditions, permanent medical observation, regime and balanced nutrition, etc. It also promotes to exacerbation of forgetness and uselessness feelings among elderly people living at high-capacity specialized and cause the feeling of tiredness of life and even a wish to live out among few of them. On the whole these are the characteristics of chronic social stress and demand social interference. There are no criteria in defining the volume and form of care of an elderly person at the regional level. In this respect, there is an inconformity of the evaluated functional state of an elderly person and type of his living where social criteria in defining a form of care prevail. It has been stated that there is no efficient system of distribution and use of social and economic resources in the system of social service/care for the elderly people in accord with their functional opportunities and needs. Living at the specialized institutions is a chronic stress which leads to the chronic depression, decreasing of adaptation potential, and tension.

285. DIFFERENCES IN POSTUROGRAPHIC BALANCE CONTROL IN PATIENTS WITH RECURRENT FALLS ACCORDING WITH THE PRESENCE OF NEUROLOGICAL CAUSES

A. Gonzalez Ramirez, M. Lazaro del Nogal, G. Latorre Gonzalez, M. Fuentes Ferrer, J.M. Ribera Casado
(Hospital Clinico San Carlos, Madrid, Spain;
algomiau@hotmail.com)

Aims: To compare static and dynamic balance among elderly patients with recurrent falls in presence of neurological and non neurological etiology. **Subjects and methods:** 105 patients with 2 or more falls during last 6 months, divided into two groups: A neurological (Cognitive impairment: 50%, extrapyramidal diseases: 24%, cerebrovascular disease, degenerative myelopathy and polineuropathy: 10%); B non neurological. Tests performed: modified Clinical Test of Sensory Interaction on Balance (mCTSIB) and Rhythmic Weight Shift (RWS) by Posturography Balance Master. Statistical analysis: χ^2 . T Student. SPSS v11.0. **Results:** 105 fallers A: 65 (51 women); B: 40 (40 women). Mean age A: 77,6 ($\pm 5,5$) B: 77,8 ($\pm 3,8$) ($p > 0,05$). mCTSIB mean results [degrees/sec]: Firm-EO (Firm surface, eyes open): A: 0,40 (0,30-0,60); B: 0,30 (0,20-0,50); Firm-EC (Firm surface, eyes closed): A: 0,50 (0,40-0,70); B: 0,40 (0,30-0,60); Foam-EO (Foam surface, eyes open): A: 1,50 (1,10-3,37); B: 1,20 (0,92-2,32); Foam-EC (Foam surface, eyes closed): A: 6,00 (2,30-6,00); B: 3,10 (2,00-6,00). No statistical differences. RWS: Center of Gravity Velocity (degrees/sec) from left to right slow speed (3 seconds pacing) A: 3,56 \pm 1,71; B: 4,07 \pm 2,10; moderate (2 seconds pacing) A: 5,08 \pm 1,97; B: 5,47 \pm 1,87; fast (1 second pacing) A: 7,69 \pm 3,14; B: 8,32 \pm 3,07; forward to backward slow speed A: 1,57 \pm 0,69; B: 1,78 \pm 0,67; moderate A: 1,73 \pm 0,90; B: 2,00 \pm 0,81; fast A: 2,32 \pm 1,26; B: 2,57 \pm 1,36. No statistical differences. Directional Control (%) right-left slow velocity: A 64,40 \pm 16,32; B 65,42 \pm 18,79; moderate velocity: A 73,88 \pm 10,81; B 72,26 \pm 12,16; fast velocity: A 75,16 \pm 16,66; B 77,67 \pm 10,41; forward-backward slow velocity: A 37,38 \pm 20,07; B 48,47 \pm 19,99 ($p = 0,01$); moderate velocity: A 39,45 \pm 18,98; B 52,32 \pm 19,79 ($p = 0,006$); fast velocity: A 42,14 \pm 25,09; B 58,45 \pm 21,45 ($p = 0,005$). **Conclusions:** Fallers with neurological impairments have worst directional control of their center of gravity on forward-backward voluntary movements. Not differences were found in the other tests.

286. ELDERLY PATIENTS WITH RECURRENT FALLS: ROLE OF FUNCTIONAL TEST AND POSTUROGRAPHIC STUDIES

A. Gonzalez Ramirez, M. Lazaro del Nogal, G. Latorre Gonzalez, M. Fuentes Ferrer, J.M. Ribera Casado
(Hospital Clinico San Carlos, Madrid, Spain;
algomiau@hotmail.com)

Aims: To describe the differences on static balance and clinical tests performances among elderly patients with recurrent falls with neurological and no neurological cause. **Subjects and methods:** We included 105 patients with 2 or more falls during last 6 months, divided into two groups: A neurological causes (cognitive impairment: 50%, extrapyramidal diseases: 24%, cerebrovascular diseases, degenerative myelopathy and polineuropathy: 10%); B no neurological. Tests performed: Timed up and Go (TUG), Tinetti Scale of Balance (TB) and March (TM), Walk Speed (WS) and posturographic tests: Weight Bearing Squat (WBS), Walk Across (WA) and Sit to Stand (STS) by Posturography Balance Master. Statistical

analysis: χ^2 . T Student. SPSS v11.0. **Results:** 105 fallers A: 65 (51 women); B: 40 (40 women). Mean age A: 77,6 ($\pm 5,5$) B: 77,8 ($\pm 3,8$) ($p > 0,05$). TUG (seconds): A: 22,1 ($\pm 8,6$) B: 19,3 ($\pm 7,7$) ($p < 0,05$); Tinetti Scale: TB A: 9,9 ($\pm 3,0$) B: 12,6 ($\pm 2,3$) ($p < 0,001$); TM A: 7,9 ($\pm 2,5$) B: 10,0 ($\pm 1,9$) ($p < 0,001$); WS (centimetres/second): A: 35,7 ($\pm 21,6$) B: 34,9 ($\pm 17,9$) ($p > 0,05$). WBS (percentage of body weight borne by right leg): at 0° of knee flexion A: 52,09 ($\pm 8,06$) B: 48,76 ($\pm 6,67$) ($p = 0,04$); at 30° A: 51,40 ($\pm 7,16$) B: 47,72 ($\pm 7,65$) ($p = 0,02$); at 60° A: 51,48 ($\pm 8,07$) B: 49,59 ($\pm 7,26$) ($p > 0,05$); at 90° A: 50,65 ($\pm 8,38$) B: 49,37 ($\pm 7,57$) ($p > 0,05$). WA (centimetres/second): A: 36,29 ($\pm 21,24$) B: 36,63 ($\pm 20,44$) ($p > 0,05$). STS transfer time (seconds): A: 1,26 (0,86–3,22) B: 2,31 (1,00–4,43) ($p > 0,05$). **Conclusions:** Neurological diseases determine a lower punctuation on Tinetti and Timed and go scales among fallers comparing with those without neurological diseases. These differences are not found in the other clinical tests. We found more weight-bearing abnormalities among neurological fallers at erect position and at 30° of knee flexion.

287. PROGNOSTICAL MEANING OF THE HYPERSECRETION OF MELATONIN IN PATIENTS OF ADVANCED AND SENILE AGE WITH METABOLIC SYNDROME

T.N. Grinenko¹, T.V. Kvetnaia², M.F. Ballyuzek¹
(¹St. Petersburg Clinical Hospital of RAS, St. Petersburg, Russia; ²St. Petersburg Institute of Bioregulation and Gerontology, St. Petersburg, Russia; ngrin@mail.ru)

At present, intensity of melatonin secretion has been proven to reflect adaptive possibilities of the organism and regularly decreases in the process of physiological aging. From this, it follows that control of this secretion parameters can be one of important tests in evaluation of the degree and character of the «senescence pathology» and, in particular, of metabolic syndrome (MS). Examined were 108 patients of advanced and senile age with diagnosis of MS established by ATP III criteria, 2003, as well as of comparable control group. The urinary excretion of 6-sulfatoxymelatonin (6-SOMT) was determined by radioimmune method. Multifactor analysis of results was performed using the informational system Deep Data Diver. The nocturnal excretion of 6-SOMT turned out to increase statistically significantly in the MS patients of advanced (1145 \pm 62 mg/h) and senile (1180 \pm 123 ng/h) age as compared with control (742 \pm 107 ng/h; $p < 0,05$, and 499 \pm 101 ng/h, $p < 0,01$). In all patients of the main group, maximum of excretion corresponded to multicomponent MS forms with a greater duration and expression of the main manifestations. Hypermelatoninuria turned out to be regularly associated with a number of cardiovascular risk factors: male gender, smoking, hypodynamia, stresses, the earlier beginning and a longer duration of postmenopause in women. A correlation was revealed of the high level of 6-SOMT secretion with hyperuricemia, hypersympathicotonia, heart rhythm rigidity, prognostically unfavorable forms of the myocardial and vascular remodeling. The atherosclerotic MS complications, such as acute MI and post-MI cardiosclerosis, were accompanied by an increase of the 6-SOMT secretion level in the groups of old (1440 \pm 121 ng/h) and senescent (1542 \pm 159 ng/h) patients as compared with control level (975 \pm 42 ng/h; $p < 0,001$, and 858 \pm 100 ng/h, $p < 0,001$). Thus, this study has confirmed practical value and prognostic significance of control of melatonin production in patients with a high risk of development of MS.

288. VISION AND HEARING IMPAIRMENTS IN ACUTE HOSPITALIZED ELDERLY, IMPLICATIONS FOR LOSS OF IADL AND FALLING

E.V. Grue¹, A.H. Ranhoff², J. Boernson², P.V. Jynsson³, A.B. Jensdyttir⁴, G. Ljunggren⁵, G. Bucht⁶, E. Jonsen⁶, M. Schroll⁷, A. Noro⁸, H. Finne-Soveri⁸ (¹Diakonhjemmet University College, Oslo, Norway; ²Diakonhjemmet Hospital, Oslo, Norway; ³Landskaping University Hospital, Reykjavik; ⁴Soltun Nursing Home, Reykjavik; ⁵Karolinska Institutet, Stockholm, Sweden; ⁶University Hospital, Umeå, Sweden; ⁷Copenhagen University Hospital, Bispebjerg, Copenhagen, Denmark; ⁸Stakes, Helsinki, Finland; grue@diakonhjemmet.no)

Background. Acute hospitalized elderly are often frail and at risk for functional decline. Vision and hearing impairment are known risk factors for falls and delirium and may play a role in recovery and rehabilitation. Vision and hearing impairment is common among elderly hip fracture patients and in a geriatric ward. The prevalence of vision and hearing impairment and the combination of the two are less studied in elderly acute medical patients. **The objective.** To find the prevalence of vision and hearing impairment and the combination of the two in elderly acute medical patients in five Nordic hospitals, and their implications for loss of IADL and risk of falling. **Subjects/methods.** This observational study is part of the Nordic Minimum Data Set Acute Care study (Nordic MDS-AC study) from 2001-2002. From medical departments in five Nordic hospitals 770 patients, 75+ years, were included. Patients with severe cognitive decline and terminal illness were excluded. The Minimum Data Set — Acute Care (MDS-AC) was used for data collection by a geriatrician or an experienced nurse. Data was based on staffs' information and patient and proxy interviews. Seven IADL items and a history of falls during the last three months were recorded. Hearing was impaired when quiet setting was necessary to hear normal speech. Vision was impaired when reading regular newspaper print was impossible. **Results.** Half of the patients had hearing impairment, one third vision impairment and one of five both. Reduced hearing was related to a history of falls and associated with loss of IADL. Vision impairment alone was not associated with falls, but with loss of IADL. Combined impairment was associated with a doubling (OR1.7) of the risk of being a faller (two or more falls) and a four times (OR3.7) risk of IADL-loss compared to unimpaired patients. **Conclusions.** Vision -, hearing — and combined impairment were frequent among elderly acute medical patients. Combined sensory impairment and hearing impairment were associated with loss of IADL and falling, while vision loss was related to IADL-loss only. Whether intervention to improve vision and hearing impairment could prevent falls and further loss of function has to be studied.

289. RENAL CORTEX IN ULTRASONOGRAPHY AND PARAMETERS OF RENAL FUNCTION IN HOSPITALIZED ELDERLY PATIENTS

B. Gryglewska, A. Skalska, T. Pawlik, T. Grodzicki (Jagiellonian University Medical College, Cracow, Poland; bgrygle@su.krakow.pl)

Objective: Assessment of relationship between renal cortex area (RCA) estimated in longitudinal cross-section of ultrasonographic image and renal function in the elderly patients. **Design and methods:** Patients over 50 years of

age, hospitalized due to internal reasons, were examined. Serum urea, creatinine, cystatin C and creatinine clearance (Ccr) were measured. Ultrasound estimation of the length (a), transverse size (b) and thickness of the kidney cortex (c) was made. A mean values was calculated from the dimensions of both kidneys. Average RCA was calculated using the formula of ellipse area ($RCA = [0,5a * 0,5b * \pi] - [(0,5a - c) * (0,5b - c) * \pi]$). Renal function was estimated using the Cockcroft-Gault (CG) formula, simplified Modification of Diet in Renal Disease (MDRD) formula, formula of Baracskey (BAR), Geriatric Center Mannheim (GCM) formula and calculation of GFR from cystatin C level (GFRcys). Data were compared in two groups with RCA below and above its median. The Spearman correlation coefficient was calculated to measure relations between studied parameters. **Results:** The sample consisted of 74 patients, 54–96 years old, mean age 74,5±7,88 years, 51,4% women. Median of RCA amounted 1968 mm². The data were presented in the table.

Parameters	RCA < 1968mm ² (n=34)	RCA ≥ 1968mm ² (n=34)
Age [years]	76,4±8,2	72,4±7,5*
Weight [kg]	66,9±11,8	76,4±11,1**
Height [m]	159,8±8,5	166,2±8,1**
Creatinine [μmol/l]	89,3±18,5	87,7±25,6
Urea [mmol/l]	9,2±3,2	7,5±3,3*
Cystatin C [mg/l]	1,5±0,4	1,3±0,4
Ccr [ml/min]	52,2±23,3	77,5±28,0***
GC [ml/min]	54,6± 20,6	77,2±23,8***
MDRD [ml/min]	68,2±17,0	76,9±24,9
BAR [ml/min]	64,5±15,9	70,5±17,5
GCM [ml/min]	72,4±27,7	96,8±25,5***
GFRcys [ml/min]	62,1±28,7	76,9±30,1*

* p<0,05; ** p<0,01; *** p<0,001.

RCA, creatinine and MDRD were significantly greater in men than in women (2180±446,19 vs 1840,73±350,88; 93,25±25,24 vs 82,26±17,46; 81,73±22,19 vs 65,58±19,94; respectively). The significant correlation between estimated RCA and weight (r=0,38), height (r=0,44), Ccr (r=0,52), GFR estimated by CG (r=0,4), GCM (r=0,31), MDRD (r=0,26), GFRcys (r=0,25) and serum urea (r=-0,29) was found. **Conclusions:** The area of renal cortex in the ultrasonographic image was strongly connected with GFR and might be useful with the prediction of renal function in the elderly patients.

290. ISOLATED SYSTOLIC HYPERTENSION — CHARACTERISTICS OF UNCONTROLLED PATIENTS IN PRIMARY CARE

B. Gryglewska, J. Sulicka, M. Fornal, T. Grodzicki (Jagiellonian University Medical College, Cracow, Poland; bgrygle@su.krakow.pl)

Objective aim of the study was to assess what was the previous treatment of patients with uncontrolled isolated systolic hypertension (ISH) and how general practitioners (GP) estimate cardiovascular (CV) risk. **Design and methods:** The study was a part of educational grant of Servier-Poland. Demographic data, history of diabetes, associated clinical conditions, smoking habit and family history were obtained from patients with uncontrolled ISH, who visited

GP in year 2006. Presence of target organ damage (TOD) was checked and blood pressure (BP), waist circumference and lipids were measured. BP levels were classified and CV risk was estimated according to the ESH/ESC guidelines 2003. ESH/ESC CV risk and risk estimated by GPs were compared in three groups of uncontrolled ISH: grade 1-3 (Bowker's Test of Symmetry). *Results:* 906 patients (mean age 63,0±11,6, 58,3% women) from 644 primary care units were examined. Most of them (70,8%) had lipids disorders, 53,4% — visceral obesity, 28,0% — diabetes, family history of CV diseases — 28,1%, and 18,0% were current smokers. Presence of TOD was affirmed in 26,3% and associated clinical conditions in 41,8%. CV added risk was very high in 45,3%, high in 26,5%, moderate in 26,4%, and low — incidentally (1,9%). Angiotensin-converting enzyme inhibitors (62,9%), beta-blockers (44,6%), and diuretics (42,8%) were the most frequently used drugs. The number of applied drugs averaged 2,0 irrespective of ISH grade. The estimated added risk was presented in table, which showed that GPs overestimated low, moderate and high risk and underestimated very high added risk (p<0,001).

Added risk/ BP level	Low [%]		Moderate [%]		High [%]		Very high [%]	
	ESH/ESC	GP	ESH/ESC	GP	ESH/ESC	GP	ESH/ESC	GP
Grade 1 (n=486)	3,5	6,0	27,6	29,8	28,6	32,9	40,3	31,3
Grade 2 (n=357)	0,0	1,4	29,4	35,0	27,2	33,3	43,4	30,3
Grade 3 (n=63)	0,0	3,2	0,0	6,3	6,3	22,2	93,7	68,3

Conclusions: Treatment intensity of ISH is low in spite of high and very high CV risk of treated patients. Estimation of CV risk according to current guidelines by GPs is imprecise what may influence the intensity of treatment.

291. DISTRIBUTION OF BODY MASS INDEX IN THE HOME-DWELLING ELDERLY PATIENTS IN PRIMARY CARE

B. Gryglewska, J. Sulicka, M. Fornal, B. Wizner, T. Grodzicki (Jagiellonian University Medical College, Cracow, Poland; bgrygle@su.krakow.pl)

Objective: The aim of the study was to assess the distribution of body mass index (BMI) in the home-dwelling elderly patients of primary care (PC). *Design and methods:* The study (educational grant of Servier-Poland) was performed in 256 units of PC. Weight and height of patients

older than 60 years old were measured and used to BMI calculation. BMI < 16 and 16–17,9 kg/m² were considered as malnutrition (II and I^o, respectively); BMI=18–19,9 as lean, 20–25 as normal, 25,1–26,9 and 27,1–26,9 as overweight (I and II^o, respectively), 30-40 as obese and >40 as severe obese. The distribution of BMI was compared between two age groups: 61–80 and >80 years and with reference to gender. *Results:* 24 646 patients aged between 61 and 102 years, (mean age — 70,6±6,5years) were examined, 59,5% were women, 7,9% were >80years old. The distribution of BMI according to age and gender is presented in the table.

Most of the home-dwelling elderly were overweight and obese, irrespective of age and gender. Over one third of younger women and over one fourth of older were obese. Among younger and older men overweight II^o occurred more frequently (about one third). Malnutrition was occurred occasionally over 60 years old, even in advanced age. *Conclusions:* The epidemic of obesity was observed even in the elderly population. It might have an impact on the cardiovascular risk of the elderly population.

292. UPPER GASTROINTESTINAL DISEASES IN VERY OLD PATIENTS ADMITTED TO HOSPITAL

G. Guerra¹, M. Gallerani², L. Trevisani³, F. Guerzoni⁴, B. Boari², S. Volpato¹, F. Sioulis¹, M. Galvani¹, R. Fellin¹, G. Zuliani¹ (¹Department of Clinical & Experimental Medicine — Section of Internal Medicine, Gerontology & Geriatrics, University of Ferrara, Italy; ²Unit of Internal Medicine, S. Anna Hospital, Ferrara, Italy; ³Unit of Gastroenterology, S. Anna Hospital, Ferrara, Italy; ⁴Statistical Service, S. Anna Hospital, Ferrara, Italy; gianlu.fe@libero.it)

Aim of the study: Upper digestive tract diseases are one of main causes of hospitalization, mostly when complicated by bleeding. Some studies demonstrated that the global rate of mortality for gastrointestinal bleeding was 160/100.000 subjects/year, and was prevalent in the elderly and in patients with high comorbidity levels. *Materials and methods:* In the present study we analyzed, in a large sample of patients admitted to our Hospital, the diagnoses associated with the principal diseases of upper digestive tract, focusing on subjects aged 85 years or more. We have considered all data collected from discharge records of patients with age ≥40 years, in the period from January 1998 to December 2004. During this period there were 63.349 admissions; 53.438 (84.4%) were aged <85 years (50.4% males) while 9.911 (15.6%) were aged ≥ 85 years (32.8% males). The in-hospital mortality rate in the 2 groups was 6.1% vs 13.1%, respectively. *Results:* An endoscopic

BMI [kg/m ²]	Age 61–80 years			Age >80 years		
	Men (n=9246)	Women (n=13460)	Total (n=22706)	Men (n=746)	Women (n=1194)	Total (n=1940)
<16 [%]	0,1	0,1	0,1	0,0	0,0	0,0
16–17,9 [%]	0,1	0,2	0,2	0,1	0,4	0,3
18–19,9 [%]	0,8	1,1	1,0	1,6	2,0	1,9
20–25 [%]	20,1	20,9	20,5	31,2	29,6	30,2
25,1–26,9 [%]	21,9	17,0	19,0	22,3	18,1	19,7
27–29,9 [%]	32,9	27,6	29,8	27,6	24,8	25,9
30–40 [%]	23,6	31,5	28,3	17,2	24,0	21,4
>40 [%]	0,5	1,6	1,1	0,0	1,1	0,7

evaluation of the upper digestive tract was performed in 7.5% of patients <85 years vs 5.4% in subjects ≥85 years ($p<0.001$). The main endoscopic diagnoses in the 2 groups were the following: esophageal varices (10.3% vs 2.6%, $p<0.001$), esophagitis (18.5% vs 19.4%, NS), esophageal ulcer (1.7% vs 3.7%, $p=0.003$), gastric ulcer (11.3% vs 15.1%, $p=0.01$) [with perforation: 6.6% vs 9.9%, NS; died with gastric ulcer: 3.7% vs 6.2%, NS], duodenal ulcer (15.8% vs 17.8%, $p=0.05$) [with perforation: 30.1% vs 28.4%, NS; died with duodenal ulcer: 13.5% vs 9.5%, NS], peptic ulcer (2% vs 3.2%, NS), gastritis and duodenitis (88.9% vs 86.5%, NS), and gastrointestinal bleeding (3.7% vs 3.9%, NS) [dead with gastrointestinal bleeding: 16.7% vs 14.9%, NS]. *Conclusions:* Our data confirm a high prevalence of upper digestive tract diseases also in very-old subjects (aged over 85 years). In particular, the prevalence of esophageal, gastric, and duodenal ulcers is higher and tends to be more often complicated, in very-old compared with younger patients. These results reinforce the need, especially in very-old patients, of a correct evaluation of the risk (particularly harmful drugs) of upper digestive tract diseases, in order to implement a correct preventive therapy.

293. WORKING WITH THE ELDERLY AT TIME OF WAR: TWO MODELS OF EMERGENCY INTERVENTION

S.Y. Hantman (Tel Hai Academic College; shirah@adm.telhai.ac.il)

The aim of this paper is to describe two models of intervention that were used by professionals working with the elderly population in the North of Israel during two crisis situations. Both the Grapes of Wrath campaign and the Second Lebanon War raised a number of dilemmas in the professional community regarding their role and responsibilities as caregivers of the elderly, caregivers of their own families and communities and the need to create a supervisory framework for these workers. The article presents a summary of the long-range effects of emergency situations on professional workers and their elderly clients. Of the two models illustrated, the first is based on meetings with professional workers that took place ten years ago, following the «Grapes of Wrath» military campaign. The second was implemented immediately following the Second War in Lebanon in the summer of 2006. The discussion depicts the range of dilemmas that were expressed by workers. Recommendations for future emergency interventions for both populations were suggested.

294. COMPARISON OF SUBCUTANEOUS VERSUS INTRAVENOUS REHYDRATION IN NURSING HOME RESIDENTS: A RANDOMISED STUDY

R. Har-Noy, J. Ben-Israel, A. Kabaha, E. Granot (Shoham Geriatric Center, Pardes Hanna, Israel; ronith@shoham.health.gov.il)

Background: Nursing home residents, and particularly the frail ones, are prone to dehydration as a consequence of inability to drink sufficiently and needs to receive parenteral fluids and electrolytes. Subcutaneous infusion, named hypodermoclysis (HDC) is widely used in geriatrics in order to achieve fluid maintenance or replacement. However, we have only a few data about its tolerance. *Aim of the study:* to compare the feasibility and the adverse effects of subcutaneous (SC) and intravenous (IV) rehydra-

tion in dehydrated nursing home residents and the clinical changes exhibited by the patients. *Method:* in a prospective, open clinical trial during two years, 110 frail dehydrated received 135 infusion episodes. These patients had a mean age of 83.13±8.2 years, and the majority (70%) was men. All of them had functional impairment, and as well as mental impairment. Changes in laboratory findings, adverse local and systemic effects were recorded. *Results:* Seventy episodes of subcutaneous infusions were recorded during the study period, and sixty five of intravenous infusion. The infusions were tolerated very well in all patients, in the two groups. The 70 HDC represented 684 days of subcutaneous infusion, with a mean of 9.77 days, while the IV infusion represented 496 days with a mean of 7.63 days. In 16 patients, the therapy had to be changed from SC to IV: 12 times because of the need to begin an IV drug therapy, twice because removal of the needle and twice because poor resorption. In 17 patients, there was a change from IV to SC route, because of impossibility of further peripheral IV puncture (7times), repeated removal of the IV cannula (7times), and completion of the IV drug application (3 times). The laboratory improvement were similar in the two groups, a few local mild side effects were recorded in each of the two groups, and only one systemic adverse reaction was noted in the IV group. *Conclusions:* Rehydration by HDC is as safe and effective as the intravenous route to treat the mildly dehydrated frail elderly people residing in long term nursing facilities. Considering the fact that the intravenous access is many times difficult to obtain and maintain in this population, it makes HDC an alternatively effective method of infusion.

295. DEVELOPMENT OF SPECIALIST NURSING FOR OLDER PEOPLE

N. Hayes (King's College Hospital NHS Foundation Trust, London, UK; Nicky.Hayes@kch.nhs.uk)

This paper will argue that with an increasing ageing population across Europe, ongoing investment in specialist nurse preparation and leadership is required to meet current and future need. This paper will start with a review of the literature on the role of the Older People's Specialist Nurse (OPSN), illustrated by supporting examples of its impact on practice in London. The UK National Service Framework (NSF) for Older People (Secretary of State for Health, 2001) states the need for early specialist input for older people and development of specialist expertise through posts such as Consultant Nurses and the OPSN. The Royal College of Nursing and British Geriatrics Society (BGS 2001) publication Older People's Specialist Nurse outlined the case for the development of this type of role in a variety of healthcare settings. Their specification for preparation for the role of Older People's Specialist Nurse includes two key elements: sufficient and sound clinical experience working with older people and specialist post-registration development in the distinct and special aspects of older people's health and social needs (RCN & BGS 2001). A recent evaluation of introduction of OPSNs within an in-patient setting in Nottingham UK, provides evidence that the role can provide rapid assessment and review of patients with appropriate identification of transfer of care, discharge, referrals and review (Harwood et al 2002). Our experience at King's College Hospital, London supports this finding. We developed an Older People's

Assessment and Liaison team, lead by an OPSN. The team screens all older patients on admission for complex problems and provides additional support and fast-tracking to rehabilitation wards as appropriate. Early intervention of this kind drives down length of stay on acute medical wards and addresses issues related to repeat admissions of care home residents and patients with chronic diseases. Older nursing home residents have a high level of frailty and dependency with over 50% having stroke, dementia or other neuro-degenerative disease, and 27% being both immobile, confused and incontinent (Bowman 2004). Nursing home provision in the UK is largely provided by the independent sector, but there is no requirement on care providers to employ care staff who have specialist knowledge or skills in the care of older people. In South-East London, the National Health Service funded Care Homes Support Team provides the specialist support for these nursing home residents and supports implementation of the National Service Framework (Hayes and Martin, 2004). The core of the Care Homes Support Team is eight Older People's Specialist Nurses, whose role and impact on practice will be described further. *References:* (1) Bowman C, Whistler J, Ellerby M, A national census of care home residents Age and Ageing 2004; 33: 561–566; (2) Harwood R H, Kempson R, Burke N J, Marrant J D (2002) Specialist nurses to evaluate elderly in-patients referred to a department of geriatric medicine. Age & Ageing, 31, 401–404; (3) Hayes N, Martin F (2004) Supporting care homes: the Older People's Specialist Nurse, British Journal of Nursing 13, 21, 1250–1257; (4) Royal College of Nursing and British Geriatrics Society (2001) Older People's Specialist Nurse: a joint statement from the Royal College of Nursing and the British Geriatrics Society. BGS/RCN, London; (5) Secretary of State for Health (2001) National Service Framework for Older People, DoH, London.

296. INTEGRATING SERVICES FOR FRAIL OLDER PEOPLE: THE PRISMA COORDINATION MODEL PART 2: IMPACT

R. Hebert¹, M. Raiche¹, M.F. Dubois¹, D. Blanchette¹, S. Durand², N. Dubuc¹, M. Tousignant¹ (¹Université de Sherbrooke, Sherbrooke, Canada; ²Université du Québec en Abitibi-Témiscamingue, Rouyn, Canada; rejean.hebert@usherbrooke.ca)

The objective of the study was to evaluate the impact of the PRISMA model on health, satisfaction and services utilization of frail older people. It was a population-based study with a quasi-experimental design. From a random selection of people over 75 years old, a sample of 1501 persons identified at risk of functional decline by the Sherbrooke Postal Questionnaire was recruited in the 3 experimental areas (n=751) and 3 comparison zones (n=800). Subjects were measured at baseline and yearly for four years on functional autonomy, satisfaction with services, empowerment, caregiver's burden, and desire for institutionalization. Functional decline was defined as a loss of 5 points on the SMAF disability scale, institutionalization or death. Information on utilization of health and social services (public, private and community) was collected by bi-monthly phone questionnaires. Cost associated with these services was also calculated. When the last two years (where implementation rate was over 75%) were compared with first two years, the experimental group presented a difference of 6.3% on functional decline prevalence (p=0.03). This difference was even higher (9%) for the frailest sub-cohort. Unexpectedly, the incidence of

functional decline was also 14% lower in the experimental group at year 4 (p<0.001). Satisfaction, especially about services organisation and delivery, was significantly higher (p<0.001) in the experimental group. Empowerment was also significantly higher in this group (p<0.001). There was no impact on caregiver's burden and desire for institutionalization. For health services utilization, a 20% reduction of visits to emergency room (p<0.001) was observed in the experimental cohort. The hospitalization rate was also lower in the experimental group but the difference was not statistically significant (p=0.19). No significant effect was observed on home-care services utilization, consultations with professionals, or use of voluntary services. There overall cost was not higher in the experimental group, even when implementation cost was included. In conclusion, the PRISMA model improves the efficacy of the health care system without additional cost.

297. EFFECTS OF HORMONAL COMBINATION THERAPY ON BONE MINERAL DENSITY AND TURN-OVER IN POST-MENOPAUSAL WOMEN

A.M. Herghelegiu, G.I. Prada, I.G. Fita, V. Ochiana, S.P. Prada (Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; giprada@gmail.com)

The authors compared effects on bone mineral density and turn-over of various of various combination hormonal therapies versus biphosphonates in order to identify the best approach in preventing osteoporotic fractures. It was a prospective study. We investigated 273 women, age range 50–65 years, all being at least 12 months after menopause. We divided the patients into 6 groups: one control group treated with alendronate 70 mg/week alone and 5 experimental groups. All patients were diagnosed with lumbar osteoporosis by a DEXA device. Experimental groups had each a different hormonal replacement therapy: 1 mg 17β estradiol +0,5 mg noretisteron acetate in combined continuous oral therapy, 28 days/month; 2 mg estradiol valerate +1 mg ciproterone acetate in sequential administration, 21 days, with a free-interval (11 zile EV și 10 zile EV+CPA); 2 mg estradiol valerate +2 mg dienogest in combined oral continuous administration, 28 days/month; 2 mg 17β estradiol +1 mg noretisteron acetate in combined continuous oral administration, 28 days/month; 0,625 mg equine conjugated estrogens +2,5 mg medroxyprogesterone acetate in continuous combined oral administration, 28 days/month. The follow-up period was 3 years. We used bivariate Pearson correlation that demonstrated a positive correlation between the length of menopause (in years) and the average value of FA1c after 3 years of treatment (p=0.003, sigma=0.449). Hormonal replacement therapy produces a decrease in bone turn-over and an increase in bone mineral density at lumbar vertebrae. When compared to alendronate, we noticed a similar positive effect of both therapies (hormonal and biphosphonate). In conclusion, an early hormonal replacement therapy in post-menopausal women is effective in preventing osteoporosis.

298. QUALITY OF LIFE AND HORMONAL REPLACEMENT THERAPY IN POST-MENOPAUSAL WOMEN

A.M. Herghelegiu, G.I. Prada, V. Ochiana, S.P. Prada, I.G. Fita (Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; giprada@gmail.com)

Objective of the study was to evaluate the effects on quality of life hormonal replacement therapy early after menopause. We performed a prospective study, follow-up

period was 3 years. Total number of patients was 273, all women, with at least 12 month elapsed from menopause. Age range was 50 to 65 years. We divided the sample into 6 groups: 1 control group, treated with alendronate for osteoporosis, and 5 experimental, treated with hormone replacement therapy (5 different oral combinations). We evaluated quality of life at 6 month, 1 year, 2 yr and 3 yr of hormonal treatment. A Menopause Rating Scale — MRS was used. It contains a set of 11 questions regarding various menopausal symptoms. The scale is divided into 3 sub-scores: psychological symptoms (depression, irritability, anxiety, asthenia); somatic-vegetative symptoms (transpirations / hot flushes, cardiac symptoms, sleep disorders, joint and muscle pains); uro-genital symptoms (vaginal dryness, urinary symptoms, sexual disorders). Each symptom is rated from normal, to mild, moderate and severe. We performed a prediction statistical analysis of the raw scores as a function of various evaluation stages using linear regression ANOVA. It showed statistically significant beneficial effects of hormonal replacement therapy on psychological, somatic-vegetative and uro-genital menopausal symptoms. A constant reduction in raw scores was noticed in 35.3% of psychological symptoms, 49.2% of somatic-vegetative symptoms and 40.8% of uro-genital symptoms. A decrease in total raw scores was demonstrated by ANOVA for 47% of patients, at all evaluation stages. Combined oral estrogen-progesterone (EEC+MPA) therapy for menopausal women produces an increase in quality of life with a significant reduction in the severity of psychological, uro-genital and most important of somatic-vegetative symptoms, especially in women with severe symptoms.

299. PREVALENCE AND EVOLUTION OF DECUBITUS ULCERS IN A GERIATRIC UNIT OF CANARY ISLANDS

E.J. Hernandez¹, B.C. Rodriguez¹, R. Chacyn¹, J.F. Jimenez¹, J.C. Hernandez², M.L. Estuvez³ (¹Nursing Dept., Las Palmas de Gran Canaria University, Canary Islands, Spain; ²Servicio Valenciano de Salud, Valencia, Spain; ³Servicio Canario de Salud, Canary Islands, Spain; jjimenez@denf.ulpgc.es)

Objectives: to study the decubitus ulcer prevalence when a patient is admitted and discharged from an Acute Geriatric Ward and also to analyse the evolution of these ulcers. **Materials and methods:** It is a transversal, descriptive and retrospective research on patients older than 65 years old who were admitted in the Acute Geriatric Ward of «Hospital Insular de Lanzarote» (a General Hospital situated in Lanzarote) from the 1st January to the 31st August, 2006. Two cross sections were done (admission-discharge or exitus) analysing not only the prevalence in every decubitus ulcer but also the evolution. **Results:** 290 patients were included (61.3% of women) with an average age of 82.9 years old and Barthel Index [BI] average of 34.6 in the admission. Most of the patients came from the Emergency unit of a General Hospital (51.2%) and the 51.3% out of the admitted ones were discharged to their houses while the 19.6% were taken to other hospital wards. The average stay was 24.1 days. The 41% of patients had at least one decubitus ulcer when they were admitted, with a total number of 192 decubitus ulcers (1/3 ulcers were considered in stage III or IV). In their discharge (or exitus) the 68.3% of the admitted patients had their skin in perfect state which means that 22.9% of the pre-existing decubitus ulcers had been healed and the ones in stage II had a more successful

evolution in a serious analysis (63 in admissions and 37 in discharges). **Conclusions:** The high number of patients who are admitted with at least one decubitus ulcer could confirm the importance of an adequate home care. The fact that less than 1/3 of the decubitus ulcers were healed could be conditioned by the high prevalence of the decubitus ulcers with stages III and IV in admission.

300. GERIATRICS CONTRIBUTION AT HIP FRACTURE SURGERY PATIENTS' DISCHARGE

M. Herrera, A. Palomo, E. Logroco, C. Suarez, M. Lazaro, J.M. Ribera Casado (Hospital Clinico San Carlos, Madrid, Spain; mhabian@ole.com)

Objective. Geriatrics contribution to update aged hip fracture patients profile, attended in our Hospital in 2005 and to observe how this profile influence directly in the destination at discharge. **Material and methods.** All >65y. hip fracture patients in Hospital Clinico de Madrid during 2005 included. Variables at admission: a) demographics, b) clinical: type of fracture, previous diagnosis, Charlson comorbidity score, gait, drugs history, c) functional situation: KATZ and Lawton index and Cruz Roja Ps'quica (CRP) scale. Geriatrics syndromes: last year falls, nutritional situation (according to blood albumin values > or <3.5 gr/l); incontinence and sensory deficit observation. Mobilization capacity at discharge. All these variables were compared with correspondent discharged destination: home, residence, geriatrics middle-stay unit, or rehabilitation centre. **Results:** During the analysed period, 314 hip fracture patients >65 yr. were attended in Traumatology unit; 75,9% women. Global middle-aged: 85±7,6 yr. KATZ and Lawton index showed that >85y. patients are more dependent than younger (p<0.001). Previous social situation: 20% of patients lived alone at home and 2% of them lived in a residence; 5,5% perceived social assistance. Anaemia (Hg<8) was found in the 8.2% of >85y. patients and in the 7% of younger. Mortality 4%. Discharge location: <85y. more often come back to their homes (p<0.001), the opposite that happens respect to the discharge to rehabilitation centres (p<0.001). Discharge destination according to the previous functional situation: Patients with better previous situation (KATZ=A-B) come back home more often. **Conclusion:** 1) Aged hip fracture patients fulfil geriatrics patients criteria (high mortality, polypharmacy and geriatrics syndromes association). 2) Age and previous functional situation are the most determinant factors for location at discharge. 3) Rehabilitation after Hospital discharge is a key in this group of patients.

301. ALZHEIMER'S DISEASE PLUS CEREBROVASCULAR DISEASE (AD+CVD): CLINICAL CHARACTERISTICS

F. Herrero¹, G. Garcia-Ribas², D. Sanchez-Matienzo³, C. Bas³ (¹Hospital Matary, Barcelona, Spain, ²Hospital Ramon y Cajal, Madrid, Spain; ³Medical Dept. Janssen-Cilag Spain; jdsanche@jaces.jnj.com)

Background. The prevalence of cerebrovascular disease (CVD) in patients with Alzheimers disease (AD) varies widely among studies depending on being autopsy-based or neuroimage based. A study from Fernando et al. showed that CVD was present at autopsy in 58% of patients clinically diagnosed of AD. Patients with AD+CVD tend to show less consistent clinical diagnosis and therapeutic interventions. Our main objective was to obtain the

clinical characteristics and therapeutic interventions in patients with a clinical diagnosis of AD+CVD in real clinical practice and taking into account the three main specialists involved in the diagnostic process: neurologists, geriatricians and psychiatrists. *Methods.* This was a cross-sectional, multi-center, nation-wide study performed in Spain. The investigators participating in this study were neurologists, geriatricians and psychiatrists. *Results.* Data were collected from 107 physicians for a total of 720 patients with AD+CVD. The majority of specialists were neurologists (76%), 14% were geriatricians (15), and 8.4% were psychiatrists (9). Mean age of patients was 77.1 ± 7 years-old. Mean MMSE score at diagnosis was 18.7 ± 4 . Memory deficits were present in 97% and impaired basic activities for daily living (ADL) was present in 67% of patients. The diagnosis of AD plus CVD was the first diagnosis for 62% of patients. Co-morbid disease was present in 79% of patients, and the most common risk factor was arterial hypertension (68%). Co-medications were present in 74% of the patients, and the most common drug class was angiotensin-converting enzyme inhibitors (35%). Neuroimage techniques (NIT) and medical history (MH) were the most common methods of diagnosis of AD+CVD. Computed tomography was performed in 69% of the patients, and MRI was performed in 45%. There was a significant difference on the use of MH as primary diagnosis method (98% of psychiatrists/geriatricians used MH vs. 85% of neurologists ($p < 0.04$)) and on the use of NIT (99% of neurologists/geriatricians vs 84% of psychiatrists, $p < 0.0001$). For AD patients plus CVD, galantamine was the most prescribed drug by geriatricians (75%), followed by mementine (9%). *Conclusions.* At the time of diagnosis, patients with AD+CVD have a MMSE score that fall into moderate cognitive deficit and need help or supervision in basic-ADLs. These characteristics could help to differentiate from pure AD patients. Geriatricians used both neuroimage and medical history as first election diagnosis methods in patients with AD+CVD. Neurologists used primarily NIT to diagnose patients with AD+CVD, while psychiatrists used MH. Galantamine was the most commonly prescribed drug for patients with AD+CVD.

302. FROM COAL MINES AND STEEL MILLS TO AGE FRIENDLY CITIES: HOW AGEING SPURS NEW ECONOMIC DEVELOPMENT AND QUALITY OF LIFE

J. Hilbert, R. Fretschner, W. Potratz (Science Centre Northrhine Westphalia, Institute for Work and Technology; Potratz@iatge.de)

One of the German states (Länder) which have confronted the challenge of demographic change and the societal and economic implications of an ageing population is Northrhine-Westphalia (NRW), one of the former big European «old industrial» coal and steel regions. The contribution will highlight how network structures have emerged and developed and how cities have taken the chance to develop what meanwhile has come to be called «silver economy» in order to better answer to demographic change and the demands of their older people, be it in terms of public infrastructure and public services, be it in terms of commodities and services traded in the market. Health, housing and mobility are the core elements affecting quality of life in age; hence the contribution will show, how it is possible to combine and «knit together» actors from core health and care services (hospitals, practitioners,

care providers), therapeutic services and rehabilitation, medtech- and geronto-technology firms, as well as medical wellness suppliers, the sports and fitness business and also nutrition and health consulting and promotion and, finally, transportation services — thus building the foundations for a variety of individual conceptions of life and independent living — and new economic perspectives for ageing regions.

303. NURSING HOME PROFIT STATUS AND CLINICAL OUTCOMES

M.P. Hillmer¹, S.E. Bronskill¹, W.P. Wodchis¹, T.A. Stukel¹, G.M. Anderson¹, S.S. Gill², G. Cernat³, P.A. Rochon⁴ (¹University of Toronto, Toronto, Canada; ²Queens University, Kingston, Ontario; ³Institute for Clinical Evaluative Sciences, Toronto, Canada; ⁴Kunin-Lunenfeld Applied Research Unit, Baycrest, Toronto, Canada; mhillmer@hcc-ccs.ca)

Background/Objectives. Research findings generally show that quality differences exist in important care processes and outcomes between long-term care (LTC) homes of differing ownership status. However, differences in payment levels and sources across facilities with different ownership may confound the relationship between quality and ownership. The highly regulated environment in Canada's largest province, Ontario, provides an opportunity to determine the quality of care in for-profit and not-for-profit LTC homes with funding and prices held constant. This study examined potentially avoidable hospital visits and death in order to measure differences in quality between for-profit and not-for-profit LTC homes in Ontario, Canada. *Design.* Population-based retrospective cohort study using health care administrative data. *Setting.* All provincially regulated LTC homes in Ontario, Canada between January 1, 2003 and December 31, 2003. *Participants.* 16 209 LTC residents newly admitted to 503 homes (10 712 residents (66.1%) in 315 for-profit homes and 5 497 (33.9%) residents in 188 not-for-profit homes. *Measurements.* The primary outcome was a potentially avoidable hospital visit within six months of a new LTC admission. A Cox proportional hazards model was used to assess the risk of hospitalization for residents in for-profit compared to not-for-profit homes. The model was adjusted for a series of resident and facility characteristics including age, sex, comorbidity, facility location, facility size, and accreditation status. Residents were censored for death, transfer to another facility, or reaching the end of the observation window. *Results.* Residents of for-profit homes were at an increased risk of potentially avoidable hospital visits (adjusted hazard ratio: 1.36, 95% CI: 1.20–1.52) compared to those in not-for-profit. The combined outcome of potentially avoidable hospital visits or death also resulted in an increased risk for for-profit residents (Adjusted hazard ratio: 1.23, 95% CI: 1.12–1.34). No significant differences were detected in rates of death between facilities (Adjusted hazard ratio: 1.05, 95% CI: 0.91–1.21). We calculated that there would one additional hospital visit for every additional 21 people in a for-profit facility. *Conclusion.* The risk of a resident experiencing a potentially avoidable hospital visit in for-profit homes was increased by one-third compared to residents in not-for-profit homes. This study suggests that important differences in quality of care exist between for-profit and not-for-profit homes even in a high regulated environment.

304. COGNITIVE TRAINING PROGRAMM WITH A MULTIMEDIA METHOD IN ALZHEIMER DISEASE

E. Hoffet-Guillo (*CHU Nimes Gerontology, France; francoise.hoffet@chu-nimes.fr*)

This study reports an innovating method in managing cognitive training for a group of patients with Alzheimer disease and related pathology during two years. These patients were treated with inhibitors of acetyl cholinesterase for a mild to moderate Alzheimer disease. They also were include in a regular training cognitive program based on multimedia method. This stimulation provide resiliency, stability of loss impairment, self esteem, less comportsmental disorders and depressiv mood. The hypothesis is a multiple synaptic activation related on an neurosensorial amplification with technology providing high quality of acoustic and visual signal.

305. THORACIC TRAUMA IN GERIATRICS. VARIABLES ASSOCIATED WITH MORTALITY

M.S. Holanda Peca, A. Gonzalez-Castro, I. Rubio, J.C. Rodriguez-Borregan, A. Castellanos (*Hospital Marques de Valdecilla. Santander. Espaca; sholanda@humv.es*)

Objectives: To study and to value demography, epidemiology and factors associated with mortality in thoracic trauma produced in the geriatric population. Patients and method: This study was a retrospective review of patients older than 65 years with thoracic trauma as the main diagnosis who were admitted to our Traumatic Critical Care Unit from January 1991 to January 2006. Data were analysed by the $[\chi^2]$ test with $p < 0.05$ considered significant. The averages were compared with t-Student. *Results:* There were 189 patients with diagnosis of thoracic trauma. The middle age was $74 \pm 8,68$ years. There were more male subjects (62.43%). The principal mechanism of injury in elderly population was pedestrian collisions (37,5%); motor vehicle collisions and precipitations were constituted the second and third most common mechanisms of injury in the elderly, respectively. The main reason to be admitted in our ICU was the observation, followed by neurological vigilance and shock. The GCS mean value was $11,67 \pm 4,68$, ISS mean value of $21,07 \pm 16,13$, APACHE II mean value of $15,06 \pm 8,74$ and APACHE III mean value of $46,23 \pm 31,69$. The mean ICU stay length was $11,73 \pm 23,18$ days. We found statistically significant differences between the following variables and mortality: age ($p = 0,0032$), GCS ($p < 0,0001$), ISS ($p < 0,0001$), APACHE II ($p < 0,0001$), APACHE III ($p < 0,0001$), previous arterial hypertension ($p = 0,007$), arterial pressure at admission ($p < 0,001$), temperature, haemoglobin and hematocrit at admission ($p = 0,003$ y $p = 0,004$, respectively), number of platelets at admission ($p = 0,02$), prothrombin activity at admission ($p < 0,001$), glucose ($p < 0,0069$), creatinin and urea at admission ($p = 0,04$ y $p = 0,0041$), base deficit at admission ($p < 0,0001$) and the amount of fluids needed for resuscitation ($p = 0,014$). There were 73% of patients with two or more broken ribs, followed by hemothorax and pneumothorax. The associate injuries of other organs were traumatic brain injury (56,6%), pelvic trauma and abdominal trauma. 48% of patients with thoracic trauma needed mechanical ventilation ($12 \pm 15,69$ days of MV) because of neurological impairment mainly. The ICU mortality was 29.6%, and intra-hospital mortality was 33,8%. *Conclusion:* Our results corroborate other studies that showed increased risk of mortality in the age

greater than 65 years. The prognostic scales used have been demonstrated to be good predictors of mortality in patients with thoracic trauma. The previous hypertension has been seen as a protector factor. Arterial pressure, temperature, glucose, renal parameters, anemia, haemostasis impairment at admission have been demonstrated as good mortality scoreboards. We highlight the role of the base deficit in the admission as a possible predictor of mortality of easy use to the head-board of the patient. Finally, we conclude that the incidence of rib fractures in elderly is high and, as it is shown in the literature, increasing number of rib fractures is associated with increasing morbidity and mortality.

306. MOOD IN PEOPLE WITH SUSPECTED OR DIAGNOSED DEMENTIA AND ITS RELATION TO INFORMAL CAREGIVER BURDEN

G. Holst¹, A.-K. Edberg² (¹*Competence centre County Council of Blekinge 37185 Karlskrona Sweden;* ²*Lund University, Sweden; goran.holst@ltblekinge.se*)

The emotional state of the person with dementia has been described as one important factor for the relatives in the decision making process when for example the need for another form of care has arisen. In order to develop interventions that can enhance wellbeing among persons with dementia and their relatives, it is important to understand how they react and adjust to the situation. It is therefore also important to explore the interrelation between the emotional state among people with early/moderate dementia and the caregiver's experience of burden. *The purpose* of the study was to investigate mood in people with dementia, living in their ordinary home. Also to study the relation between mood and gender, age, living alone, stage of dementia, functional dependency and receiving support in daily personal care and finally to study the association between family caregivers feeling of burden, self-reported health and mood of the person receiving help. A sample of 64 persons, 34 women and 30 men, with a suspected or diagnosed dementia disease was included in the study and in 58 of the cases also a next of kin participated. The analysis showed that being dependent on help from others with personal care (PADL) and having a moderate dementia was mostly associated with not being confident. The analysis showed a correlation between feeling burdensome and bad self-reported global health, i.e. a next of kin that reported their health to be bad quite often or almost always fell more often burdensome. The findings indicate that having a moderate dementia and receiving help with such as personal hygiene from a next of kin and/or from formal caregivers has a negative impact on mood. The transition from early over to middle stage of dementia thus seems to be crucial. Maybe not only because of the increased cognitive decline but far more, or combined with, the fact that the person becomes dependent of intimate help from others to maintain daily life. The findings from the study contrast to the stress and coping model often used in dementia research in which people with dementia are described as contributing to emotional problems for those helping them. Thus, next of kin's, helping a person with dementia to maintain their daily living are maybe not only or first of all stressed because of the role as a helper. The feeling of burden seems more related to the own experience of health.

307. MOBILITY — OBSERVATION — BEHAVIOUR — INTENSITY — DEMENTIA PAIN SCALE (MOBID): DEVELOPMENT AND VALIDATION OF A NURSE-ADMINISTERED PAIN ASSESSMENT TOOL FOR USE IN DEMENTIA

B.S. Husebo¹, L.I. Strand¹, R. Moe-Nilssen¹, S.B. Husebo², A.E. Ljunggren¹ (¹University of Bergen, Norway; ²University of Klagenfurt and Vienna, Austria; bettina.Husebo@isf.uib.no)

Advancing age is associated with increased prevalence of pain, often caused by musculoskeletal conditions, previous fractures, and neuropathies. Pain assessment depends on patients' self report capacity, memory, expectation, and emotion. When older adults in pain also have severe cognitive impairment (SCI) and reduced communication abilities, they are at high risk for being under-diagnosed and untreated for pain. Although older adults tend to have more acute and chronic illnesses than younger people, they often report less pain. In industrialized countries 2% of the population suffers from Alzheimer's disease and related dementias with expected increasing to 4% in 2040. In response to a strong need to assess pain in patients with SCI, several pain behavioural scales have been developed and reviewed. Pain behaviour seems to be of clinical significance but few attempts have been made to investigate the utility of using a standardized movement protocol to assess pain in SCI. *Aim of the study:* The Mobility – Observation – Behaviour – Intensity – Dementia Pain Scale (MOBID) (1) is the first nurse-administered instrument in SCI, where presence of pain behaviour indicators (pain noises, facial expression, and defence) is observed during standardized active, guided movements, and then inferred to pain intensity. It was the aim of the study to describe the development of the MOBID, and to investigate aspects of reliability and validity. *Method:* NH patients (n=26) with SCI were included in video uptakes. Their caregivers (n=11) rated the patients' pain intensity during morning care, and by MOBID, both at bedside and from video uptakes. Three external raters, not knowing the patients, completed the MOBID by rating the videos to examine inter- and intra-rater reliability day 1, 4, and 8. *Results:* Internal consistency of the MOBID indicated high Cronbach's alpha ($\alpha=0.90$). MOBID disclosed significantly more pain than did pain scorings during regular morning care, and video observation demonstrated higher pain intensity than bedside scoring. Inter-tester reliability for inferred pain intensity was high to excellent (ICC=0.70-0.96), but varied between poor to excellent for pain behaviour indicators ($\kappa=0.05-0.84$). *Conclusion:* Registration of pain behaviour indicators during active, guided movements, as performed by MOBID, is useful to disclose reliable and valid pain intensity scores in patients with SCI. [1] Husebo BS, et al. MOBID Pain Scale: Development and Validation of a Nurse-Administered Pain Assessment Tool for Use in Dementia. *J Pain Symp Manage* 2006; accepted for publication.

308. DIGNITY FOR THE ELDERLY IN NURSING INSTITUTIONS AND AT HOME IN EUROPE. HOW CAN WE GUARANTEE THEM PALLIATIVE CARE?

S.B. Husebo¹, B.S. Husebo² (¹University of Klagenfurt and Vienna, Austria; ²University of Bergen, Norway; bettina.Husebo@isf.uib.no)

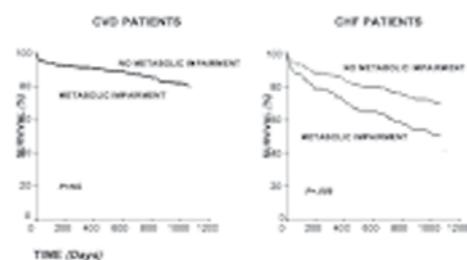
Aim: The world-wide accepted concept of Palliative Care includes cancer patients, mainly younger than 75

years old, often excluding elderly patients or non cancer patients. All our elderly citizens desperately need access to palliative care. Their number is several tenfold higher than the «lucky» severe ill and dying patients receiving proper and competent palliative care today. Our aim is to give a European review of the present and future needs for palliative care in the elderly, and to give access to the necessary tools in institutional and home care services of the elderly, for governments, institutions and care givers in all European countries. *Methods:* A European project: «Dignity and Palliative Care for the Frail Elderly» is established since 2003, cooperating in a European network with professionals representing 12 countries, coordinated by Department of Palliative Care and Ethics, University of Klagenfurt and Vienna, Austria and Department of Public Health and Primary Health Care, University of Bergen. A European survey on the situation and need for action in different European countries was collected for publishing in a textbook (expected for publication 2007). Targets for implementation of palliative care for the frail elderly were identified. *Results:* Access to palliative care for elderly patients in home care or nursing institutions is at the present extremely poor in all European countries. The need will face a dramatic growth of the elderly population the next fifty years. The need for action, national and local projects with implementation of palliative care for the elderly is imminent. A program for implementation of palliative care in home care and nursing institutions will be available end of 2007. A European congress is planned 2008.

309. PROGNOSTIC IMPORTANCE OF METABOLIC ABNORMALITIES IN ELDERLY PATIENTS WITH CHRONIC HEART FAILURE

G.L. Iannuzzi¹, D.F. Vitale¹, G. Luchetti¹, G. Corbi¹, G. Furgi¹, F. Cacciatore¹, F. Mazzella¹, D. Acanfora¹, F. Rengo^{1,2} (¹«S. Maugeri» Foundation, Institute of Care and Scientific Research, Institute of Campoli/Telese, Telese T. (BN), Italy; ²Institute of Internal Medicine, Cardiology and Cardiovascular Surgery, «Federico II» University, School of Medicine, Naples, Italy; iannuzzi@fsm.it)

Metabolic syndrome can worsen the clinical picture of Chronic Heart Failure (CHF). In addition, various other metabolic parameters have been recently found to be changed in CHF, even if their prognostic importance remains to be established. In the present study we sought to determine (I) whether other metabolic parameters — beyond those making up metabolic syndrome- were changed in elderly CHF patients, and (II) whether these changes could reduce survival. At this aim, we enrolled in a multicenter study (CHF Italian Study) 1274 elderly in-patients with cardiovascular disease (CVD). The diagnosis of CHF was made in 228 (28.7%) patients (CHF patients); second group (CVD patients) was made up of 567 (71.3%) patients with heart disease other but CHF.



Given the purpose of the study, patients with renal insufficiency, insulin-dependent diabetes or chronic obstructive pulmonary disease were excluded from statistical analysis. With respect to CVD patients, CHF patients showed: significantly higher values of potassium ($P=.017$), blood urea nitrogen ($P<.001$), creatinine ($P=.002$), bilirubin ($P=.004$), uric acid ($P<.001$), neutrophils ($P=.013$); and significantly lower values of serum sodium ($P=.006$), total cholesterol ($P<.001$), blood proteins ($P<.001$), hemoglobin ($P=.036$), lymphocytes ($P<.001$). Mean survival time was: 865.9 ± 375.5 days in the whole study population; 924.3 ± 333.3 days in CVD patients; 721.7 ± 431.5 days in CHF patients ($P<.001$). Age ($P=.006$), gender ($P=.04$), NYHA class ($P=.004$), low serum sodium ($P=.04$); high uric acid ($P=.04$), alkaline phosphatase ($P=.007$), bilirubin ($P=.05$) were independent predictors of death in CHF group. This pattern of biochemical parameters -namely «metabolic impairment»- was a strong predictor of both long-term mortality ($P=.01$) and cardiovascular death ($P=.009$) in CHF patients, independently from the effect of age, gender and NYHA class; by contrast, it did not affect neither cumulative survival nor cardiovascular death in CVD patients (Figure). In conclusion, complex changes occur in blood metabolic parameters in elderly CHF patients, mirroring an impairment in hydrosaline equilibrium, urate metabolism and liver function. Metabolic impairment worsened the prognosis in CHF patients of the study -but not in CVD patients-, showing not only metabolic syndrome, but also other metabolism changes, to be involved in the complex clinical picture following advanced CHF. Further research is needed to ascertain the specific role of each metabolic parameter in CHF and in the prognosis of elderly CHF patients. *Fig.* Cox curves for cardiovascular mortality in CVD and CHF patients with and without metabolic impairment, corrected for age, gender, NYHA class. In CVD group survival curves of patients with and without metabolic impairment overlap.

310. THE RESULTS OF PERSPECTIVE 14 YEARS RESEARCH OF CARDIOVASCULAR DISEASES IN MALES

A.M. Inarokova, R.M. Zakhokhov, Z.M. Kodzoev, Z.Z. Anzorova (Kabardino-Balkarian State University, Nalchik, Russia; ami_kbsu@mail.ru)

The aim of research is to study the peculiarities of arterial hypertension (AH) spread and ischemic disease of the heart (IHD) among aged auto transport drivers (AD) and the male population by means of a long-termed perspective clinico-epidemiological research. *Material and methods:* 1625 male-drivers at the age of from 20 to 74 years have undergone the research during 14 years. The packet of research included standard questionnaires antropometria, checking the arterial pressure (AP) according to the standard methods a 24-hours electrocardiogram and AP monitoring. *Results:* Having compared the drivers risk factors profile and that of the nonorganized male population we have found a more unfavourable profile in drivers due to the high spread of AH (19,1 and 24,3%), IHD (4,8 and 9,4%), smoking (55,7 and 70,6%), excessive weight (11,1 and 13,2%) and consumption of alcohol (54,4 and 83,4%). A more elevated spread of IHD was marked during the 1st and 2nd visits in drivers of passenger auto transport. During the period of 14 years of a perspective observation the level of mortality among the drivers

of auto transport was 8,2 per 1000 men, of IHD-2,9 per 1000 men and of road accidents-1,4 per 1000 men. The data of common mortality, mortality of cardiovascular diseases, IHD, of brain insult and of oncological diseases are positively associated with the age of the drivers. At the same time, there was no exact dependence on the age in case death from road accidents. On the basis of studying the dynamics of factors, defining the degree of unfavourable epidemiological situation, we have calculated the risk of survival and death for the nearest 15 years period. In the age of group of 30-59 years the expected increase of mortality will be 38%, in the group of 40-49 -24%, in the group of 50-59-7%. The main dominants defining the risk are: the level of systolic arterial pressure, excessive weight, work on passenger auto transport. *Conclusions:* The epidemiological situation concerning IHD and AH has become worse. Among the aged persons the epidemiological situation is worse in those men, who in the past drove passenger auto transport. The dynamics and calculations of survival risk in the older age group in comparison with the younger age group witness about the necessity of taking urgent measures for prolongation of life.

311. MICROCIRCULATORY SYSTEM ADAPTATION TO INTERMITTENT HYPOXIA IN ELDERLY PATIENTS WITH AN ISCHEMIC HEART DISEASE

V.A. Ishchuk, V.P. Tchizhova, O.V. Korkushko, D.M. Yakimenko (Institute of Gerontology, Kiev, Ukraine; vadishchuk@ukr.net)

Endothelial function disturbances and structural changes of the microcirculatory system play an essential role in hypoxia development with aging. Intermittent normobaric hypoxic training (INHT) is a method which improves the peripheral blood circulation. Fifteen IHD patients underwent 10 séances of INHT, i.e. an intermittent breathing of 14-12% oxygen mixture and atmospheric air, for 5 min each, 4 cycles per séance. The bulbar conjunctiva state was studied before and after the INHT, using a television slot tube (Zeiss, Switzerland) for image registration, followed by further morphometry. The vessel motor function of the endothelium was studied on the inner surface of the forearm by means of laser Doppler flow meter (BLF 21 D, Transonic S Inc., U.S.A.). The volume skin blood flow (VSBF) rate was measured, both at rest and on the peak of reactive post-occlusion hyperemia (a 3-minute clamping of shoulder vessels). Determined was also the recovery time for VSBF rate after reactive post-occlusion hyperemia. The data obtained revealed a reduction of the pericapillary edema, a decrease of the sludge phenomenon in venules, capillaries and arterioles, and a quickening and homogenization of the blood flow. The arteriole diameter increased by (2.1 ± 0.5) μm ($p<0.05$) and the venule tone increased: its diameter decreased by (3.4 ± 0.7) μm ($p<0.05$). An improvement of vascular microcirculation is corroborated by the enhancement of forearm VSBF rate. Thus, the VSBF rate at rest increased by (0.05 ± 0.02) $\text{ml}/\text{min}\cdot 100$ g of tissue ($p<0.05$) and on the peak of reactive post-occlusive hyperemia by (0.43 ± 0.38) $\text{ml}/\text{min}\cdot 100$ g of tissue ($p<0.05$), and the recovery time for VSBF rate increased by (17.2 ± 4.4) s ($p<0.05$). *Conclusion:* Adaptation to intermittent hypoxia in aging is accompanied with the improvement of the endothelial function and blood flow along the functioning micro vessels and increases the venule tone.

312. CARE IN NURSING HOME ALZHEIMER'S SPECIAL CARE UNITS: IS IT SPECIAL?

J.J. Jalbert¹, A. Gruneir¹, B.R. Ott², K.L. Lapane¹
 (¹Brown University, Providence, USA; ²Rhode Island Hospital, Providence, USA; jessica_jalbert@brown.edu)

Background. Alzheimer's special care units (SCUs) purport to offer specialized care for nursing home residents with dementia but research has shown that SCU residents are not less likely to be on psychotropic agents than people living on traditional units. **Objective.** To compare the drug regimens of SCU and non-SCU residents with dementia and determine whether «special care» entails different patterns of use of psychotropic and anti-dementia medications. **Methods.** This study is a longitudinal analysis of residents in 33 North Carolina nursing homes containing an SCU serviced by a long-term care pharmacy between 2003 and 2004. Residents were eligible if they had filed prescriptions at the pharmacy, had one Minimum Data Set (MDS) annual assessment, did not have bipolar disorder or schizophrenia, but had dementia or Alzheimer's disease. The final sample yielded 1031 nursing home residents, 285 of which resided on the SCU. Following Centers for Medicare and Medicaid Services (CMS) quality indicator definitions, residents' use of antipsychotics, benzodiazepines, and barbiturates were grouped as being potentially appropriate or inappropriate. Multiple logistic regression models were used to describe the effect of living on a dementia SCU on the receipt of anti-dementia agents and potentially inappropriate psychotropic medications. **Results.** The prevalence of inappropriate use of antipsychotics, benzodiazepines, and barbiturates was 31.6% and 21.8% for residents living on and off the SCU, respectively. After controlling for confounding, SCU residents were slightly less likely to receive psychotropic medications (OR=0.9; 95% CI: 0.6–1.3) but were more likely to be taking anti-dementia agents than their counterparts (OR=1.4; 95% CI=0.9–2.3). **Conclusions.** Residents on SCUs are more likely to receive anti-dementia therapy but equally as likely to receive psychotropic medications as non-SCU residents after adjusting for behavioral problems. If the quality of care is to be gauged by the proportion of residents receiving potentially inappropriate antipsychotic medications, then SCUs do not demonstrate superiority over traditional units. However, the greater use of beneficial anti-dementia medications suggests a more complicated story.

313. HUMAN PERFORMANCE

H. Jardim (University of Madeira; tes@uma.pt)

Introduction: Lives are marked by stressful events on every day's demands which can create a certain level of anxiety and fatigue. It's a fact that everyone feels the noxious effects of the surrounding environment and in old people the perception of loss competence abilities generates higher levels of stress. In the last years there has been an increasing consumption of anti-depressives, due to their efficiency and low toxicity of these drugs. These, despite having a reduce effect of stress/anxiety and on the mood, none of them is ideal, because they affect the psychomotor performance and are hazardous to health if used for long periods of time, as well as unwanted side effects. However, their use is justified in some cases. **Aim:** Evaluate the human psychomotor performance when consuming anti-depressives. **Methodology:** An experimental transversal and

corelational study. The sample were constituted with 9 healthy volunteers women (mean age 36,3 years sd +/- 2,78). **Independent variables:** Attribute; anti-depressive drugs (Mianserine 30 mg and Fluoxetine 20 mg) vs placebo and time. **Dependent variables:** Use of scales such as Critical Frequency of Fusion (CFF); Choice Reaction Time (CRT); Digit Symbol Substitution Test (DSTT) and Symbol Copy Test (SCT). For measuring the two first variables we used Leeds Psychomotor TeSt. **Results and Conclusions:** The results suggest that anti-depressive drugs tend to influence the performance in several ways, depending on the drug that we used: Mianserine is the one that we identify with bigger effects of depression and in some tests Fluoxetine confirm best results in human performance. With these results, obtained in this study, we can infer the decrease of psychomotor performance under the influence of these drugs. Such results in adults performance make us preview that elder's performance will be more affected since they have higher consumptions of this drugs. Once again, we emphasized nurses' importance in health education of senior populations, aiming the prevention of falls risk, which work as a death's predictor.

314. PRESSURE ULCERS PREVALENCE IN MACARONESIA ISLANDS: A VISION IN ELDERLY PEOPLE OVER 60 YEARS OLD

H. Jardim¹, M. Gomes², R. Chacon³, G. Reis¹, L. Santos¹, T. Espirito Santo¹, D. Silva¹, R. Carvalhal², A.P. Rocha², L.F.P. Mendes², N. Messias², A. Rodrigues², B. Teixeira⁴, R. Luis², L. Cardoso², B. Rodriguez³, J.F. Jimenez³, M.L. Estevez³, M.A. Ferrera³ (¹University of Madeira — Madeira Nursing School; ²University of Azores — Angra do Heroísmo Nursing School; ³University of Las Palmas — Gran Canaria Island — Nursing School; ⁴University of Azores — Ponta Delgada Nursing School; greis@uma.pt)

Introduction: Despite the information on the prevention of pressure ulcers (PU), they remain a common problem that affects people in every aspect of their daily lives and their treatment is critical in elderly people. Understanding factors like age, incontinence, kind of care, devises for prevention and postural changes and its relations are very important when studying the prevalence of PU. **Aim:** The aim of this research was to determine the prevalence of pressure ulcer and associated risk factors in elderly people over 60 years old in Macaronesia Islands. **Methodology:** Analytic study of quantitative nature. Stratified sample (hospitals; nursing homes and community) with 985 elderly people from Macaronesia were included in this study: 34,7% from Madeira, 30,4% from Azores and 34,9% from Canary islands. EPUAP questionnaire with Braden scale. **Ethic aspects:** Respecting the precepts of Nuremberg Code. **Results:** Average age 79,5, SD±8,6, Mn 60 Mx 99 years; 63,7% women; 66% were in community, 44% in hospitals and in nursing homes; 81% need chronic care. Risk level for PU: 64,8% low risk; 15,5% medium risk and 19,7% high risk. 47% have same sort of Incontinence. Prevalence rate was 15,1%. 40,9% had PU grade IV; 27,5% grade III; 34,9% located in sacrum. 2 is PU average for each person. 69,8% were originate at home. 79,2% of persons with PU were in community. 95,3% of those who had PU had 65 years and over. There were 22,1% with low risk level that had PU (p<0.001). 81,2% of those with PU had some type of incontinence. Incontinence was asso-

ciated to high risk level ($p < 0.001$). Preventive Measures: 41,6% of those with PU hadn't preventive devices in bed ($p < 0.001$) and 81,2% hadn't in chair ($p < 0.001$). Position changes: 55,7% (with PU) hadn't no postural changes in bed ($p < 0.001$) and 87,2% hadn't on chair. *Conclusions:* Prevalence rate was near some countries figures in Europe (EPUAP PU Monitoring Project). Have 65 years and over means to have a PU and grade III and IV were prevalent. Extrinsic factor, incontinence, was associated with high risk. PU occurs in persons with low risk. Preventive measures were missing in changing position or in using preventive devices. In chair changing positions were rare. Guidelines must be observed and a systematic program put on for formal and informal careers. Community nurses play an important role in health education because of the increasing numbers of patients being nursed in their homes at nowadays.

315. MILD COGNITIVE IMPAIRMENT IN THE INSTITUTIONIZED VETERANS FROM A 3-YEAR FOLLOW-UP STUDY

K.C.G. Jeng¹, L.J. Chuo², W.H.H. Sheuh³, W.J. Lee⁴
(¹Department of Education and Research; ²Department of Psychiatry; ³Department of Medicine; ⁴Department of Education and Research, Taichung Veterans Gen. Hosp. Taichung, Taiwan; kcjengmr@vghc.gov.tw)

Mild cognitive impairment (MCI) is thought to be a prodromal phase and therefore highly predictive of subsequent dementia. Many of the risk factors for cerebrovascular disease and vascular dementia, including serum total cholesterol, hypertension, atherosclerosis, and apolipoprotein E (APOE) genotype have also been shown to increase the risk of AD. We were interested to study the risk of conversion of MCI to dementia in the institutionized veterans. *Methods.* In this study, 156 of 385 subjects with agreement were found to be MCI based on the evaluation by Global Deterioration Scale (GDS), Clinical Dementia Rating Scale (CDR) and Mini-Mental State Examination (MMSE). Blood was obtained from subjects to determine APOE genotypes and biochemistry. Results show that there were 97 subjects remained in this 3-year follow-up study who met the MCI criteria: at least 6 years of education, third level of GDS, CDR 0.5, MMSE 24-27 and without living dysfunction. Mean age was 81.51 ± 3.59 years old. We found that 40 subjects (41.2%) remained to be MCI, 31 (31.9%) became dementia, and 14 had depression and 12 back to normal (26.8%). The ApoE4 odd ratio (OR) of dementia and MCI were 1.78 and 4, respectively ($p < 0.001$). There was significant difference in biochemical findings among three groups: Cystatin C genotypes (AA, AB, BB), triglyceride, cholesterol ($p < 0.02$), HbA1c and diabetes ($p < 0.04$). Although the ratio of total cholesterol/HDL, HDL and BUN levels were not different, there was a trend of having higher HDL in MCI than in dementia subjects ($p = 0.081$). The present results suggest that ApoE4 remains to be an important risk factor to develop dementia from mild cognitive impairment and may relate to development of vascular pathology that leads to dementia.

316. THE TIMED UP & GO TEST FOR ELDERLY MEDITERRANEAN POPULATION

M. Jimenez¹, J.J. Montero², R. Cantería², S. Cid², C. Perez², A. Giraud², O. Migylova² (¹ABS Mataro 1. ICS; ²ABS Mataro 7. ICS; 31297jma@comb.es)

Introduction: The timed up & go test is easy and quick, for that reason is strongly recommendable in primary care

attention. At the same time, there are few studies over our population. *Objective:* To know the relationship between timed up & go Test and falling risk in mediterranean elderly population. *Methods:* Multicenter study for prospective cohorts made in Catalonia. Semirural population. Patients over 65 attended for their family physician for any reason during period 2003-2004. All patients living in institutions were excluded. 12 months checking were made over incidence fallings with telephonic controls every 4 months. Data were analyzed through t-student. *Results:* From a total number of 588 patients (58% female), with an average age of 74.5 (SD±6.7), 54 (9.2%) did not finish the study (14 deaths, 5 institutionalized and 35 lost). Falls: 27.7% (148 patients), 73% were women. Timed up & go test were done in 9.6 seconds in average (SD±5.49), being in men 8.2 seconds (SD±3.46) and 10.47 in women (SD±6.37). Women that fall have a time of 12.4 seconds (SD±8.7), against 9.6 seconds (SD±4.4) for those that not fall ($p < 0.001$). Men shown not significant differences, (8 s vs 9 s). If we stratify in: <10 seconds, from 10 to 20 seconds and > 20 seconds, still remain significative differences in women but not in men. *Conclusions:* Timed up and go test is an usefull test in order to identify fragile elderly women with falling risk. However, in men mediterranean population, this differentiation is not shown and must be considered due to anglosaxon studies did not shown sex differences.

317. PREDICTION OF MORTALITY USING CHARLSON'S INDEX COMORBIDITY IN OLDER PATIENTS OF PRIMARY HEALTH CARE

M.M. Jimenez¹, S. Cid², R. Cantería³, M.C. Perez³, J. Massons³, J.J. Montero³, J. Domenech³ (¹ABS Premia de Mar; ²ABS Mataro 7; ³ABS Ronda Prim; 31297jma@comb.es)

Introduction. Comorbidity Charlson Index (CI) -1987- as an easy and quick method for an initial assesment of hospital patients. It has also been frequently used in different medical and surgical specialities areas. It has not been used in primary care attention. *Objective.* To find out the possible relationship between CI and mortality in primary care geriatric population. *Material And Methods.* A prospective cohorts in a multicenter study. Patients >65 years old, visited for any reason in 4 primary centers in Maresme (Catalonia — Spain) during 2003-2004. We registered demographic variables and the 19 diseases in the index. To know vital condition, we follow up one year. Telephonic approach every 4 months. *Results.* A total of 610 patients (58% female) median age 75 years old (SD±6.7), with CI 0.9 (0.7 points). After 1 year 14 patients (35% female) had already died (annual mortality: 2.3%). The annual mortality rate according to CI not adjusted by age, shows: 0 points=1-2%, 1-2 points=2.3%, 3-4 points=12.2%, >5 points=28%. Median CI: dead=2.79, live=0.86 ($p = 0.01$). *Conclusions.* It exists correlation between CI and mortality in the geriatric ambulatory population. Ours patients are older and halthier than hospitalary patients. It's necessary more studies in family practice to obtain adequate prognosis and treatment in elderly patients.

318. ASSESSMENT OF SERUM VITAMIN D LEVELS IN A COHORT OF CANADIAN LONG TERM CARE RESIDENTS

A.G. Jubry¹, R. Plaquin¹, D.A. Hanley² (¹University of Alberta, Edmonton, Canada; ²University of Calgary, Calgary, Canada; ajubry@cha.ab.ca)

Introduction: Vitamin D deficiency is especially com-

mon in the elderly and in those living at Northern latitudes. Current cut-off levels for 25(OH)D likely under-estimate deficiency (<25nmol/l), and insufficiency (<40nmol/l). Residence in a long-term care (LTC) facility has been shown to be a risk factor for Vitamin D deficiency. The many risk factors for osteoporosis and osteoporotic fracture include Vitamin D deficiency. This study was undertaken to evaluate the association between serum 25(OH)D levels and calcaneal ultrasound assessment of bone mineral density in a group of residents in a long term care facility in Canada. *Methods:* Proxy consent was obtained for subjects residing in several LTC facilities in Edmonton, Alberta. Bone mineral density was assessed in each participant at the heel using an Hologic Sahara Calcaneal Ultrasound machine. Each participant had serum evaluation of renal function, parathyroid hormone status and 25(OH)D levels. Information was also collected on mental status (MMSE), use of calcium and Vitamin D supplements and clinical fracture history. *Results:* 37 residents participated, 29 women and 8 men with an average age of 84 years. All were assessed during the winter months. MMSE ranged from 1–29 with an average score of 15. 62% were taking calcium supplements, and 65% Vitamin D supplements. 32% were on bisphosphonate treatment. 25(OH)D levels ranged from 44–243nmol/l with an average of 108nmol/l. No correlation was found between Vitamin D levels and calcaneal BMD measurement ($R=-0.11$; $p=NS$). There was a significant correlation between Vitamin D levels and history of clinical fracture ($R=0.31$; $p<0.05$). Only 10 residents (29%) were below the recommended cut-off for Vitamin D insufficiency (<80nmol/l). *Conclusions:* Vitamin D insufficiency is frequent (29%) in this group of LTC residents from Edmonton, but surprisingly low when compared to other studies from Canada and internationally. Conversely, the level of Vitamin D supplementation is high (65%). This may reflect a growing awareness of the value of adequate serum Vitamin D levels. Interestingly, the absolute levels of 25(OH)D did not correlate with calcaneal BMD but did correlate with fracture history, highlighting the non-skeletal role of Vitamin D in influencing the multifactorial causes of fracture in this high risk group.

319. THE STRUCTURAL-FUNCTIONAL CONDITION OF KIDNEYS AT THE PATIENTS WITH ARTERIAL HYPERTENSION OF ELDERLY AGE

G.A. Junusbekova (Scientific research institute of cardiology and internal diseases, Kazakhstan; gulnara_1010@mail.ru)

The *Aim:* to estimate the structural- functional condition of kidneys at the patients with arterial hypertension (AH) of elderly age. *Materials and methods:* 63 patients with AH of the Ist and IInd degree, 2–4 risk factors are surveyed, from them 38 patients are more senior than 65 years (average age $68,2\pm 1,44$ years) have made the basic group of supervision. Group of the control comparable on a gender, duration and character of current of disease to the basic group, have generated from 25 patients in the age of till 65 years (average age $47,8\pm 4,85$ years). Determined a creatinine level of blood, glomerular filtration rate (GFR) under the formula Cockcroft-Gault, renal functional reserve (RFR) under action protein of loading, level daily excretion of albumen by ELISA method. Defined the linear sizes and volume of kidneys, length renal of a sine, structural index, thickness parenchyma of a kidney in its average

part. Renal blood flow was examined by color Doppler sonography. *Results:* At the patients with AH of elderly age in comparison with group of the control is established authentic decrease of GFR ($81,4\pm 20,2$ and $92,5\pm 11,0$ ml/min accordingly, $p=0,015$), RFR ($3,8\pm 1,3$ and $4,7\pm 1,8\%$, $p=0,025$) and level daily excretion of albumen ($56,9\pm 20,1$ and $39,4\pm 18,63$ mg/day, accordingly; $p=0,001$). The authentic reduction of volume of a kidney ($125,5\pm 15,3$ and $138,7\pm 17,5$ cm³, $p=0,02$) and increase of volume renal of a sine ($25,9\pm 3,1$ and $24,1\pm 2,6$ cm³, $p=0,03$) is revealed. The prevalence of the resistance index of interlobar arteries and all three indexes vascular of resistance of arc arteries is marked. In skilled group the authentic correlation connections microalbuminuria with age of the patients ($r=0,76$ are found; $p=0,01$), volume of kidneys ($r=0,5$; $p=0,002$) and resistance index of index arc arteries ($r=0,85$; $p=0,01$). *Conclusions:* at the patients with AH of elderly age more expressed changes of a structurally functional condition of kidneys are marked, that dictates necessity adequate nephroprotection at therapy of the given category of the patients.

320. BLOOD PRESSURE CIRCADIAN RHYTHM AT THE PATIENTS WITH ARTERIAL HYPERTENSION OF ELDERLY AGE

G.A. Junusbekova, M.K. Tundybayeva (Scientific research institute of cardiology and internal diseases, Kazakhstan; gulnara_1010@mail.ru)

Aim: evaluation of blood pressure (BP) circadian rhythm peculiarities in patients with arterial hypertension of elderly age. *Materials and methods:* 33 individuals were included in investigation and divided into 2 groups. First group included 15 patients middle-aged (10 males, 5 females, average age $56,2\pm 2,8$ years old); Second group is 18 patients of elderly age (11 males, 7 females, average age $63,8\pm 3,2$ years old). Daily monitoring of blood pressure was carried out by ABPM-02 system (Meditech, Hungary). The middle values of systolic BP (SBP), diastolic BP (DBP) per twenty-four hours, during daylight hours and night time, time index (TI) and area index (AI) of SBP, DBP during daylight hours and night time, daily index of SBP and DBP were evaluated. *Results:* analysis of the day and night values has shown that patients with arterial hypertension of elderly age have reliably higher values of SBP and DBP per twenty-four hours, during daylight hours and night time. Load pressure indices — AI SBP and DBP, TI SBP and DBP per twenty-four hours are prevailed in patients with of elderly age. It was revealed during of individual two-phase circadian rhythm study that 44,4% of patients with arterial hypertension of elderly age are dip-pers, 27,7% of them are non-dippers, 11,1% of them are night-peakers and 5,5% of them are individuals with excessive decreasing of night BP. *Conclusions:* thus, patients with arterial hypertension of elderly age have prevailed middle values of BP, load pressure indices and unfavorable circadian rhythm of BP. These patients are special group, where risk of target-organs injury have been redoubled by not only base disease, but failure of the circadian BP-profile.

321. WHO GLOBAL AGE-FRIENDLY CITIES: CONCEPT AND METHODOLOGY

A. Kalache, L. Plouffe (WHO Ageing and Life Course Programme; kalachea@who.int)

Grounded in the WHO Active Ageing Policy

Framework, the Global Age-friendly Cities project continues WHO's objective to influence the determinants of active ageing to optimize health, participation and security over the life course. The age-friendly cities project aims to develop global guidelines to make cities more accessible to older persons and more inclusive of their needs and contributions. Urban communities are the focus for several reasons, the most important of which is the demographic convergence of ageing and rapid urbanization. With funding support from Canada, WHO launched the project in 2006 with the eventual participation of NGOs, municipal government or academic groups in 34 cities of varying size representing all regions of WHO. Based on the Active Ageing Framework and on previous empirical work in North America and in Australia to identify the characteristics of age-friendly communities and services, WHO developed a standard protocol to explore the age-friendliness of the city with respect to eight features: Outdoor Spaces and Public Buildings; Transportation; Housing; Social Participation; Respect and Social Inclusion; Communication and Information; Civic Participation and Employment; Community Support and Health Services. A fundamental principle of the project reflected in the research process has been to examine the lived experience of older persons and to involve them as full partners from start to finish. Thus, focus groups were conducted with older persons aged 60-74 and 75+ from lower and middle SES. The voice of older persons too disabled to participate was expressed by including a group of caregivers. Providers of services to older persons in the public, private and voluntary sector added a perspective based on their experience with older persons. The research protocol has yielded original knowledge through its global perspective and the inclusion of social dimensions of urban ageing. Despite wide differences in the stage of development between participating cities, the concordance of themes is remarkable. This facilitates the development of a global guide as well as the establishment of a global "age-friendly communities" movement.

322. MELOXICAM EFFICACY IN URARTHRTIS TREATMENT AND ITS INFLUENCE ON METABOLIC PARAMETRES

L.A. Kalinnikova, N.I. Zhulina, A.V. Kalinnikova, A.A. Runova (Nizhny Novgorod Region State Health Service Dept. city clinical hospital 3 (Regional geriatric centre), Nizhny Novgorod, Russia; superalina2005@yandex.ru)

Aim: To study the analgetic efficacy of meloxicam, a new NSAID belonging to the COX-2 selective inhibitors group, in the treatment of acute urarthritis; to estimate its influence on certain metabolic parameters. *Materials and methods:* Altogether 22 patients suffering from acute urarthritis have undergone examination, 18 men and 4 women. The average age among the men was 52 ± 0.3 , among the women — 56 ± 0.8 . The duration of the urarthritis condition was 4.5 ± 0.8 years with the men and 3.5 ± 0.7 with the women. The average uric acid level was 348 ± 1.2 mmol/l with the women and 421 ± 1.3 mmol/l with the men. 77.2% of the patients had body-weight index of more than 30, hypertension was registered with 63.6%, 18.1% had type 2 diabetes and impaired glucose tolerance, 54.5% had steatohepatosis, 53.5% had lipodosis. Meloxicam was administered in

the course of two weeks according to a stepwise fashion, at first intramuscularly for 3.5 days, then 15 mg per os daily. Urarthritis treatment efficacy was estimated with the help of a pain visual-analog scale (VAS), besides, before and after the course of treatment ABP, blood glucose, aspartate aminotransferase and alanine aminotransferase were monitored. *Results:* the research has demonstrated alleviation of the pain syndrome on the second day from 7 to 4 points (VAS) with 18 patients, and to 2–3 points with 4 patients. The monitoring analysis (before and after the treatment) of such parameters as blood sugar, aspartate aminotransferase and alanine aminotransferase has revealed no indubitable changes, there has been noted a statistically reliable drop in both systolic and diastolic blood pressures of 1.3% and 0.9% respectively. ($P < 0.05$), probably due to the alleviation of the pain syndrome. *Conclusion:* Meloxicam is effective in acute urarthritis treatment and metabolically neutral, which makes it relevant for treatment of patients with metabolic disorders.

323. EDUCATING MEDICAL DOCTORS AND PUBLIC ON SCREENING AND TREATMENT OF MALIGNANCIES IN THE ELDERLY

D. Kardamakis (University of Patras Medical School, Patras, Greece; kardim@med.upatras.gr)

From 1950 to 1990, the percentage of elderly population (>65 years old) in the United States has grown from 8% to 13% and it is estimated that it will reach the figure of 25% by the year 2030. It is well known that the incidence of malignancy is higher among the elderly, and currently 2/3 of cancer related deaths happen in the elderly population. These figures are not only worth noticing, but also bring about the need for education of both the medical staff and the public in aspects of screening and early disease detection in the elderly. The Hellenic Society of Geriatric Oncology (HSGO) was established in 2004 and it is the only Geriatric Oncology Society in Greece. Its primary aims are (a) to educate doctors for the principles of geriatric oncology, and (b) to educate and alert the public (especially the elderly) about the need of screening and early disease detection that can be life saving. Since 2004 the Society has organized and conducted two Geriatric Oncology National Congresses, one post-graduate Course, and participated actively in three pan-Hellenic congresses. Doctors of many specialties showed great interest in the above activities and since 2004 more than 90 doctors have joined the Society. The most important message of these educational programmes was that there should be no discrimination among the elderly in terms of treatment. Concerning education of the public, the Society has presented the principals and importance of screening and early disease detection in several meetings held in Patras and the periphery, covering a 2 million population. These activities were warmly welcomed and praised by the people whose participation was interactive. Unfortunately Greece is lacking a National Screening program and the majority of the population is ignorant of basic information. Since now, the response of the public to our initiative was more than promising and encouraging. We will continue to organize meetings for organized public groups, trying to fulfill the aims of our Society and hoping that at least the local authorities will continue to support us. On behalf of the

HSGO.

324. LONG-TERM COGNITIVE OUTCOME OF DELIRIUM IN ELDERLY HIP-SURGERY PATIENTS. A TWO AND A HALF YEAR PROSPECTIVE MATCHED CONTROLLED STUDY

M.G. Kat¹, J.F. De Jonghe¹, R. Vreeswijk¹, T. Van der Ploeg¹, W.A. Van Gool², P. Eikelenboom², C.J. Kalisvaart¹ (¹Medical Center Alkmaar; ²Amsterdam Medical Center; j.de.jonghe@mca.nl)

Objective: To study the long term effects of delirium in elderly hip-surgery patients on cognitive outcome. **Design:** Prospective matched controlled cohort study. **Setting:** Medical school-affiliated general hospital in Alkmaar, The Netherlands. **Methods:** Hip-surgery patients (n=112) aged 70 and older who were participants in a controlled clinical trial of haloperidol prophylaxis for delirium, were followed-up for an average of 30 months after discharge. Patients with a diagnosis of dementia or mild cognitive impairment (MCI) were identified based on psychiatric interviews. Proportions of patients with dementia or MCI were compared across patients who had postoperative delirium and matched control patients who did not develop delirium during hospitalization. **Results:** During follow-up 54.9% of delirium patients had died compared to 34.1% controls (relative risk = 1.5, 95% CI = 1.04-2.1). Dementia or MCI was diagnosed in 77.8% of patients with postoperative delirium and in 40.1% of control patients (relative risk = 2.7, 95% CI = 1.2-5.8). No group differences were found for rate of institutionalization. **Conclusions:** Elderly hip-surgery patients with postoperative delirium had an almost doubled risk of having dementia or MCI at follow-up compared with patients without delirium.

325. THE ASSESSMENT OF FEAR OF FALLING IN OLDER PERSONS: RECENT DEVELOPMENTS

G.I.J.M. Kempen¹, L. Yardley², J.C.M. van Haastregt¹, G.A.R. Zijlstra¹, N. Beyer³, K. Hauer⁴, C. Todd⁵ (¹Maastricht University, Maastricht, The Netherlands; ²University of Southampton, School of Psychology, Southampton, United Kingdom; ³University Hospital Bispebjerg, Institute of Sports Medicine Copenhagen & Dept Physiotherapy, Copenhagen, Denmark; ⁴Robert-Bosch-Krankenhaus, Stuttgart & Bethanien-Krankenhaus, University of Heidelberg, Germany; ⁵University of Manchester, School of Nursing, Midwifery and Social Work, Manchester, United Kingdom; g.kempen@zw.unimaas.nl)

Fear of falling is very common in older persons. The 10-item Falls Efficacy Scale (FES) is by far the most well-known measure to assess fear of falling in older persons. Although the FES has shown to have good psychometric properties, the FES has been criticised for its primary focus on basic activities of daily living and the neglect of more physically demanding and socially oriented activities in the scale. In addition, the translation of the FES to other languages, circumstances and cultures poses some difficulties. To solve these problems, participants from the UK, Denmark, Germany, Switzerland and the Netherlands in the Prevention of Falls Network Europe (ProFaNE; www.profane.eu.org) developed two modified scales of the FES: the 16-item Falls Efficacy Scale-International (FES-I) and a shorter version, the 7-item FES-I-7. The psychometric properties of the FES, FES-I and FES-I-7 were tested in a Dutch sample (N=193) of older people living in the community. Descriptive statistics and reliability estimates

(internal consistency and 4 week retest) were computed. Discriminant validity was studied by computing effect sizes according to age (70-79 versus 80+), sex (male versus female), falls history (0 versus 1 versus >1 falls) and fear of falling (as assessed with 1 item and 4 response options: not at all, a little, quite a bit, very much) for the three scales. Internal reliability estimates for FES, FES-I and FES-I-7 were 0.95, 0.96 and 0.92, respectively. The intraclass correlation coefficients for FES, FES-I and FES-I-7 were 0.80, 0.82, and 0.82, respectively. All 11 effect sizes according to age, sex, falls history and fear of falling were slightly but consistent larger for FES-I as compared to FES. Six out of 11 effect sizes were larger for FES-I-7 as compared to FES. Both the FES-I and the FES-I-7 are acceptable and feasible measures to assess fear of falling in older persons. Both include more physically demanding and socially oriented activities as compared to the FES. If researchers or clinicians are particularly interested in the distributions of specific fear of falling-related activities not included in the FES-I-7, the use of the full FES-I may be an alternative to the FES-I-7 which is shorter and therefore somewhat more feasible.

326. CLINICAL MARKERS OF IMMUNE DEFICIENCY IN OLDER PATIENTS

B. Kennes (ULB, Charleroi, Belgium; bernard.kennes@docs.be)

It is now becoming apparent that the immune system undergoes age-associated alterations, which accumulate to produce a progressive deterioration in the ability to respond to infections, to regulate inflammation, to develop immunity after vaccination and to contribute to a higher mortality rate in the elderly. Alterations of haematopoietic stem cells, natural killer cells functions, phagocytes, development, diversity and functions of B-cell and thymo-dependant cells (T cells) are observed and lead to the decline of the quality of innate et adaptive immunity. Intrinsic and extrinsic factors are involved. Special emphasis has been directed to the role of thymic involution and changes among T cells where, without significant changes in the overall number of PBL, but with large changes of the proportion of T cells types and subsets, reduced proliferative responses and cytokines production are observed. Owing to the key role of T cells in adaptive immunity, immune dependant homeostasis is altered, favouring inappropriate immune reaction to microorganisms challenge including weak immune response and excessive inflammatory reaction persistent after the challenge. Longitudinal studies (Swedish study NONA) in which immune parameters were studied on a large population of subjects older than 80, have resulted in the concept of a immune risk phenotype (IRP) associated with reduced life expectancy, defined as : CD4/CD8<1, poor proliferative T response, increased CD8+, CD28-,CD57+ T cells, low levels of B cells and CMV seropositivity. Great clonal expansions of the CD28+ carrying receptors for CMV, were linked to IRP. These cells seem to be anergic, dysfunctional memory CMV specific cells, resistant to apoptosis and are suspected by taking up immunologic space, to lead to a saturation of the immune system (aged-host environment) with inhibitory effect for mounting effective response to new antigens. Increased plasma levels of circulating of TNF α , IL6 and sTNFR, frequently elevated concentrations of acute phase proteins,

demonstrated in elderly cohorts, indicate a low activation of the entire inflammatory cascade and may cause or favour age-related diseases such as atherosclerosis, type 2 diabetes, dementia, sarcopenia or osteopenia. They may translate the presence of several chronic asymptomatic infections or to be the consequence of the inability of the immune system to end the inflammatory response to an aggression after recovery. Il6 levels seems predict functional disability and frailty. Persistent lymphopenia and secondary hypoinmunoglobulinemia have poor pronostic. The higher prevalence of auto-antibodies with low affinity in old without auto-immunity has been associated with lower survival and may reflect the presence of apoptose-resistant cells. The composite immune deficiency related to age makes immunorestorative approaches complex. Indeed, it appears evident that longevity may be the result of an equilibrium between a good response to aggression and a good control of the inflammatory reaction («enough but not to much»). Yet, the benefits of selective intervention including vaccines, nutrition, and exercise are established. Treatment by eliminating excess of dysfunctional CD8 cells, cytokines, hormones, transplantation are promising in animals studies as the development of adapted vaccines for olds are essential.

327. THE PROGRAMME FOR PREVENTION OF PREMATURE AGEING AND AGE-RELATED PATHOLOGY

V.Kh. Khavinson¹, O.V. Korkushko², B.A. Lapin³, V.N. Anisimov⁴, V.G. Morozov¹, L.V. Kozlov¹, V.V. Malinin¹, G.A. Ryzhak¹, K.L. Kozlov¹, V.B. Shatilo², N.D. Goncharova³ (¹St. Petersburg Institute of Bioregulation and Gerontology, Russia; ²Institute of Gerontology of Ukraine AMS, Kiev, Ukraine; ³Research Institute of Medical Primatology, Sochi-Adler; ⁴N.N. Petrov Research Institute of Oncology, St. Petersburg, Russia; khavinson@gerontology.ru)

Prevention of premature ageing and age-related pathology is the main task of gerontology. The results of 35 year experimental studies showed, that the administration of natural and synthesized peptide bioregulators, designed in the St. Petersburg Institute of Bioregulation and Gerontology, to experimental animals improved the functions of their immune system, reduced the occurrence of tumors and reliably increased their mean lifespan by 15-40% as compared to the control. The administration of pineal gland medicinal substances (a complex of natural peptides and its synthesized analogue — a tetrapeptide) to old monkeys resulted in the restoration of the content of melatonin and cortisol in the blood up to the level, observed in young animals. Application of these peptide geroprotectors throughout 30 years for the prevention and treatment of different pathologies and diseases in more than 10 mln patients demonstrated their efficacy and the absence of side effects. The administration of thymus and pineal gland peptide medications to patients (aged 60–90 years) in a randomized study improved the functions of immune and cardiovascular system, reduced the occurrence of infective diseases, increased the level of melatonin and the density of osseous tissue, thus reducing the rate of deaths caused by cardiovascular pathology almost 2-fold during the period of observation (12 years). Basing on the above described 35 years long experimental and clinical experience, we have proposed a complex of peptide geroprotectors intended for the annual oral administration aimed at maintaining main physiological functions of the organism

and preventing premature ageing. This programme is recommended for implementation within large administrative entities for elderly and old persons, as well as for different cohorts of persons affected by adverse climatic, environmental and occupational conditions.

328. TRANSSEXUALISM IN ELDERLY PATIENTS

O. Khefets, K. Angel, W. Stackl (*Rudolfstiftung Hospital, Vienna; oleg.khefets@wienkav.at*)

Objective To report psychosocial and functional long-term results in aged male-to-female transsexual patients. Patients and methods From 1992 to 2007, 134 patients underwent sex-reassignment surgery at our department after previous psychiatric counseling and hormonal therapy. All patients underwent a one-step procedure with formation of neovagina from the inverted penile skin and creation of neoclitoris from glans penis on the neurovascular bundle. The median age is 41 (range 23 to 74), 17 of 134 patients are 60 to 72 years old at the present moment. 15 Patients have been reevaluated by physical examination, questionnaires, blood biochemistry and hormonal status. Results One patient changed back to male identity, all others reported good social integration as a female. Eight patients were sexually interested and were satisfied with the vaginal depth and width. Five of them had regular sexual intercourse with male partners and were able to achieve orgasm. The estrogen substitution has been carried out by all the patients. The serum levels of sex hormones were kept at premenopausal level. No negative influence of long-term estrogen substitution in regard of liver enzymes or thrombosis has been found. Conclusions Good results concerning psychosocial status and sexual function in aged transsexual patients can be reported.

329. CHROMOSCOPY IN OLD AND VERY OLD PATIENTS WITH STOMACH MUCOUS MEMBRANE DYSPLASIA AND METAPLASIA

V.Kh. Khefets, L.I. Popova, N.V. Shumov (*"Orcli" Clinic, St. Petersburg, Russia; dyakovlev@gerontology.ru*)

Our work was aimed at estimating the expedience of chromoscopy for the identification of neoplastic processes in old and very old persons. The trials were conducted on 125 patients (49 men, 79 women aged from 65 up to 80 yrs, average age making 70 yrs). In case of gastroscopy with intravenous anesthesia (1% Propafol solution) areas of mucous membrane were sprinkled with 20 ml of 0,2% indigocarminum or 10 ml of 1% of methylene blue at the spots of relief disturbances. After 10 min. exposition clean wash was done with 4% soda solution. Biopsy was performed in stained zones for histological research. It was revealed that 30 patients had atrophic gastritis with small intestine mucous membrane metaplasia. Metaplasia stage 1–2 was revealed in 52 patients, stage 3 — in 15 patients. 5 cases of stomach cancer were also revealed: 3 cases of highly differentiated adenocarcinoma; 1 case of low differentiated carcinoma; 1 case of signet-ring cell cancer. In all 5 cases no metastases or invasion into the submucous layer were found, which was later confirmed by surgical removal of the tumors. 17 patients had glandular polyps (5 of them were located in the antral segment). Thus, the clinical studies showed that chromoscopy is an effective method of identifying the early forms of stomach cancer and other tumors in the group of old and very old patients

with first revealed dysplasia and metaplasia of stomach mucous membrane.

330. TWO-YEAR RESULTS OF PARTIAL REVASCULARIZATION IN PATIENTS OVER 60 YEARS OF AGE WITH DIFFUSE CORONARY ARTERY DISEASE

A.V. Khmel'nitskiy, K.L. Kozlov (*Hospital #122, department of angiography, St.-Petersburg, Russia; akhmelni@mail.ru*)

It is well known that coronary artery disease (CAD) in octogenarians is deteriorating disease, which limits their every day activity, further isolating elderly people from society. In the same time, stenting of coronary arteries offers safe and effective mode of restoring functional capacity of elderly people. In our hospital we have performed a retrospective analysis of 112 patients with CAD over the age of 60 with «de novo» lesions, which were treated with stenting of one or more coronary arteries. 78 patients received one or more sirolimus-eluting stent (SES) (Cypher, Cypher Select) with mean lesion length (MLL) of $21,0 \pm 3,0$ mm and minimal lumen diameter (MLD) of $0,4 \pm 0,05$ mm. 43% of patients in this group were diabetic. Another 34 patients received one or more bare metal stents (BMS) with MLL of $12,0 \pm 2,0$ mm and MLD of $0,6 \pm 0,05$ mm. 24% of patients in this group were diabetic. In SES group only 17 patients received complete revascularization, rest of the patients received only partial revascularization, meaning that one or more potential zones for stent «landing» were left untreated. In BMS group only 6 patients received partial revascularization. We collected data from clinical observations, 24-hour portable electrocardiography recordings, stress tests and coronarographies to define functional status of patients and ischemia level. Mean time of follow-up for both groups were 22 months. We found out that technical success, peri-procedural complication rate, mortality, rate of major adverse cardiac events did not differ in both groups. *Conclusion:* partial revascularization provides sufficient level of myocardial salvage in elderly, providing them with higher functional status without risks associated with complete revascularization; BMS are still devices of choice in patients with contraindications for prolonged antiplatelet therapy in case of short stenoses; SES are devices of choice for most of the patients, especially for patients with diabetes and with size of coronary vessels $< 3,0$ mm; revascularization of symptom-dependant artery offers angina relief, decrease of anti ischemic drugs load and does not increase risk of acute coronary syndromes compared to complete revascularization.

331. PHYSICAL QUALITIES OF PSYCHOMOTOR FUNCTION DURING LATE ONTOGENESIS OF SPORT VETERANS

I.N. Khokhlov, M.A. Savenko, D.N. Gavrilov (*Institute of Physical Culture, St. Petersburg, Russia; savenko@bk.ru*)

Nowadays one of the main problems of sport science is a prolongation of an active human life. Last achievements of gerontology testify that this problem is solved substantially by rational performance of physical activities. A number of researches has allowed to concretize an orientation and a dosage of physical exercises. A law of regress of physical qualities, psychomotor functions and reserve opportunities of an organism are remained not studied at the same time. Research was spent on veterans of sports training constantly and participating in competitions in quantity by 204 persons. 103 men specialized in speed-power kinds

of sports, 101 men did it in kinds of sports on endurance. Both groups of veterans have been divided into five age subgroups on 20 ± 2 persons in everyone. The age of men of the first subgroup made 40–45 year old, the second 46–50 year old, the third — 51–55 year old, the fourth — 56–60 year old, the fifth — 61 and older. Experiment was disposable testing with use of next tests: dynamometry the right and left hand, a broad jump a push of two legs, for an estimation of speed-power qualities; the step-test, for definition of endurance, the Romberg test for the characteristic of coordination abilities, the test for flexibility, time of the isolated reaction for an estimation of a psychomotor component of speed, reaction to moving object for definition of visually-motor coordination of the movement, dosed out dynamometry for the characteristic of accuracy of regulation of power parameters of the movements, dosed out linear kinemometry for an estimation of accuracy of regulation of spatial parameters of movements. As a result of the lead researches it has been established, that all considered parameters regress in process of increase in age. However speed of recourse is various. Speed-power qualities worsen earlier, than endurance. It does not depend on sports specialization of veterans. Coordination abilities above at the men specializing speed-power kinds of sports. The psychomotor component of speed above at men specializing in speed-power kinds of sports regresses slightly. Visual-motor coordination of movements even less changes. These psychomotor functions having very small age recourse, apparently, are those reserves of an organism which compensate faster recourse of other functions.

332. PERCUTANEOUS CORONARY INTERVENTION VOLUME AND RISK-ADJUSTED MORTALITY RATE IN KOREA

Y.H. Kim, A.Y. Her (*Kangwon National University, Chuncheon City, Kangwon Province, South Korea; yhkim02@kangwon.ac.kr*)

Background: Post-procedural mortality is often used as a surrogate for quality in performance evaluation of medical and surgical services. There have been a large number of studies that have investigated the relationship between short-term outcomes and provider volume for a wide variety of medical conditions and surgical conditions. The objective of this study was to exam the relation between hospital volume and risk-adjusted mortality following percutaneous coronary intervention in Korea. *Methods:* This is a retrospective analysis of the National Health Insurance Review Agency. The study data set included the patient level data as well as all the ICD-10 diagnosis and procedure codes that were recorded in the National Health Insurance Review Agency. The patients' biological, admission and comorbidity information were used in the risk-adjustment model. The risk factors were adjusted with the logistic regression model. Another patients cardiovascular severity risk factors such as diabetes, hypertension, hyperlipidemia were used to classify patients severity. The patients mortality was evaluated among patients who underwent PCI between 2003 and 2004 at low (less 200 cases/year), medium (200–400 cases/year), and high (400 cases or more/year) PCI volume hospitals. *Results:* The final risk-adjustment model consisted of nine risk factors for 7-day mortality and twelve risk factors for 30-day mortality. These factors were found to have statistically significant effects on patient mortality. The c-

statistic and Hosmer-Lemeshow χ^2 goodness-of-fit test showed that the model's performance was good. A total number of 60 low-volume hospitals (9,071 patients) and 27 medium-volume hospitals (15,623 patients) and 15 high-volume hospitals (19,669 patients) were identified. Crude 7-day mortality rate was 0.9% in low-volume hospitals, and 0.7% in medium-volume hospitals and 0.6% in high-volume hospitals. 30-day crude mortality rate was 1.4%, 1.1%, and 1.0% in each volume hospitals. And if, high-risk group patients had treated by PCI in high-volume hospital, may showed relatively low mortality rate compared with patients treated in low-volume hospitals at 7 and 30 days after admission (OR 2.759, $p=0.0396$; OR 1.953, $p=0.0378$). *Conclusions:* Good model performance showed that insurance review data can be used for comparing hospital mortality after adjusting for the patients' risk. So, PCI patients also showed volume-outcome relationship in Korea as shown in other country from previous studies. Compared to high-volume hospital, low-volume hospital had higher 7-day and 30-day mortality and this relationship more apparent in high-risk group patients in Korea.

333. THE ASSOCIATION OF HOMA-IR WITH POSTCHALLENGE HYPERGLYCEMIA IN NONDIABETIC ELDERLY WITH IMPAIRED FASTING GLUCOSE

Y.J. Kim, S.Y. Lee, H.G. Min (*Pusan National University Hospital; joo-dr@hanmail.net*)

Purpose; Isolated postchallenge hyperglycemia (IPH) is more common in elderly adults than the younger. We assessed association postchallenge hyperglycemia with HOMA-estimated insulin resistance in nondiabetic elderly with impaired fasting glucose. *Subject and methods;* We recruited 51 elderly adults over the age of 60 years who had impaired fasting glucose. 75 gram oral glucose tolerance test (OGTT) was performed on all subjects. The subjects were divided into three groups according to 2-hr postchallenge glucose level: normal (≤ 139 mg/dL), impaired glucose tolerance (140 to 199 mg/dL), and IPH (≥ 200 mg/dL). We compared HOMA-estimated insulin resistance, HbA1c, plasma lipid, blood pressure level, metabolic syndrome, and obesity index among subgroups and assessed factors related to IPH. *Results;* Of the 51 subjects, 20 (39.2%) had IPH. Age, sex, smoking status, blood pressure level, plasma lipid, metabolic syndrome, and obesity index did not differ across normal, impaired glucose tolerance, and IPH groups. There were significant differences in fasting insulin, HbA1c, and HOMA-estimated insulin resistance between the IPH and normal or impaired glucose tolerance groups. After adjusting for age, obesity index, blood pressure level, plasma lipid, HOMA-estimated insulin resistance was positively correlated with HbA1c. Based on binary logistic regression analysis, HOMA-estimated insulin resistance was an independent factor affecting IPH (odds ratio=43.6, $P=0.047$). *Conclusions;* IPH was common disease in elderly adults with impaired fasting glucose. HOMA-estimated insulin resistance was significantly higher in IPH than normal or impaired glucose tolerance groups. HOMA-estimated insulin resistance was the independent factor affecting IPH in elderly adults.

334. OUTCOME OF SUB-ACUTE HOSPITALIZATION IN A GERIATRIC UNIT: OPERATING CRITERIA VS. END RESULTS

L. Klein, N. Tsabar, I. Seleznev, E. Granot (*Shoahm*

Medical Centre; lamedmem@zahav.net.il)

Sub-acute care provides completion of medical treatment for patients diagnosed and treated for acute illnesses. Sub-acute care is emerging especially in the geriatric specialty, serving the goals of terminating the treatment, rehabilitation of the deconditioned and, finally, proper placement of the elderly patient. The Israeli Ministry of Health has published in 2001 criteria for operation of geriatric sub-acute units in Israel. Such a unit has been operating since 2005 in Shoahm Medical Center in Pardes-Hanna, Israel. To examine if the unit complies with the formal hospitalization criteria, we looked at the characteristics of patients admitted to the unit during a period of 502 days. 210 admissions (104 males, 106 females) have been recorded between February 15th, 2005 and July 2nd, 2006. The average age was 77.2 years (range 39-99, 89% above 60 years old). The leading diagnoses included complicated wounds (18%), orthopedic surgeries (15%), cardiovascular diseases (15%), chronic lung diseases (10%), cerebrovascular accidents (8%), pneumonias (7%) and urinary tract infections (7%). Other diagnoses (20%) included different infections, malignancies and metabolic disorders. The average length of stay was 15.4 days (range 0-64, 74% 5-30 days, 14% less than 5 days, 12% above 30 days). The average length of stay for different state of diseases were: for orthopedic surgeries 22.3 days, for complicated wounds 19.8 days, for cerebrovascular accidents 15.5 days, for chronic lung diseases 12.9 days, for pneumonia 12.4 days and for urinary tract infection 10.7 days. Patients were discharged as follows: home (48%), nursing home (20%), acute unit (14%) and skilled nursing facility (6%). 13% of the patients have died; the main diagnoses leading to patients' death were malignancies and septicemia, which are not included in the formal admission criteria to a sub-acute unit. 24% of the patients with other diagnoses have died, representing 37% of the total deaths in the study population. 12.3% of the patients were younger than sixty years old. This group had different distribution of diagnoses comparing to the geriatric groups: only 4% stays were for pneumonia (vs. 7% for geriatric stays) and none for CVA (vs. 9%). The young group also differed in outcome: more patients were referred to acute hospital (22% vs. 13%), and less were discharged to the community (39% vs. 48%). *Conclusion:* the majority of patients referred to post acute care comply with the operating criteria of the unit, but the unit still remains the only address for young sick patients who cannot be discharged home upon termination of the acute phase of their treatment. The average length of stay in the sub-acute unit did not digress the recommended period. Two thirds of the patients were discharged to the community, either home or to a nursing home. The future of the sub-acute units depends upon its hospitalization outcome, its financial management, and its mutual agreements with the health management organizations which buy its services.

335. HEART ELECTRIC HETEROGENEITY IN POST STROKE PATIENTS

V.E. Kondratiuk, L.M. Yena (*Institute of Gerontology AMS of Ukraine, Kiev, Ukraine; Kondratiuk-vital@mail.ru*)

Goal: to study myocardial electrophysiological inhomogeneity and its relation to heart structural and functional changes in hypertensive post stroke. *Material and*

methods: Hypertensive patients undergone ischemic stroke (IS) aged 45–59 yrs (middle-aged) and 60–74 (elderly) as well as hypertensives (EH) of corresponding age were enrolled in the study. Late atrial (LAP), early (EVP) and late (LVP) ventricular potentials were registered after Synt. Frank. The criteria of LAP — DFIP \geq 120 ms, LVP and EVP — DQRS $>$ 120 ms, RMS40 $<$ 20 uB, LAS40 $>$ 38 ms at the beginning initially and at the end of the complex QRS. EchoCG in M- and B-mode was used for assessment of left ventricular mass (MMLV) and type of heart remodeling. *Results.* The frequency of LAP detection in IS was increased by 45% as compared to EH. DFIP in middle-aged and elderly IS was longer than in EH by 10,6% and 14,0% ($p<0,05$), but RMS20 was lower by 35% and 44%, respectively ($P<0,05$). LAP were revealed in 72% middle-aged SI with eccentric left ventricular hypertrophy (LVH) without dilatation LV and in 100% elderly SI with eccentric LVH with dilatation LV. The incidence of LVP registration was increased by 18 and 26% in middle-aged and elderly IS correspondently in comparison with EH ($P<0,05$). The high frequency of LVP detection was characteristic in middle-aged IS with eccentric LVH without dilatation LV, whereas in elderly IS — concentric LVH. DQRS was increased by 7,9% and 6,8%, RMS40 was decreased by 34 and 51% in middle-aged and elderly IS as compared to EH. Stroke is accompanied the deterioration of the ECG of high resolution which evidences the heart electrophysiological instability. There were no EH with EVP, at the same time in IS the incidence of EVP was 12% in middle-age patients and 16% in elderly patients. *Conclusion.* Heart electric instability is characteristic both for atrium and ventricle in post stroke patients, especially with concentric LVH and eccentric LVH with dilatation.

336. CIRCADIAN PATTERN OF INTRAGASTRIC ACIDITY IN ELDERLY PATIENTS WITH DUODENAL ULCER DISEASE

O.V. Korkushko, D.M. Yakimenko, M.S. Romanenko, S.S. Naskalova, V.B. Shatilo (*Institute of Gerontology AMS of Ukraine, Kiev, Ukraine; mr@geront.kiev.ua*)

Young patients with duodenal ulcer (DU) disease secrete more acid than normal subjects. The acid secretion in these patients fluctuates during 24-hour period with high rates in the evening and in 1st half of the night. Whether there are 24-hour intragastric pH fluctuations in elderly patients remains unclear. *Objective.* To study the circadian pattern of intragastric acidity in elderly patients with DU. *Materials and Methods.* 27 patients (69.7 \pm 4.8 yr) with DU were recruited for this study (13 patients with acute DU and 14 patients after late healing). A 24-hour pH-monitoring in the stomach corpus was performed using tungsten electrodes and pH recorder (Orimet, Ukraine). The pH measurements were automatically stored every 8 seconds. Meal timing and composition were standardized. The recorded data were analyzed for predefined time periods: morning (5 am–10 am), daytime (11 am–4 pm), evening (5 pm–10 pm) and night (11 pm–4 am). *Results.* For both groups median basal pH at the study beginning was estimated as hypoacidity — 3.00 in acute DU group and 2.70 in late healing group. Median 24-hour pH was 1.88 in patients with acute ulcer and 1.92 in patients with healed ulcer. In the daytime median pH was 2.08 and 1.96, respectively. In the evening median pH was 1.80 in acute DU group and 1.92 in late healing group, during the night

median pH was 1.64 and 1.80, respectively. Hence, in patients with acute DU night pH values tend to be less than in late healing group. Morning median pH values corresponded to daytime values. Thus, during the evening and nighttime the gastric acidity in both groups was higher than during morning and daytime hours. Both groups of patients showed circadian rhythm in gastric acidity with high acidity in the late evening and in the first half of the night and reduced acidity in the second half of the night. pH patterns of both groups didn't differ and resembled those of healthy subjects. Elderly patients differed from young patients with DU in the pH rise in the second half of the night, because constantly lower intragastric pH values at nighttime were found for the young patients.

337. INTRAGASTRAL PH CIRCADIAN RHYTHM SPECIFICITIES IN HEALTHY ELDERLY SUBJECTS

O.V. Korkushko, D.M. Yakimenko, V.B. Shatilo, S.S. Naskalova, M.S. Romanenko (*Institute of Gerontology AMS of Ukraine, Kiev, Ukraine; naskalov@bigmir.net*)

Purpose: To study the 24-hour intragastric pH dynamics in healthy young and elderly people. *Methods:* The study involved 7 young (20–34 years) and 7 elderly (60–74 years) persons with the preserved acid-producing function of gut. A 24-hour intragastric pH monitoring in the stomach body was performed using tungsten electrodes and pH register (Orimet, Ukraine). The automatic memorization interval for pH meanings was 8 sec. Five days prior to investigation and during its performance, all study subjects were kept in clinic on the standard diet with food intake at 09:00, 14:00 and 18:00 hours. The 24-hour intragastric pH dynamics in healthy young and elderly people practically coincided and did not differ in time interval between 9 a.m. and 24 p.m., both during food digestive and inter food digestive periods. The minimal intragastric pH meanings during 24 hours were similar, being registered in the evening between 20:00 and 24:00 hours. However during night hours (from 22:00 till 6:00) and in the morning (from 6:00 till 9:00) the intragastric pH level was significantly lower in the young (2.48 and 1.85) compared to the elderly (4.45 and 3.17, respectively), evidencing thus for the reduced acid-producing gut function in older age group. In this connection, the 24-hour pH rhythm amplitude increases with age. *Conclusion:* The results obtained point to the maintenance of 24-hour intragastric pH in healthy elderly people. On the other hand, due to the more significant increase of pH at night and early in the morning the 24-hour intragastric pH amplitude increases in the elderly. The reasons of this phenomenon are unclear and require further investigation.

338. PROGNOSES EFFICIENCY OF LOWER EXTREMITY TELANGIECTASIES SCLEROSING BY A DERMATOCOSMETOLOGIST

T.N. Korolkova, M.A. Ignatyuk, R.A. Karachunov (*St. Petersburg Medical Academy of Postgraduate Studies; ibg@gerontology.ru*)

The occurrence of lower extremity telangiectasies (LETAE) increases with age. According to our data, they are revealed in 5% of cases in women younger than 20 years, in 26% of cases in women of 21–30 years and in 37% — in 31–40 years' age group. 159 patients with LETAE were under observation from 2001 to 2006.

LETAE size, shape and localization were evaluated. Case histories showed, that cases of LETAE were often observed in case of varicose disease and atherosclerosis of the lower extremities vessels (80,5%), arterial hypertension (57,2%), excessive body weight (50,3%), endocrine system diseases (43,4%), body weight deficiency (35,8%), hypotonia (25,8%). LETAE patients reported harmful habits, such as smoking (86,8%) and alcohol abuse (7,5%). Only 11,9% of patients did not report any harmful habits. 56,6% of study participants reported their occupation being connected with static or dynamic physical loads, and 26,4% of participants — with temperature impacts (high or low temperatures). The analysis revealed a high extent of correlation between LETAE occurrence and the above factors. Basing on the above, three levels of esthetic defect and three risk groups of LETAE were figured out. The level of esthetic defect depended on the diameter, shape and localization of telangiectasy. Criterion for risk group selection was the number of LETAE and the value of Pearson's correlation coefficient. Risk group 1 was formed of patients with less than 10 LETAE spots, having none of the above named accompanying diseases or harmful habits and no occupational peculiarities. Risk group 2 consisted of patients with 10-30 LETAE spots and Pearson's correlation coefficient between the above factors making 0,25-0,75. Risk group 3 included patients with more than 30 LETAE spots and Pearson's correlation coefficient being higher than 0,75. The level of esthetic defect enables the selection of the adequate method of vessels sclerosing and the estimation of the number of repeated procedures. LETAE risk group enables the prognosis of this process development, as well as of the efficiency and the number of repeated procedures.

339. APPLICATION OF DRUG ELUTING STENTS IN PROPHYLAXIS OF RECURRENT MYOCARDIUM REVASCULARIZATION FOR GERONTOLOGICAL PATIENTS

K.L. Kozlov¹, I.B. Oleksjuk² (¹S.M. Kirov Military Medical Academy; ²Central Medical Sanitary Hospital № 122, St. Petersburg, Russia; ibg@gerontology.ru)

The purpose of research: to define the efficacy of «Cypher» and «Cypher select» coronary stents for treatment of stenosis and occlusions of coronary arteries and for prophylaxis of recurrent surgical operations in the stented coronary segments. Materials and methods: since June, 2002 to November, 2005, 133 coronary stents, incl. «Cypher» — 56 stents (42%) and «Cypher select» — 77 stents (58%), were implanted to 100 middle and old age patients at the First clinic (the surgery of doctors improvement) of Military Medical Academy and at Central Medical Sanitary Hospital № 122. Age of patients varied from 60 to 89 years. 85 patients (85%) were male, 15 patients (15%) — female. The guidewire with hydrophily coating «Shinobi plus» (Cordis) was applied for recanalisation of occlusions of coronary arteries. The implantation of stents was made after recanalisation and predilatation. Diameter of implanted stents varied from 2,25 up to 3,5 mm, length — from 8 up to 33 mm. Stents with the following size were implanted mostly: 3,0×13 mm — 23 stents (17,29%); 3,0×18 mm — 14 stents (10,53%); 2,5×18 mm — 11 stents (8,27%); 3,0×23 mm — 11 stents (8,27%); 3,5×18 mm — 9 stents (6,77%). Stents with another sizes were implanted in the minority cases. *Results:* successful PCI was performed in all 133 cases of

stent implantations. «Cypher» was implanted after balloon dilatation in 67 cases (50,4%); and by direct stenting without balloon dilatation in 66 cases (49,6%). Lethal events, major adverse cardiac events during intervention and early post-procedure period were not observed. The restenosis rate was 0% for the first-six-month period at the routine coronary angiography. *Conclusion:* application of drug eluting stents (sirolimus) is highly effective for treatment of various stenoses types and occlusion lesions of coronary arteries. Equally successful angiographic results were found in all patients at routine coronary angiography six-months-after PCI both in direct stenting group and in group of patients after predilatation with no difference in diameters and lengths of implanted stents. Received data are allowed to say about high efficacy of primary coronary stenting with «Cypher» and «Cypher select» implantation and low necessity of recurrent revascularization of stented coronary segments in case of implantation abovementioned stents.

340. SERUM CONCENTRATIONS OF LIPIDS AND DEPRESSIVE DISORDERS IN PATIENTS WITH CORONARY ARTERY DISEASE

S.N. Kozlova¹, U.S. Krilova¹, N.G. Golubev², E.V. Shlyakhto¹, M.U. Sitnikova¹, N.G. Neznanov³ (¹Almazov Institution of Cardiology, ²Pavlov Medical University, ³Bekhterev Institution of Psychiatry, St. Petersburg, Russia; svei@spmu.rssi.ru)

Background. In the different studies is discussing relationship between cholesterol level and depressive disorders in coronary artery disease (CAD). The results of last studies were very contradictory. *Aim of study.* Investigation serum concentrations of lipids in CAD patients with depressive disorders. *Materials and methods.* Totally, 37 males at the mean age of 62,5±10 years with verified CAD were included in the study. Among them, there were 31 patients with stable effort angina of I-IV functional class. During the entire observation period the 70 % of patients received cholesterol-lowering therapy (statins). Psychiatrist assessed psychological symptoms. The 21-point Hamilton Rating scale for Depression was used for assessment of patients. Peripheral blood samples were obtained from the cubital vein of fasting subjects. Levels of serum total cholesterol (TC), high-density lipoprotein cholesterol (HDLC) and tryglycerols (TG) were determined using enzymatic method. Low-density lipoprotein cholesterol (LDLC) was calculated by Friedewald's formula. *Results.* The analysis of the depressive disorders revealed the two groups of patients: 9 patients with clinically significant depressive disorders and 28 patients without clinically significant depressive disorders (control group). Lipid profile in the group with clinically significant depressive disorders: TC — 4,96±2,17 mmol/l, HDLC — 1,32±0,07 mmol/l, TG — 1,7±0,38 mmol/l, LDLC — 2,91±0,2 mmol/l. Lipid profile in the control group: TC — 4,97±0,18 mmol/l, HDLC — 1,27±0,04 mmol/l, TG — 1,99±0,17 mmol/l, LDLC — 2,83±0,18 mmol/l. These parameters were not significant different. *Conclusion.* There were no significant differences between the two groups in lipid profile. All patients received statins, however, level LDLC in the group with clinically significant depressive disorders was high then aim level, recommended for these patients. Relationship hypercholesterolemia and depression may be due to cholesterol-mediated alterations in membrane

fluidity. Excessive cholesterol may manipulate the conformation and functions of membrane-bound proteins and serotonergic-receptors by reducing neuronal membrane fluidity. These changes in membrane fluidity may lead to a depressive and anxiety disorder in patients with CAD.

341. THE PROGRAM OF POST-GRADUAL PROFESSIONAL TRAINING ON AGEING PREVENTION

V.N. Krutko, A.M. Bolshakov (I.M. Sechenov Moscow Medical Academy; krutkovn@mail.ru)

Practical implementation of ageing prevention technologies restrains by the absence of enough qualified experts in this area of preventive medicine. The Curriculum and the Program of post-gradual professional training cycle «The Ageing Prevention as an Actual Problem of a Hygienic Science and Practice» has been developed on The Faculty of Post-gradual Professional Training on Medical Prophylaxis of the I.M. Sechenov Moscow Medical Academy. Duration of a cycle: 72 hours. The given program includes the following themes: (1) The Ageing Prevention as a new area of preventive medicine; (2) Fundamental bases of geroprevention; (3) Elements of gerontology informatics; (4) Diagnostics of ageing; (5) The general approaches and methods of Ageing Prevention and bioactivation; (6) Syndromes, partial processes of ageing, and methods of their correction; (7) Nutrition and ageing. Also the manual «Ageing Prevention» for the students of medical prophylaxis faculties of post-gradual professional training is prepared for printing. The given task is fulfilled as the grant in the frame of «The Program of formation of innovative educational space of the I.M. Sechenov Moscow Medical Academy» in 2006 year.

342. EFFECT OF SMALL PEPTIDES ON ADAPTIVE AND SEXUAL BEHAVIOR OF AGEING RATS

T.A. Kudriavtseva¹, A.A. Bairamov², O.M. Efreimov², I.N. Zaichenko², G.A. Ryzhak¹, E.I. Grigoriev¹
(¹St. Petersburg Institute of Bioregulation and Gerontology; ²State Research Institute of Experimental Medicine; ibg@gerontology.ru)

One of the priorities of modern gerontology is the design of peptide medications capable of correcting age-related disorders in the central nervous system. Reduced stress resistance and involution of reproductive system, accompanied by significant neuroendocrine changes in the organism reduce the quality of life in older people. Peptide bioregulators are in many cases capable of resolving this problem. Our work was aimed at studying the possibility of correcting age-related disorders in adaptive and sexual behavior (SB) in male rats with two peptides — Vilon (Lys-Glu) and its analogue (Glu)-Lys in the experimental model of ageing male reproductive system — hemigonadectomy (HGE). «Open field» adaptive behavior test of HGE animals showed that Vilon enhanced the spontaneous motional activity in the animals, which was earlier reduced by surgery, this effect being more noticeable in case of the dose of 0,1 µg per rat, than 1 µg per animal. The analogue of Vilon caused an insignificant increase in the motional activity, but the animals treated with it showed a low level of anxiety, lower dosage again producing a stronger effect. Dipeptides effect on SB of HE animals was studied using high doses — 100 µg and 250 µg per animal. It was shown, that Vilon did not cause any significant changes in SB of

the animals, exerting only a weak stimulating effect on their motivation and copulative behavior. Administration of the analogue of Vilon to HGE male rats stimulated their SB, and higher dose improved SB parameters of old animals up to the level of young ones. Thus, we may conclude, that small peptides and their synthetic analogues have good prospects in the correction of age-related adaptive and reproductive behavior disorders.

343. AGEING AND CHANGES IN EXTRACRANIAL AND INTRACRANIAL ARTERIES

A. Kwater, B. Gryglewska, S.A. Salakowski, T. Grodzicki (Jagiellonian University Medical College, Cracow, Poland; ajkwater2@interia.pl)

Objective: The aim of the study was to test the hypothesis that ageing may have similar impact on intracranial and extracranial arteries. *Design and Method:* Patients over 40 years old without cerebrovascular disease were recruited for the study. Transcranial doppler (TCD) examination was performed bilaterally. The middle cerebral arteries (MCA) were insonated through transtemporal window and mean blood flow velocity (V mean) was measured. Gosling's pulsatility (PI) and Puercelot's resistivity (RI) indexes were calculated. Carotid — femoral pulse wave velocity (PWV) was obtained as a mean value of 10 measurements (Complior device). Intima-media thickness (IMT) was calculated as a value of 12 ultrasonographic measurements performed on proximal and distal wall of common, bifurcation and internal carotid arteries. Blood pressure was measured non-invasively and pulse pressure (PP) was calculated. Obtained data were compared in two age groups of patients: 40–59 and ≥60 years. The Pearson correlation coefficient was calculated to measure relations between age and studied parameters. *Results:* The study population consisted of 147 subjects, age range: 40–86 years, mean age — 59.0±9.2 years, 49.0% were men. The data (mean values±SD) in the two groups of patients and correlation analysis of age and PP, PWV, IMT, PI, RI, V mean were presented in table.

	40–59 yrs n=85	≥60 yrs n=62	Correlation with age r-coefficient, p-value
PWV [m/s]	11.17±1.79	15.04±3.71***	0.657***
IMT [mm]	0.90±0.26	1.02±0.30**	0.332***
PP [mmHg]	46.20±12.44	52.79±14.61**	0.244**
PI	0.87±0.15	1.02±0.23***	0.413***
RI	0.56±0.065	0.62±0.066***	0.407***
V mean [cm/s]	0.65±0.16	0.54±0.16***	-0.382***

** p<0.01, *** p<0.001.

Conclusion: Age caused large arterial damage reflecting subclinical atherosclerosis and wall stiffness expressed by increased IMT, PWV and PP. Cerebral circulation displayed increased pulsatility and resistivity indexes and decreased flow velocity. This decrease might indicate preserved cerebral autoregulation to protect from higher blood pressure in the elderly subjects.

344. DEVELOPMENT OF HEALTH PROMOTION AND DISEASE PREVENTION PROGRAMS FOR THE ELDERLY IN KOREA

H. Kwon¹, C. Lee¹, J. Park¹, B. Cho², J. Choi³
(¹Healthcare System Gangnam Center, Seoul National University Hospital; ²Health Promotion Center, College of Medicine, Seoul National University, Korea; ³College of

Medicine, Konkuk University; ezkel@paran.com)

Korea is one of the most fast-aging countries in the world. According to the report from MOHW, it will take only 18 years for Korea to become aged society from aging society. Most cancers, chronic diseases and disabilities are more common in the elderly and can be prevented by healthy life style, controlled by risk factor modification or treated if early diagnosed. But specific symptom and disease oriented medicines by specialists are still emphasized in Korea. This phenomenon has resulted in high medical costs and low efficient health outcomes. The purpose of this study is to develop standardized health evaluation and promotion programs for the elderly (aged 65 or older) which are evidence-based, clinically practical and effective, easily accessible and cost beneficial. We developed program consisted of three categories — evaluation, management, and follow up. Each categories are consisted of six sub-categories; health risk, physical function, cognition/mood, major disease, disease prevention, and diet/nutrition. On evaluation program, we used well-known tools such as Korean version of BEPSI, IPAQ, short form of FFQ, BDI, SPPB and standing on one foot. On management program, we show hexagon consisted of each subcategory, indicating each score and balance of them. We also present management guidelines according to the result of evaluation. Especially we focused on modifiable risk factors and tried to give motive and information to improve those risk factors. On follow up program, we compare previous results, show them longitudinally, re-enforce positive changes and correct negative changes. We also made a web-based version of this program, so more people could access to this program.

345. THE INTRODUCTION IN BELGIUM OF A BELGIAN MINIMUM GERIATRIC SCREENING TOOLS: A SUCCESS STORY

M. Lambert¹, T. Peppersack¹, J.P. Baeyens² (¹College for Geriatrics, Belgium; ²Geriatrics, AZ Damiaan Oostende, Belgium; gerltm@uzbrussel.be)

Health services for the older persons are becoming increasingly important in industrialized nations, and comprehensive geriatric assessment (CGA) is one of the procedures designed to improve the care for this population. CGA determines an older person's medical, psychosocial and functional situation, his environmental resources and problems, and resulting in an overall plan for treatment and follow-up. A survey conducted in 2003 on behalf of the Belgian College for Geriatrics showed that, despite the clear interest of the geriatric teams, CGA was not used enough. Considering these results, the College for Geriatrics reviewed the literature in order to propose instruments that could be accepted and used by the teams for the following domains: activities of daily living (ADL), instrumental ADL, risk for falling, cognition, depression, social complexity, malnutrition, pain and frailty. The selected tools became the basis for the «Belgian Minimum Geriatric Screening Tools» (BMGST). In 2005 the Belgian geriatric services were asked to test the use of the BMGST for 10 consecutive admissions. Thirty-two percent of the services cooperated in the project and the results showed that, except for the item risk for falling, for all other items there was a significant increase of detected problems, which might otherwise have remained unidentified. The College for Geriatrics and the Belgian Society for Gerontology

and Geriatrics decided to conduct a new survey in 2007, to register whether BMGST was still in use and which other tests were used by the geriatric services. The results of this survey showed a very positive evolution compared to the situation of 2003. Seventy percent of the services responded, showing that 100% of the respondents now used screening tools on a regular base. Reasons for not using all tools of the BMGST were mainly lack of time or of staff, and the use of other screening tools. At least 89 different screening tools, other than those of the BMGST, are in use. *Conclusion:* a set of validated, feasible, specific and sensitive screening tools has been selected by the Belgian College of Geriatrics under the form of the BMGST and is now widely applied. There is still, however, an enormous variety of other tests used in Belgian geriatric services. The use of screening tools in these services appears to have evolved favourably over the period 2003-2007.

346. PHYSICAL ACTIVITY IN MIDDLE-AGED ADULTS REDUCES RISKS OF FUNCTIONAL IMPAIRMENT INDEPENDENTLY OF ITS EFFECT ON WEIGHT

I.A. Lang¹, J.M. Guralnik², D. Melzer¹ (¹Epidemiology & Public Health Group, Peninsula Medical School, Exeter, UK; ²National Institute on Aging, Bethesda, MD, USA; iain.lang@pms.ac.uk)

Objective: To assess the association between physical activity and subsequent physical functioning in middle-aged adults across a range of body mass index categories. *Design and setting:* Prospective nationally representative cohort studies of 1,507 individuals in England and 8,702 in the USA aged 50 to 69 years and free of impairment at baseline, followed up for six years. *Measurements:* Self-reported and measured body mass index (BMI) and self-reported level of physical activity. Outcome measures were score on a physical performance battery and self-reported mobility problems. *Results:* In both studies, being overweight and being obese were associated with increased risk of functional impairment (compared to being of recommended weight). In all weight categories, and both countries, higher levels of physical activity were associated with lower risks of functional impairment whether or not weight loss had occurred. For example, US respondents of recommended weight who did not lose weight but who were active on three or more days per week (BMI 20 to 25) had a relative risk (RR) of incident mobility difficulties of 0.40 (95% CI 0.23 to 0.68); for those who were obese (BMI 30 and above) the corresponding RR was 0.62 (95% CI 0.46 to 0.83). *Conclusions:* Excess bodyweight is a risk factor for impaired physical function in middle-aged people. Physical activity is protective of physical functioning in this group even among those who maintain higher than recommended bodyweight. Older adults should be encouraged to engage in appropriate levels of physical activity even if weight-loss is not possible.

347. A FOLLOW-UP STUDY OF COGNITIVE, BEHAVIORAL AND PSYCHIATRIC SYMPTOMS OF DEMENTED PATIENTS IN MEMANTINE-TREATMENT

L. Larsen¹, D.F. Madsen¹, N. Weis², J. Sorensen², N.C. Gulmann², A. Aamand² (¹University of Aarhus, Aarhus, Denmark; ²University Hospital of Aarhus, Risskov, Denmark; larsl@psy.au.dk)

Background: In 2002 the anti-dementia drug Ebixa (memantine) was released on the Danish market. The drug

generated great interest as it could be used for treating patients with severely progressed dementia, whereas the traditional anti-dementia drugs are prescribed primarily to patients with mild to moderate dementia. Memantine has been demonstrated to have a positive effect on cognitive, behavioral and emotional symptoms of dementia. As we had a number of patients in the geropsychiatric clinic who were to be treated with Ebixa, we planned a follow-up focusing on cognitive, behavioral and psychiatric symptoms. *Objective:* To assess cognitive, behavioral and psychiatric symptoms before and during treatment with memantine (Ebixa). *Method:* A follow-up study of 45 elderly patients with moderate to severe dementia who were examined twice with a Danish version of the Severe Impairment Battery (SIB), an abbreviated Danish version of Crichton Royal Behaviour Rating Scale (CRBRS) and a Brief Neuropsychiatric Scale (BNS); once before and once after approximately three months of treatment with memantine. *Results:* A significant reduction of the neuropsychiatric symptoms as measured by BNS, whereas scores on SIB and CRBRS did not change significantly. *Discussion:* The role of memantine in the treatment of psychiatric symptoms of dementia is discussed.

348. NEUROLOGICAL DISEASES AND FALLS IN THE ELDERLY

G. Latorre Gonzalez, A. Gonzalez Ramirez, M. Lazaro del Nogal, J.M. Ribera Casado (*Hospital Clinico San Carlos, Madrid, Spain; algomiau@hotmail.com*)

Introduction: Falls in the elderly population are a very important problem as they may lead to burdens to the patient, the caregivers and the health system. Neurological diseases are a well known risk factor for falls because the disturbances on gait and posture they produce. *Material and methods:* In this study we analyze the prevalence of neurological diseases among old patients from the community with usual fallings. We selected a group of 105 fallers from Unit of falls of Department of Geriatrics, older than 65 years with more than one fall in the last 6 months. *Results:* 61.9% of the patients had at least one neurological disorder and 38.1% were in the group of fallers without neurological comorbidity. 21.5% of the patients in the group with neurological disorders were men (p<0.002). The mean age was 77.6 (SD 5.5) for the patients with neurological disorder and 77.8 (SD 3.8) for the non-neurological group. Cognitive impairment was the most frequent condition (50%), and among this group, 39% corresponded to Alzheimer disease, that was the most frequent dementia. The second disturbance found was extrapyramidal diseases (24%), with Parkinson disease and progressive supranuclear palsy as the most frequent. Cerebrovascular disease, degenerative myelopathy and polyneuropathy were the following diseases, found in the 10% of the patients. Other illnesses found were syncope, epilepsy and cerebral meningioma. *Conclusions:* neurological diseases are an important risk factor to produce falls in elderly patients, due to the disturbances on gait and balance associated with them. Patients with neurological illness have more possibility to fall, specially those with dementia and extrapyramidal syndromes.

349. CORTICAL AND TRABECULAR BONE DENSITY AND SSI OF THE FOREARM IN HEMIPARESIS AFTER STROKE

O. Lazoura¹, S.K. Stathopoulou¹, E. Drakonaki¹, V.

Antoniou¹, L. Fragopoulou¹, P. Kosmidis¹, G.M. Zavras¹, P.J. Papadaki¹, A.N. Dimitrakopoulos² (¹*KAT General Hospital, Athens, Greece;* ²*Medical School, University of Athens, Eginition Hospital, Athens, Greece; rstathop@in.gr*)

Aim: To compare bone mineral density of the forearm between paretic and normal arm in hemiparetic men six months after stroke. *Materials-Methods:* Twenty Greek male patients with a six-month history of hemiparesis due to stroke participated in the study. Cortical and trabecular bone density were measured at the distal radial epiphysis (4% and 20% respectively of the length of the radius) of both the paretic and normal limbs. Peripheral quantitative computed tomography (pQCT) was the method used for measurements. Patients were evaluated for the degree of spasticity and the phases of motor improvement. *Results:* Stroke patients had a mean age of 63,3+/-9,9 (range 44-75) years. Trabecular and cortical BMD as well as SSI at the 4% and 20% of the length of the radius were as follows:

pQCT slice	parameter	Normal side	Paretic side	P value
4% (mg/ccm)	BMD trabecular	194,3±	183,34±	>0,05
		43,22	49,41	
20% (mg/ccm)	BMD cortical	1094,02±	1075,08±	>0,05
		35,57	51,47	
4%	SSI	440,9±	410,1±	>0,05
		115,4	82,9	
20%	SSI	314,1±	261,5±	>0,05
		142,3	177,4	

All the patients regained part of upper limb mobility within the first three months. Five patients had spasticity (25%). *Conclusion:* In men with a six-month history of hemiparesis BMD and SSI of the affected side's radius were not significantly different from BMD and SSI of the normal side.

350. URINE ANTIGEN OF NEUMOCOCCO LIKE THE GOLD STANDARD IN THE DIAGNOSIS OF THE PNEUMONIA BY STREPTOCOCCO PNEUMONIAE

M.J. Led Dominguez¹, J. Gonzalez-Moraleja², M.S. Amor Andres¹, S. Carmona³, C. Grau², M.A. De la Torre¹, B. Cobos¹, A. Blanco¹, F. Madruga¹, M.A. Carbonell⁴ (¹*Hospital Virgen del Valle, Geriatrie, Toledo, Spain;* ²*Hospital Virgen de la Salud;* ³*Hospital Fuenfria;* ⁴*Hospital Virgen del Valle; msamor@sescam.jccm.es*)

Introduction: Diagnosis of pneumococcal pneumonia is complicated by the lack of a diagnostic reference standard that is highly sensitive and specific. *Objective:* To determine the profitability of the diagnostic tests in the for Streptococo Pneumoniae in 75-year-old major patients in the population of Toledo. *Method:* A study was realized observacional prospective from January, 2004 to September, 2005 of the patients to be admitted to Geriatric Hospital of Toledo, Spain, by pneumonia acquired in the community. They there was realized a clinical history including 140 variables referred to the anamnesis, physical exploration, radiological, analytical information, treatment and evolution. For the aetiology diagnosis the criteria of Fang were used that includes the following studies: blood and sputum culture as well as serological and urinary antigen of Neumococo. *Results:* 139 patients were included in the study and the global etiologic diagnosis was reached in 49,3% of which in 36,6% of them it was for Streptococo

Pneumoniae followed by the enterobacterias. In the pneumonias by Streptococo Pneumoniae the diagnostic confirmation was achieved in 71% by means of the determination of the urine antigen, 17% in the sputum culture and in 12% in blood cultures. *Conclusions:* The method of diagnosis for the pneumonia by Streptococo Pneumoniae of greater yield was the determination of the urine antigen, followed by the sputum culture. Though more studies are needed, we can recommend the accomplishment of urine antigen in each every elderly patient with pneumonia, since it is a cheap test and it allows in few hours to initiate specific treatment.

351. EFFICACY OF GALANTAMINE ON THE ATTENTION OF THE PATIENTS WITH DEMENTIA OF ALZHEIMER TYPE

D.W. Lee¹, B.K. Yeon², I.K. Jung³, K.-S. Oh⁴ (*Inje University Sanggye Paik Hospital*; *²Hallym University Sacred Heart Hospital*; *³Korea University Guro Hospital*; *⁴Sungkyunkwan University Kangbuk Samsung Hospital*; *dwlee@sanggyepaik.ac.kr*)

Objective: To test the effects of galantamine on global cognitive function and attention in patients with Alzheimer's disease (AD). *Methods:* This was a prospective, open-label, multi-center study. Patients with dementia of Alzheimer type were treated with galantamine 16 mg/day for 12 weeks. Attention was tested in baseline and 12 weeks after treatment using computerized neuropsychological test. *Results:* 60 patients completed the study. Only 7.1% of patients stopped treatment due to the side effect. Attention as measured by the reaction time (RT) of continuous performance test (CPT) showed significant improvement ($p < 0.05$). 58% of patients showed response. *Conclusion:* Treatment with galantamine produced significant improvement in the attention of AD patients. Galantamine is a safe & effective agent for AD patients. This study was supported by the grants from Janssen company.

352. INFLUENCE OF OSTEOPOROSIS ON COGNITIVE FUNCTION OF DEMENTED PATIENTS: RELATION TO DEMENTIA SUBTYPES

E.A. Lee, I.S. Sung, H.W. Gong, E.H. Song (*Seoul Metropolitan Seobuk Hospital, Seoul, South Korea*; *leaneuro@hanmail.net*)

Dementia and osteoporosis are major health issue in elderly people, respectively cognitive and physical aspect. Our aims were to assess the influence of osteoporosis on cognitive function of patients with dementia and relation to dementia subtypes. We assessed 86 patients with Alzheimer's and vascular dementia and mild cognitive impairments. Bone Mineral Density (BMD) and cognition were evaluated using CT and neuropsychological test included Mini-Mental State Examination score, language and memory functions, visuospatial function. We also evaluated activity of daily living (ADL) in dementia subtypes. The MMSE and ADL score was significantly low ($p < 0.05$, respectively) in dementia patients with osteoporosis comparing to without. BMD testing was not significant different among dementia subtypes. We found a strong negative association between BMD score and visuospatial function of demented patients. Our results suggest that osteoporosis has a bad influence on cognitive function activity and daily living of dementia patients. BMD testing and proper treat-

ment of osteoporosis is also important to maintain cognitive function in dementia patients.

353. QT INTERVAL DISTURBANCES IN HOSPITALIZED ELDERLY PATIENTS

A. Leibovitz, E. Lubart, R. Segal, A. Yearovoi (*Shmuel Harofe Hospital*; *larthur@bezeqint.net*)

Background: The QT interval reflects the total duration of ventricular myocardial depolarization and repolarization. Its prolongation is associated with polymorphic ventricular tachycardia, or torsade de pointes, which can be fatal. The aim of this study is to assess the prevalence of prolonged as well as short QT interval in patients admitted to an acute geriatric ward. *Methods:* Files of all patients admitted throughout 6 months to an acute geriatric department were screened for clinical, laboratory, drug use and EKG records examination. Patients with pacemaker and bundle branch block were excluded. *Results:* 422 patients' files were screened: QT prolongation, in all 12 electrocardiographic leads, was detected in 123 patients (29%), and almost half (48%) had prolonged QT in 6 or more of the 12 leads. Associated risk factors leading to QT prolongation were: chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF) and use of digoxin. Short QT (observed in 6-12 leads) found in 4% of patients, was related to schizophrenia and the use digoxin, H-2 blockers and anticholinergics. *Conclusions:* QT prolongation is a common finding in hospitalized elderly patients. Yet, the QT interval is not routinely included among the data recorded on the patients file. We recommend a periodical QT recording in predisposed patients.

354. IMMUNE REACTION TO HELICOBACTER PYLORI IN PATIENTS FROM DIFFERENT AGE GROUPS

T.V. Levashova, V.N. Stolpniceva, E.L. Sumsonova, I.V. Miroshnichenko (*Russian Scientific Research Institute of Gerontology*; *zayka@ihed.ras.ru*)

The aim of the study is to characterize immunity in Helicobacter pylori (Hp) patients with acid-dependent stomach diseases. There were compared immunity indices in patients of two groups with stomach ulcer and duodenum ulcer, superficial and erosive gastritis: 43-59 years of age, 16 persons (gr1) and 60-87 years of age, 20 persons (gr2). Esophagogastroduodenoscopy was performed in all patients. Hp infection was confirmed by an urease test. Stomach and duodenum mucous were used as tissue sampling for the study. Lymphocyte subpopulations were determined by the method of flowing cytometry with application of monoclonal antibodies of Sorbent (Russia) and Beckman Coulter (USA). Hp antibodies were detected by reagents of Vector-Best (Russia) in an immune-enzyme test. Antibodies to Hp were found in 75% of gr1 and in 50% of gr2. Humoral response in both groups correlated with the increase in quantity of three indices: T-lymphocytes with phenotype CD3⁺ CD4⁺, gamma/delta T-cells and CD19⁺B-lymphocytes. Average absolute value of these indices (quantity cells/ml of blood) were correspondingly in gr1 — 1400, 130 and 400, in gr2p — 1400, 120 and 200 with the norm 600-1000 for CD3⁺CD4⁺ T-cells, less than 70 for gamma/delta T-cells and 100-300 for B-lympho-

cytes. Value of indices in patients with immune response was 1,5 — 2 times higher than in patients in the same age group without antibodies to Hp. Quantitative deficit in CD19⁺ B-lymphocytes, CD3⁺CD4[±], and CD3⁺CD8[±]T-lymphocytes was observed more often in patients from gr2. Thus formation of humoral anti-infectious immunity to Hp in patients of different age occurred upon the background of the cell inflammatory immune reaction. Appearance of gamma/delta in peripheral blood is most probably connected with activation of local immune reaction as a result of stomach epithelial cells destruction.

355. EFFECT OF A COMPUTER-BASED COGNITIVE TRAINING DURING STROKE REHABILITATION ON COGNITIVE AND FUNCTIONAL PERFORMANCE

B. Lindemann¹, K. Pfeiffer¹, M. Hautzinger², C. Becker¹, P. Koczy¹ (¹Klinik für Geriatrische Rehabilitation, Robert-Bosch-Krankenhaus, Stuttgart, Germany, ²Psychologisches Institut, Universität Tübingen, Germany; beate.lindemann@rbk.de)

Background: Cognitive dysfunction is common after stroke and seems to worsen rehabilitation outcome. Data on effective cognitive training interventions in the older stroke population are scarce. **Objective:** To determine in a randomised controlled trial the effectiveness of an in-hospital computer-based cognitive training in improving cognitive performance and functional outcome at the end of geriatric rehabilitation and after 3 months compared to standard geriatric rehabilitation care. **Subjects and methods:** 133 older non-depressed and non-demented stroke survivors (mean age: 78 years, days after stroke: 30.7, MMSE 25.8), who were treated at a geriatric rehabilitation ward, received an assessment of neuropsychological and functional variables at baseline, 21 days and 3 months. Main cognitive outcome domains were attention and memory with measures of general processing speed, alertness, selective attention, verbal and nonverbal memory. Functional outcome was measured with the Barthel Index, Motor Assessment Scale and Timed Up and Go. The intervention consisted of a computer-based cognitive training, which was delivered in 9 sessions of 50 minutes with one module on attention and concentration (mandatory) and one of choice. Both groups received multi-professional geriatric rehabilitation care. **Results:** Patients showed impairment in general processing speed (39,8%), alertness (82%), selective attention (79,7%), verbal (40,6%) and nonverbal (25,6%) memory. Performance in general processing speed, alertness and verbal memory improved significantly in both groups after three weeks and over three months. There was no improvement in selective attention and nonverbal memory over time. There was no specific effect of the intervention on cognitive parameters. Measures of functional disability also improved during rehabilitation and remained stable up to three months. In contrast to the control group subjects in the intervention group could further improve significantly in ADL- and motor-performance after rehabilitation. **Conclusion:** A rather non-specific computer-based cognitive training did not show any additional effect on the course of cognitive impairment variables during geriatric rehabilitation and over three months but significantly

influenced ADL- and motor performance at three months. Self-efficacy could serve as a moderating variable.

356. UTILISATION AND PRIVATE COSTS OF ASSISTIVE DEVICES AMONGST OLDER PEOPLE WHO FALL: AN INTERVIEW SURVEY

P.A. Logan¹, T. Sach², J.R.F. Gladman¹, A. Murphy³, K. Robertson⁴, J.R.F. Edmans¹, K. Radford¹, M.F. Walker¹, A. Drummond¹, S. Conroy¹, O. Sahota⁵ (¹University of Nottingham, UK; ²University of Nottingham, School of Community Health Sciences, Nottingham, UK; ³Nottingham City Primary Care Trust, National Health Service, Nottingham, UK; ⁴Nottinghamshire County Teaching Primary Care Trust, Nottingham, UK; ⁵Nottingham University Hospitals, National Health Service Trust, Nottingham, UK; pip.logan@nottingham.ac.uk)

Background: Some assistive devices for example walking aids, toilet aids and bathing equipment are provided to patients through health and social services, but some are purchased by the individual. Little is known about the use, suitability and cost of such devices in people who fall. **Objective:** To describe the number, type and cost assistive devices used by people who have fallen and to calculate the cost of devices purchased privately. **Design:** Face to face interview survey, conducted by a research occupational therapist, of people who have fallen. People were asked about the number, type and cost to the participant of assistive devices used. **Setting:** Community based, including care homes **Subjects:** People over 60 years of age who were seen by the emergency ambulance service as a result of a fall, referred for consideration of a rehabilitation study. **Results:** Between September 2005 and December 2006, 204 people who had fallen, mean age of 81 (SD 7.5) were interviewed at home. 193 (95%) people used assistive devices, (median 4: mean 4.5, SD 2.2). People who had had a stroke had the most pieces of equipment (median 5) and those with dementia the least (median 1). 86 (42%) people had paid for a personal pendant care alarm system, to be fitted and monitored. 110 (54%) people had bought assistive devices, spending a median of 915 Euro (mean 1974 Euro, SD 2418 Euro) each. People with Parkinson's Disease spent the most money (median 2250 Euro) and those with osteoporosis the least (307 Euro). Most user spending was on stair lifts, bath aids, electric raising arm chairs and mobility scooters. **Conclusion:** Almost all of these older people who had fallen used assistive devices. Over half bought some themselves. People may need timely help to identify suitable products and use them correctly.

357. LONG-TERM OUTCOME OF ELDERLY PATIENTS AFTER NON-ELECTIVE ADMISSION TO THE INTENSIVE CARE UNIT (ICU)

A. Lopez Soto, E. Sacanella, S. Aguilo, F. Masanes, P. Castro, M. Navarro, A. Culla, J.M. Nicolas (Clinic Hospital, Barcelona, Spain; alopez@clinic.ub.es)

Purpose of the study: To evaluate functional capability and quality of life (QOL) of elderly patients one year after non-elective admission to the ICU. **Methods:** Patients greater than 65 years old admitted to the ICU were prospectively enrolled to evaluate functional status and QOL 12 mos. after discharge from the ICU. Patients with baseline Barthel index (BI) <60, those admitted after elective procedures or after cardiac arrest and those with a life-expectancy lower

than one year were excluded. The patients enrolled were divided in two cohorts: Group A (age 65–74 yr old) and Group B (age >74 yr old). A comprehensive geriatric assessment was performed; likewise, QOL was evaluated using the EuroQol scale. In addition, ICU scores to analyze severity of acute illness and intensity of treatment were also collected. *Results:* We included 191 out of 325 eligible patients, 91 of them belonging to group A and 100 to group B. No differences between both groups were obtained in: ICU scores, baseline functional status and QOL. A significant decrease in BI after hospitalization compared to baseline BI was observed in both groups ($P<0.001$). Patients from group A had full recovery of their BI six months after hospital discharge, however, patients from group B did not achieve their baseline BI and maintained a moderate dependency up to 12-months after hospital discharge ($P<0.01$). Thus, older patients were significantly more dependent at 12-months of follow-up compared to younger patients (80.0 vs. 93.2; $P=0.02$). Likewise, Lawton index was statistically lower at 12-months after discharge compared to baseline status ($P<0.05$) only in group B. In fact, patients from group B, had lower Lawton index at 6 and 12 mos. compared to patients from group A ($P<0.05$). As expected, perceived QOL significantly decreased at discharge compared to baseline status ($P<0.001$) and continued significantly lower at three months of follow up ($P<0.001$) in both groups of patients. Full recovery of QOL was observed in patients from group A (<75 yr old) six months after discharge whereas patients from group B (>74 yr old) maintained a significantly lower QOL at 6 and 12 mos. after discharge compared to baseline QOL ($P>0.01$, both). *Conclusions:* Functional and perceived QOL recovery of elderly patients after ICU admission is slowly achieved in the following 12 mos. after discharge. However, a significant proportion of patients, specially those greater than 74 yr old, did not reach their baseline status. These results, reinforces the need to perform a comprehensive geriatric assessment, specially in oldest group, after ICU discharge. *Supported by grant FIS: 03-0329.*

358. PHYSICAL ACTIVITY AND RISK OF INCIDENT DEMENTIA IN AN ITALIAN ELDERLY COHORT

A. Lucicesare, P. Forti, N. Pisacane, E. Rietti, F. Montesi, D. Cucinotta, G. Ravaglia (University Hospital S.Orsola, 40138 Bologna, Italy; alucicesare@gmail.com)

Objective: to study the influence of physical activity on risk of development of dementia. *Methods:* The authors examined the relationship between basal level of physical activity and risk of dementia in a prospective cohort of 749 community-residing subjects aged 65 years and older, initially free of dementia and mild cognitive impairment (MCI) using logistic regression analysis adjusted for age, sex, education, apolipoprotein E genotype, baseline Mini Mental State Examination (MMSE) score, body mass index (BMI), serum cholesterol, hyperhomocysteinemia (defined as plasma total homocysteine $>15 \mu\text{mol/L}$), presence of ≥ 1 difficulties in basic (BADL) and instrumental activities of daily living (IADL), and presence of comorbidity. Physical activity was measured using the Paffenbarger Questionnaire, in which trained interviewees asked the subject to report the frequency and duration of their participation per week during the past year in any type

of physical activity. The kilocalories (energy) expended per week in walking, climbing stairs, performing vigorous activity (Metabolic Equivalent >6), performing moderate activity (Metabolic Equivalent 3 to 6), and the sum of the kilocalories expended in all the previous listed activities were calculated. MCI, Dementia, Alzheimer's Disease (AD) and vascular dementia (VaD) were diagnosed according to international criteria. *Results:* Over an average follow-up of 3.9 ± 0.7 years, 86 subjects had developed dementia. There were 54 AD cases, 27 VaD cases, and five cases of dementia from other causes. Dementia cases were generally older, less educated and more frequently women than subjects maintaining a normal cognitive function. Moreover, they had lower baseline MMSE scores and a higher prevalence of hyperhomocysteinemia, BADL and IADL disability and comorbidity. No association was found between physical activity and risk of overall dementia. An increased risk of AD with respect to subjects in the bottom tertile was found among those in the middle tertile of energy expended in moderate physical activity [Odds Ratio (OR), 4.40, 95% Confidence Interval [95% CI], 1.83 to 10.58]. However, the association was not significant for the top tertile and might be a spurious one or simply mirror a low engagement in intellectual leisure activity. By contrast, with respect to subjects in the bottom tertile, a significantly reduced risk of VaD was found for subjects in the middle and top tertile of energy expended in walking (OR 0.36, 95% CI 0.14 to 0.95) and total physical activity (OR 0.35, 95% CI 0.13 to 0.95). *Conclusions:* In this elderly cohort, physical activity was associated with a lower risk of developing VaD, even after taking into account major vascular risk factors and physical disability.

359. EVERYTHING THAT IS GOOD IN THE WORLD, AND EVERYTHING THAT IS BAD: AGEING IN COPACABANA

L. Machado (Interage Consulting in Gerontology; lmachado@attglobal.net)

The district of Copacabana has the highest population density of the City of Rio de Janeiro and the largest proportion of older persons in the population within all of Brazil. The concentration of older people in this district (27.2%) is high even in comparison with cities in Europe which are further ahead in the «ageing revolution», making Copacabana a microcosm of the urban population of the future. The Age-friendly cities project involved 68 older persons, 12 formal and informal caregivers and 22 service providers from public, private and non-governmental organizations. The focus groups were conducted between October 2006 and January 2007. The main results showed that older persons really like living in Copacabana, particularly for the broad array of services offered including public transport, for the leisure opportunities, and because Copacabana is a highly vibrant and busy district. The solidarity of the people who live nearby, especially of the doormen, is emphasized. Even the elders who live by themselves feel they have company here and are not lonely. However, the district has a number of barriers to age-friendliness, including: lack of safety, both from urban violence and from environmental flaws, such as uneven sidewalks with potholes, the disorganized use of sidewalks by street vendors and homeless persons, the height of bus steps, and lack of sufficient accessibility for disabled per-

sons. These findings are being disseminated and, in partnership with older persons, plans are being developed to improve Copacabana's age-friendliness.

360. DEVELOPMENTS IN THE PATHOPHYSIOLOGY OF DELIRIUM

A.M.J. MacLulich (*University of Edinburgh, Edinburgh, Scotland; a.maclulich@ed.ac.uk*)

The pathophysiology of delirium remains poorly understood. Some putative mechanisms are supported by numerous studies, including deficits in neurotransmitter systems, eg. the cholinergic system, cytokine and stress hormone action. However, an integrated account of the mechanisms remains elusive. In this talk the potential role for stress and stress hormones in causing inattention and other features of delirium will be discussed. Other recent developments, for example in neuroimaging and delirium studies, will also be discussed.

361. COMPONENTS OF THE METABOLIC SYNDROME AND INCIDENCE OF DIABETES IN ELDERLY ITALIANS: THE ITALIAN LONGITUDINAL STUDY ON AGING

S. Maggi, M. Noale (*CNR Aging section, Padua, Italy; stefania.maggi@in.cnr.it*)

Introduction. The metabolic syndrome (MetS) represents a combination of multiple metabolic and physiologic risk factors for both type 2 diabetes mellitus and atherosclerotic cardiovascular diseases, firstly described about 40 years ago. Despite an increasing literature about the MetS, the underlying mechanism of the syndrome is not completely understood. Factor analysis has recently emerged as a useful statistical method for identifying patterns underlying the co-occurrence of MetS components. Most studies have been conducted in younger adults, but few data are available on the MetS in the elderly. In particular, to our knowledge, factor analysis has been used to describe the relations among the components of the MetS and hemostatic variables in a sub-sample of 322 participants to the Cardiovascular Health Study, but the criteria used to define the MetS were not the standard criteria. No other studies have been conducted using factor analysis in the elderly. However, when dealing with aged individuals, the cluster of risk factors and the strength of their association is expected to be different compared to younger individuals, because of an obvious survival effect. Therefore, the findings in younger cohorts cannot be generalized to the aged populations. Moreover, it has been proposed that the MetS is a powerful determinant of diabetes, but few studies have evaluated the extent to which the MetS or its components relate to its development. **Methods.** This study aims at assessing sex-specific clustering of metabolic syndrome components, separately for diabetic and non diabetic elderly, and to evaluate how characterized factors predict the development of type 2 diabetes in a cohort of 5,632 individuals age 65–84 at baseline. The aim of this study was to explore the relationship among components of the metabolic syndrome and their role in the development of diabetes. We included 2,295 subjects, aged 65–84 years, participating in the Italian Longitudinal Study on Aging, a population-based study conducted in 1992 and with a follow-up in 1996. Factor analysis was conducted, separately for diabetic and non diabetic men and women, using the principal components method and varimax rotations. Factor scores for the baseline were used as independent

variables in logistic regressions models, to determine risk factors predicting the development of diabetes. **Results.** Factor analysis among non diabetic elderly showed two factors for men (body size/insulin resistance, blood pressure/lipids) and three for women (body size, lipids, blood pressure). Among diabetic subjects, three factors emerged for men (body size/lipids/insulin resistance, body size/blood pressure, glucose), and four for women (body size/lipids/insulin resistance, lipids, body size/glucose/insulin resistance, lipids/blood pressure). For non diabetic men and women, the body size factor (body size/insulin resistance factor for men) was strongly associated with diabetes incidence (OR=2.30, 95% CI 1.41–3.74 and OR=2.06, 95% CI 1.33–3.17, respectively). **Comments.** To the best of our knowledge, this is the first study using factor analysis to describe the clustering of the disorders characteristic of the MetS in a large, population-based sample of older individuals. If factor analysis reveals only one underlying factor, this may demonstrate that one unifying variable accounts for the co-presence of different risk factors. In the case of MetS, in particular, it has been proposed that insulin resistance is the underlying factor. HOMA IR is a good marker of insulin resistance in individuals with and without diabetes and is available in our study. We didn't find, however, either in non diabetic nor in diabetic individuals a single factor, but identified few factors that resulted in the clustering of the basic components of the MetS. Therefore, our data suggest that in the elderly more than one mechanism is present to explain the MetS. Although similar patterns were detected between men and women, remarkable differences were found between diabetic and non diabetic individuals. Among non diabetic men, lipids and blood pressure, body size and insulin resistance were associated, while among women the three factors identified, body size, lipids and blood pressure seemed to be uncorrelated. Among diabetic men and women, blood pressure was associated to body size. In both sexes, insulin resistance clustered with lipids disorders. We identified an index of obesity, in particular BMI and waist circumference in men and only waist circumference in women, that overlapped with lipid/blood pressure/insulin resistance factors in men and with lipids/insulin and glucose factors in women. The overlap reveals underlying commonalities between physiological domains and these data seem to identify obesity as the common factor in the MetS. This study confirms that the MetS doesn't recognize one single underlying factor in an elderly cohort and that the obesity factor is a strong predictor of development of new onset diabetes.

362. GENETICS OF STROKE

N.A. Malygina, N.A. Vodolagina, L.D. Serova (*Russian Research Institute of Gerontology; n.a.malygina@rambler.ru*)

The stroke is the second leading cause of death and the most common cause of disability in Russia. Its incidence is rising as the life span increases and now it occurs in 2/3 of the patients after 60 yrs old. The investigation of family history and twin studies have revealed the importance of genetic risk factors for stroke. But in the half of incidences risk of stroke is unexpected and is not predicted by conventional risk factors. In these cases the genetic predisposition has been widely speculated. About 50 single gene disorders are accompanied by a stroke. In

most of them (Fabry disease, sickle-cell disease, **homocystinuria**, mitochondrial encephalopathy, lactic acidosis, and stroke-like episodes (MELAS), etc) the stroke is only a part of the phenotype. The stroke is the main syndrome in cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL), Moyamoya disease, etc. Low frequency of each disorder type, high risk of a stroke for the mutation carriers, high probability of inheritance are typical for monogenic types of stroke. The genetic counseling and genetic testing play a vital role for patients with genetic disorders and their relatives. From the clinical point of view it is important to differentiate monogenic disorders that cause a stroke from a polygenic multifactorial genetic predisposition to a stroke. The monogenic forms of a stroke, despite of the low prevalence, should always be considered in young patients or in patients of any age without evident vascular risk factors especially when there is a family history. In recent years several genes involved in these condition have been identified. Among them is the NOTCH3 gene, which mutations cause CADASIL, a disorder that leads to lacunar infarcts and vascular dementia. Mutations of the APP, CST3, BRI genes can cause the autosomal dominant amyloid angiopathies, which lead to lacunar infarcts. Certain genes causing cerebrovascular malformations have been identified also. Recently, phosphodiesterase 4D (PDE4D) was found as a potential risk-factor gene. According to their meta-analysis data Casas et al. concluded that common variants in several genes (factor Y Leiden, prothrombin, angiotensin-converting enzyme, methylenetetrahydrofolate reductase) contribute to risk of a stroke. Thus the new information about stroke-related genes greatly increases our knowledge about its aetiological mechanisms and risk factors. It is necessary to use these data in differentiated diagnostics and genetic counseling

363. PREDICTORS OF PRESSURE SORES DEVELOPMENT IN ELDERLY PATIENTS ADMITTED IN A INTERDISCIPLINARY HIP FRACTURE UNIT

E. Maranon, Y. Gracia, L. Alvarez, M. Toledano, M. Alonzo, M. Vidan (*Hospital General Universitario Gregorio Maranon, Madrid, Spain; eugeniomf80@hotmail.com*)

Objectives: To detect predictors of pressure sore (PS) onset in elderly patients admitted in a interdisciplinary hip fracture unit (HFU) in a general hospital in Spain. *Methods:* Prospective study of the elderly admitted in our IHFU from August 2003 to January 2007. The following parameters were studied: sociodemographics, morbidity, geriatric assessment (Katz index, Functional Ambulation Classification, mental and social) at admission, surgical delay, anaesthetic risk (ASA), medical complications, surgical complications and median stay. *Results:* We analyzed 1551 patients admitted consecutively in our IHFU with a median age of 83.64 (± 7.24) days and a median stay of 11.47 (± 7.82) days. 83.4% were females, 21.3% live in a nursing home. They had a Functional Ambulation Classification de Holden (FAC) of 4 or 5 in a 76.1%, a Katz index of 5 or 6 in a 54%, an ASA \geq III in a 28.1%. The median surgical delay was 3.10 (± 2.35) days. Mortality rate was 4.7%. 75.6% had a medical complication in the perioperative period, being delirium the most prevalent (39.2%). 14.3% had surgical complications. 124 of the 1551 analyzed developed PS (8.0%). In the univariate analysis, the variables found related to pressure

sore development were: having a pathological fracture, dementia, the age, the surgical delay, FAC at admission, Katz index at admission, development of medical complication in perioperative period; mainly delirium, and the development of surgical complications. In the multivariate analysis showed to be independently associated with PS development, FAC and Katz index at admission (both of them inversely), the age, surgical delay, delirium development in the perioperative period and having a surgical complication. *Conclusions:* Our IHFU has a low incidence of PS development and a low surgical delay. Factors independently associated with PS development are surgical delay, delirium, surgical complication, age and functional status at admission.

364. ASSESSMENT OF INTELLECTUAL DISABILITY AMONG AGING ADULTS: WAIS-III VS. WISC-R

P. Marante, A. Maseda, A. Bujan, R. Lopez, L. Lodeiro, J.C. Millan-Calenti (*Gerontology Research Group and Adult Day Care Center La Milagrosa. University of A Coruna. Campus Universitario de Oza. 15006 A Coruna, Spain; mmarante@udc.es*)

The age of individuals with intellectual disability (ID) is increasing due to medical advances and an improvement in the quality of life. People with ID have a higher risk for dementia, particularly Alzheimer's disease and because of their lifelong intellectual deficits, it is difficult to determine the earliest signs and characteristics of age-associated decline and dementia. Up to now, there is not an adequate instrument to differentiate intellectual deficits and cognitive impairment, essential to guarantee a healthy aging. For that reason, the intellectual level must be delimited through instruments with suitable reliability and internal consistency when studying patients with ID. The objective of this study was to evaluate the results obtained from the two Wechsler scales, the WISC-R and WAIS-III, in a group (15 aging subjects (8 females and 7 males), mean age 52.3), with ID in order to compare the effectiveness of both procedures in the assessment of their intellectual capacity. The WISC-R and the WAIS-III were administered to all participants with an interval of at least 6 months to avoid the learning of tests. Five common verbal subscales (Information, Arithmetic, Vocabulary, Comprehension, Digit Span) and the four common performance subscales (Picture Arrangement, Picture Completion, Block Design and Object Assembly) were assessed to establish the possible relationship among them and their scores. The other two common scales (Digit Symbol and Similarities) were excluded due to their floor effect. The verbal (VIQ), performance (PIQ) and full-scale (FSIQ) intellectual quotients were obtained. We found significantly higher punctuations in WAIS-III than WISC-R in some common subtests (Vocabulary, Digit Span, Picture Completion and Object Assembly). We also found significantly higher intellectual quotient (IQ) punctuations in WAIS-III. Significant and positive correlations were found in almost all subtests (except for Comprehension) and in three IQs. In conclusion, there is a high correlation among most punctuations of intelligence on Wechsler's scales. So, based on the present findings, a prediction of WISC-R values is possible by knowing the WAIS-III values, especially for lower WISC-R punctuations. Both scales have certain methodological problems to be applied in this population, but the WAIS-III appears to be the best to do so. This scale avoids, above

all, the floor effect observed in the WISC-R. Nevertheless, specific scales must be developed for this community to differentiate the degree of ID and the cognitive impairment to improve their healthy aging.

365. HIGHER PREVALENCE OF OSTEOPOROSIS AMONG FEMALE HOLOCAUST SURVIVORS

E.L. Marcus¹, J. Menczel² (¹Herzog Hospital, Jerusalem, Israel; ²Institute of Osteoporosis, Herzog Hospital, Jerusalem, Israel; elm@zahav.net.il)

Introduction: Holocaust survivors during childhood and adolescence experienced undernutrition, lack of physical exercise and sunlight. The study aimed to establish if Holocaust survivors have higher prevalence of decreased bone mineral density (BMD) than subjects who were not exposed to the Holocaust. **Methods:** We examined 73 female Holocaust survivors aged 60 years or older and a control group of 60 female European-born Jews who immigrated to Israel or to other non-European countries, before 1939. BMD was measured using DXA (dual energy x-ray absorptiometry), in the lumbar spine and both hips. Participants were considered to have osteoporosis if either the lumbar spine or the hip BMD T score was ≤ -2.5 and to have osteopenia if the lumbar spine or hip T score was between -1.0 and -2.5 . **Results:** The mean age of the Holocaust survivors was 71.6 ± 7.1 and the controls 72.2 ± 6.3 ($p=0.58$). There was no statistically significant difference in BMI (26.8 ± 5.4 , and 27.9 ± 3.8) and age of menopause (48.9 ± 3.9 , and 49.9 ± 3.1) between the Holocaust survivors and the controls. The height of the Holocaust survivors was statistically significant shorter than that of the controls (1.56 ± 0.06 vs. 1.56 ± 0.06 , $p=0.04$). Among the Holocaust survivors 54.8% had osteoporosis, 39.7% osteopenia and only 5.5% normal BMD, whereas among the controls 25% had osteoporosis, 55% osteopenia and 20% normal BMD ($p=0.0001$). Among the Holocaust survivors who were <17 years at 1945, 58% had osteoporosis, 34% osteopenia and only 8% normal BMD whereas among the controls who were 17 years or younger at 1945, 20% had osteoporosis, 57.8% osteopenia and 22.2% normal BMD ($p=0.003$). In contrast, the prevalence of decreased bone mass was not statistically significant different among those who were 17 years or older at 1945. Among Holocaust survivors 47.8% had osteoporosis, 52.2% osteopenia and non had normal bone mass and among the controls 40% had osteoporosis, 46.7% osteopenia and 13.3% normal bone mass ($p=0.28$). **Conclusions:** Our research shows that the prevalence of osteoporosis was significantly higher among Holocaust survivors. This finding supports the importance of peak bone mass on bone mass in older adults. Screening BMD should be considered in this vulnerable population.

366. NUTRACEUTICAL STRATEGY IN AGING: TARGETING HEAT SHOCK PROTEIN AND INFLAMMATORY PROFILE VIA IL-6 POLYMORPHISM UNDERSTANDING

F. Marotta¹, K. Koike², A. Lorenzetti¹, Y. Naito³, F. Fayet⁴, Y. Shimizu⁵, P. Marandola¹ (¹G.A.I.A. Age-Management Foundation, Milano, Italy; ²Bioscience lab, ORI, Gifu, Japan; ³Seyukai Med. Inst., Immunity Res. & Clinic, Nagoya, Japan; ⁴School of Molecular & Microbial Biosciences, University of Sydney, Australia; ⁵BioScience Lab, Osato Research Institute, Gifu, Japan; fmarchimed@libero.it)

Antioxidant nutrients have been implicated in pro-

cesses associated with aging and inflammatory damage. Moreover, aging is associated with a decreased expression of HSP at the cellular level. The aim of this study was to assess the inflammatory profile and polymorphism of healthy elderly subjects and the possible influence of a nutraceutical supplementation. Forty sedentary, normofolemic, normolypemic subjects aged 66-74 y old (69 ± 3) were recruited. Subjects were randomly divided in two groups matched as for life-style, alcohol/tobacco use and none was taking any vitamin/mineral supplements or medications. One group was given an ISO9001-certified fermented papaya preparation (FPP, Osato Research Institute, Gifu, Japan) 9g/day by mouth in the morning while the control group shall receive same amount of placebo (flavoured powdered sugar). Treatment were carried out in a cross-over manner with a 3 months supplementation period followed by a 6-week washout period between treatments. A group of 10 healthy young subject (24-33 y/old) was also considered. IL-6 promoter-174 G/C polymorphism genotype was determined by an allele specific PCR Blood samples was withdrawn at entry and on a monthly basis to test: Redox Status (SOD, GSH, GSH-Px and GSSG), IL-6, ultrasensitive (hs-) CRP and serum Hsp70 (inducible form) concentration. Unlike redox balance, hs-CRP and IL-6 were higher in elderly subjects ($p < 0.05$ vs young). The serum concentration of HSP70 showed a trend inverse correlation with markers of inflammation in the whole elderly population but significantly in -174 G/C-negative subjects ($r: 0.62$, $p < 0.05$). Nutraceutical intervention brought about a normalization of inflammatory parameters ($p < 0.05$) with a parallel rise of HSP70 ($p < 0.05$). Our finding suggest that even in apparently healthy elderly, a pro-inflammatory profile plays as a down-regulating factor for inducible HSP70, especially in -174 G/C-negative genotype. A nutraceutical intervention seems to beneficially modulate such phenomenon and has to be taken into account for longer term observation.

367. VALIDATION OF A MINIBATTERY (FMML) TO DISCRIMINATE BETWEEN ALZHEIMER'S DISEASE AND MILD COGNITIVE IMPAIRMENT IN A MEMORY CLINIC

E. Martin Sebastia, B. Lopez Ramos, M.I Garcia Tomas, J.A. Vivancos Fuster, E. Lopez Jimenez, E. Martinez Sanchez, G. Paterna Mellinas, M. Leon Ortiz, J.L. Navarro Lopez (Hospital General Universitario de Albacete, Albacete, Spain; emartins@sescam.jccm.es)

Objective: To validate a new minibattery with following construction: FMML=[Differed Logical Memory Weschler (ML2)/32 FAS semantic (FASS)/17 MMSE/30 Lawton/8]/4 x100 to differentiate between Mild Cognitive Impairment (MCI) and Alzheimer's Disease (AD) in a geriatric memory clinic. **Methods:** Design cohort with 92 MCI (Petersen revised) and 95 AD (NINCDS/ADRDA) stage GDS 4-5. Validation cohort with 41 MCI and 57 AD. Analysis of concurrent validity (Spearman correlation with MMSE and GDS stage) and of constructo (factorial analysis), internal consistency (Cronbach's α), area under ROC for discrimination between AD and MCI with CI 95%, sensitivity and specificity for better point of cut. **Results:** In validation cohort, Spearman correlation coefficient between FMML and GDS was $r=0.792$ ($p < 0.001$). Constructo validity: 2 factors (cognitive and functional) were identified that explain 77% of the variance ($p < 0.001$). Cronbach's $\alpha = 0.6358$. Area under ROC = 0.824 (CI95% 0.771-0.885; $p < 0.001$) in design cohort, with especificity=1 if FMML

≤30% and E=0,9 if FMML ≤43%. In validation cohort, area 0,886 (95% CI 0,821-0,951; p<0,001), with specificity=1 if FMML≤25% and 0,9 if 43%. *Conclusions:* The FMML minibattery appropriately discriminates between AD and MCI in a geriatric memory clinic.

368. APOE POLYMORPHISM AND DISABILITY IN HOSPITALIZED ELDERLY

M.G. Matera¹, M. Franceschi¹, D. Seripa¹, F. Panza², C. Scarcelli¹, A.M. Paziienza¹, G. D Onofrio¹, M. Corritore¹, L.P. D Ambrosio¹, V. Solfrizzi², B. Dallapiccola³, A. Pilotto¹ (¹IRCCS «Casa Sollievo della Sofferenza», San Giovanni Rotondo (FG), Italy; ²Center for Aging Brain, University of Bari, Bari, Italy; ³CSS-Mendel Institute, Rome, Italy; alberto.pilotto@operapadrepio.it)

Introduction: Recent studies indicates that longevity and susceptibility to age-related diseases may be associated with different relative frequencies of common gene polymorphisms, such as apolipoprotein E (APOE). Aging leads to a progressive functional decline of inner organs and is strongly associated with physical disability. This condition seems increase the risk of death. Aim of this study was investigate in hospitalized elderly the role of the APOE polymorphism in the physical disability evaluated throughout the measurement of activities of daily living (ADL). *Methods:* From January 01, 2005 to December 31, 2005 a total of 1180 consecutive elderly Caucasians (all from the area of North Apulia) were admitted at the Geriatric Unit of our Institution and enrolled in the study. On the basis of ADL score≤5, subjects were identified with ADL disability. ADL disability was identified in 482 subjects (192 males and 290 females, mean age 79.86 ±7.14, age range from 60 to 98 years), whereas 698 subjects were normal (380 males and 318 females, mean age 75.33±6.26, age range from 60 to 94 years). All subjects were investigated for the APOE polymorphism⁵. Two-tailed Pearson's Chi-square test was used to compare genotype frequency distribution between groups. Fisher's exact test was used to estimate the Odds Ratio (ORs) in testing for possible association between single genotype and ADL disability. Adjusted estimates was investigated by means of logistic regression analysis using age, sex, comorbidity, cognitive status and body max index as covariates. *Results:* As compared with patients with normal functional activity, patients with ADL disability showed a minor frequency of the e2e3 genotype (10.16% vs 12.75%;) and a major frequency of the e3e4 and e4e4 genotype (17.01% vs 15.47%, and 1.45% vs 0.42%, respectively). These differences were not significant (for e2e3 genotype frequencies, p=0.175, OR=0.774, 95% CI 0.535 — 1.121; for e3e4 genotype frequencies, p=0.480, OR=1.120, 95% CI 0.818 — 1.533; and for e4e4, p=0.076, OR=3.413, 95% CI 0.878 — 13.262). The regression logistic analysis confirmed lack of association between Apoe polymorphism and ADL disability. *Conclusions:* Although the Apoe seems involved in several age-related diseases and longevity, in this study we found no association between this gene and ADL disability in elderly patients.

369. DEPRESSION AMONG OLDER PEOPLE WITH COGNITIVE IMPAIRMENT: PREVALENCE AND DETECTION

M. McCabe¹, D. Mellor¹, T. Davison¹, K. George² (¹Deakin University, School of Psychology, Victoria, Australia; ²Peter James Center, Victoria, Australia; marita.

mccabe@deakin.edu.au)

Past research has demonstrated that there is a high level of depression among older people, particularly for those with cognitive impairment and those in residential care. The current study was designed to determine the prevalence of depression among older people in hostels with cognitive impairment using a structured diagnostic interview. A further aim was to determine an appropriate screening instrument to detect depression within this population. It was also designed to evaluate the extent to which depression among these older people had previously been detected. Five commonly used depression scales were administered and compared to the results of the diagnostic interview. The results demonstrated that 38.9 percent of older people were diagnosed with depression, but that only 50 percent of these people had been previously diagnosed with this disorder. All scales showed some level of validity to detect depression. *Conclusions:* The implications of these findings for our understanding of depression among older people with cognitive impairment, are discussed.

370. CLINICAL SUBTYPES OF DELIRIUM

D.J. Meagher (University of Limerick; meaghermob@eircom.net)

Delirium is an understudied syndrome, including the usefulness of clinical subtypes. Motoric subtyping studies suggest that patients so defined have significant differences in relation to detection, underlying pathophysiology, treatment, and outcome but studies suffer from a lack of consistency in methodologies, in particular around the definition of subtypes applied. We sought to validate a new approach to motor subtyping in delirium based on data from a controlled comparison of items from three existing psychomotor schema combined into the Delirium Motoric Checklist (DMC). Principal components analysis of the DMC identified two factors that correlated significantly with independently assessed motor agitation and retardation. Symptoms loading at >0.65 were extracted to form subtype criteria composed of 4 hyperactive items and 7 hypoactive items which when applied to the delirious population suggested a cutoff of 2 items for subtypes. This new scale is derived from existing approaches but more concise, focused on motor disturbances, and validated against nondelirious controls and independently rated motor disturbance.

371. PREDICTORS OF CARDIOVASCULAR SYSTEM PREMATURE AGING OF ADVANCED AGE PATIENTS WITH CARDIOVASCULAR PATHOLOGY

N.V. Medvedev, N.K. Gorshunova (Kursk State Medical University, Dept. of general practice, Kursk, Russia; gorsh@kursknet.ru)

Age-related changes in cardiovascular system develop non-uniformly, depending on accompanying diseases and lesions of circulation organs. The method of biological age (BA) definition allows estimating disturbances of whole organism or its systems' functioning. Concerning patients of advanced age, estimation of cardiovascular system age-related changes adequately helps to solve this specified problem. The rate of ageing is determined as the difference between BA and proper BA (PBA) in 33 patients (middle age 68,5±2,7 yr) suffering from ischemic heart disease, angina of effort II FC in combination with arterial hypertension I-II degrees, complicated by heart failure by

Belozeroval L.M.'s technique (2006). The group of comparison included 33 healthy persons of similar age. In the formula of BA definition the following parameters were considered: the diameter of aorta' ostium, the disclosing of aortal valve, the size of left atrium (LA), the final systolic (FSSLV) and diastolic (FDSLVL) size and the volume of left ventricle, the minute (MVC) and the shock volume (SV) of circulation, the fractions of left ventricle' expulsion (FE) and the shortening (FS), the thickness of interventricular septum, of the back wall of left ventricle, of right ventricle, and the heart rate. The results of echocardiographic parameters research were exposed to the systemic multifactorial analysis (to B.A.Uglov & co-authors, 1994) for the weight importance definition of investigated parameters. BA of advanced age patients with cardiovascular pathology (69,1±2,2 yr) authentically exceeded the similar parameter of the comparison group persons (56,8±1,7 yr, p<0,001) at rather similar value PBA. The majority of the surveyed patients, considering the difference between BA and PBA, had the accelerated rate of cardiovascular system ageing, confirming the negative role of the diseases concerning mechanisms of antiageing. All persons of the comparison group grew old physiologically. The factorial analysis has revealed, that the greatest prognostic importance concerning the cardiovascular system accelerated ageing, by weight coefficients (WC), have the parameters of the left ventricle shortening fraction (107), SV(33), the diameter of the aorta ostium (33), the size of LA(25), FDSLVL(28), FSVLV(20), MVC(23,4). Based on the received results, it is possible to conclude, that for forecasting of the cardiovascular system's premature age-related changes, and the advance of heart failure it is necessary to consider first of all echocardiographic parameters with high coefficients of significance.

372. IMPROVED QUALITY OF CARE AFTER THE IMPLEMENTATION OF COMPREHENSIVE GERIATRIC ASSESSMENT BASED ON THE RAI-MDS INSTRUMENT IN AN ITALIAN NURSING HOME BETWEEN 1999-2005

G. Menculini¹, M. Fatichenti¹, N. Popa¹, S. Simoncini¹, G.A. Sorbino¹, U. Senin², A. Cherubini² (¹Residenza Creusa Brizi Bittoni; ²Institute of gerontology and Geriatrics, University of Perugia; gmenculini@tiscali.it)

Aim. To present the benefits of introducing Comprehensive Geriatric Assessment based on the Resident Assessment Instrument- Minimum Data Set (RAI-MDS) instrument in an Italian nursing home (Residenza Protetta «Creusa Brizi Bittoni» di Città della Pieve — Perugia) during a 6 year period. *Methods.* The use of RAI-MDS was implemented in this nursing home since 1999, when a geriatrician was appointed as the medical Director of the facility. In the first year and regularly thereafter he organized teaching courses for the personnel on comprehensive geriatric assessment and the use of RAI-MDS. The multidisciplinary team evaluates every resident using this instrument on admission and every 6 months afterwards, unless a major change in the clinical condition occurs that requires an additional evaluation. The data obtained through the RAI-MDS are discussed during regular team meeting and used to produce individualized health care plans, that are periodically revised. *Results.* The nursing home has a total of 50 beds for older people with disability. Although during these 6 years the nursing home resident population became sicker and more disabled, the use of RAI-MDS allowed the improvement of several measures

of the quality of care, such as hospitalization rate, falls and fractures incidence, pressure sore prevalence, use of physical restraints and of psychotropic drugs. The main results are reported in the table.

Main results of the implementation of the RAI-MDS instrument in 1999–2005

	1999	2005
Death rate	26%	20%
Hospitalization rate (based on the local population)	0,09% [∞]	0,03% [∞]
Falls	162%	32%
Hip fractures	4%	0%
Pressare sores	24%	12%
Physical restraints	35,3%	22%
Use of psychotropic drugs	90%	52%

Discussion. The use of comprehensive geriatric assessment based on the RAI-MDS instrument determined a significant improvement of the quality of care, as shown by the reduction in hospitalization, fall and fracture risk, pressure sores as well as the lower utilization of physical restraints and psychotropic drugs. This is the results of a joined effort made by the management and the health care personnel to improve the care provided to older residents using state of the art geriatric methodology.

373. STRUCTURED WOUND TREATMENT

A.-K. Meyer (AK Wandsbek, Hamburg, Germany; a-k.meyer@alice-dsl.de)

An aim of geriatrics is to provide adequate treatment for a great number of patients suffering from chronic wounds. Here, the focus is especially on decubital ulcers and on chronic wounds resulting from disturbances of blood circulation. Industry is offering a great variety of bandaging materials corresponding to the many different forms of wounds. In order to be able to perform a qualified therapy, which answers to the specific requirements at a given stage, we have actively participated in the compilation of the Wundfibel, [a manual concerning wound treatment] published by the Landesbetrieb Krankenhäuser Hamburg. The Wundfibel deals with the major reasons for chronic wounds, provides jointly defined standards for stage-differentiated wound treatment and lists the materials that are to be applied in order to meet these standards. Apart from that, the manual also comprises recommendations concerning aspects of pain therapy and diet. Moreover, accurate keeping of wound records is mandatory in all departments of the Landesbetrieb Krankenhäuser Hamburg. In these records localization, size and condition of wounds as well as their treatments are documented on a regular basis.

374. DIFFERENCES IN LIPID STATUS BETWEEN FREE-LIVING AND INSTITUTIONALIZED GREEK ELDERLY WOMEN

K. Michael-Kleftouri¹, D. Economidis², C. Skarmoutsou¹, G. Kleftouris² (¹Alexandriou TEI of Thessaloniki, ²Aristotelion University of Thessaloniki, Thessaloniki, Greece; kmichael@nutr.teithe.gr)

The purpose of the study is to describe differences in blood lipid profiles, body composition and associated dietary intakes, between a group of institutionalized and a group of free-living Greek elderly women. The study

sample included 102 women, recruited from the outpatients' clinic of the Geriatric Department of a University Hospital in Northern Greece and 40 women living in a home for the elderly. All women were above 60 years old. The project is co-funded by the European Social Fund & National Resources — EPEAEK II — ARCHIMIDIS. The methods used included a general history questionnaire and a 7-day diet history questionnaire, completed by a dietitian during an interview, and estimations of fasting blood levels of total Cholesterol (TC), High Density Lipoprotein Cholesterol (HDL) and triglycerides. Anthropometric measurements included weight, height, thickness of skin folds and waist and hip circumferences. The two groups studied had similar educational backgrounds, disease profiles, smoking habits and similar dietary habits. Mean age of institutionalized elderly was higher than that of free-living elderly. Physical activity was also different between the two groups, with institutionalized elderly having a lower physical activity level (PAL) than that of free-living elderly. Institutionalized elderly also had lower body weights, similar body mass index (BMI), higher subcutaneous body fat and higher abdominal fat. Total cholesterol (TC) was similar in both groups studied, but High Density Lipoprotein-Cholesterol (HDL) and Low Density Lipoprotein-Cholesterol (LDL) were lower in the institutionalized group. The proportion of women with abnormal values of TC and LDL was higher in free-living women but the proportion of women with abnormal HDL was higher among institutionalized women. Mean energy intake was lower in free-living elderly while mean fat energy was lower in institutionalized elderly. Dietary saturated fat (SFA) and polyunsaturated fat (PUFA) were similar in both groups but monounsaturated fat (MUFA) and the ratio of MUFA/SFA were lower in the diet of institutionalized elderly. Mean intakes of ω -3 and trans-fatty acids and cholesterol were similar in both groups. Results must be interpreted with caution, considering the higher age of institutionalized elderly studied. The lower physical activity and the lower dietary intake of MUFA of institutionalized elderly might be related to their lower blood HDL level. An increase in the physical activity of the institutionalized elderly and in the MUFA content of their diet will improve their nutritional status and quality of life.

375. VACCINES: PRESENT AND FUTURE APPLICATIONS IN OLDER AGE

J.-P. Michel (*Geneva Medical School and University Hospitals; jpm-michel@bluewin.ch*)

Many general vaccine recommendations essentially intended for use in childhood and adulthood exist. But, at our knowledge, no specific recommendation exists for the healthy young-old persons, old community dwelling persons and the institutionalized oldest old persons. Moreover, the vaccine coverage in all European countries is very low in adults and especially in old adults. One of the explanations of this low vaccine coverage is the existence of various National vaccine policies and reimbursements. Vaccines are part of preventive medicine to improve healthy ageing at a crucial period of time with: (1) The spectrum of a H5N1 pandemic, (2) The development of new vaccines against threatening diseases such the Herpes Zoster vaccine which deals with quality of life issues. However clinical vaccine recommendations for the elders

have not to forget that: (a) Anti-vaccine movement will fight against any clinical recommendations; (b) Negative vaccine attitudes of the elders has to be highly considered; (c) Chronological age limits for immunization has to be raised; (d) Suboptimal vaccine responses to vaccine is well known the frail, malnourished and co-morbid elders; (e) If herd phenomena is important for institutionalized seniors, the vaccine coverage of the health care professionals has not to be neglected. An «active advocacy of immunization in ageing and aged persons» will be presented based on the existing scientific and clinical evidences. Clear, flexible but also easy use clinical vaccine recommendations will be proposed stressing on quality of life improvement and without neglecting ethical issues.

376. LAPAROSCOPIC SURGERY OF COLORECTAL CANCER IN OLDER AND VERY OLD PATIENTS

A.E. Miller, A.G. Ryllo (*St. Petersburg Municipal Clinical Oncological Center; almiller1@yandex.ru*)

Colorectal cancer is presently gaining the 2nd, if not the 1st place in occurrence among all tumor diseases. Overwhelming majority of patients are older and very old people. One of the most serious problems is the need to perform rather radical surgery in older patients. Less traumatic laparoscopy technologies are presently introduced into the clinical practice. However, the possibility of using endovideosurgery in case of colorectal cancer in older and elderly patients have not yet been studied. St. Petersburg Municipal Clinical Oncological Center has accumulated the initial experience of laparoscopic surgery in large intestine cancer in older patients. In 2005–2007 such surgeries were performed in 20 patients aged from 60 to 79 years. There were 7 men and 13 women. Stage I cancer was diagnosed in 3 patients, stage II — in 7 patients, stage III — in 6, and stage IV — in 4 patients. The majority of patients reported secondary pathology in addition to the main one — cerebral atherosclerosis, ischemic heart disease, hypertension disease. The intensity of laparoscopic interventions was standard and depended on the localization of cancer in the large intestine. It did not differ from analogous open surgeries. Among performed surgeries were 11 right-side hemicolectomies, 3 left-side hemicolectomies, 2 anterior proctectomies, 4 abdominal-perineal extirpations. The duration of laparoscopic surgeries was 1.5-2 times longer than of open ones and took from 3.5 to 5.5 hours. However, we registered no complications, related to the duration of the surgery and anesthesia, as well as to the influence of strained carboxypneumoperitoneum. But the advantages of less invasive surgery were evident already on the first day of post-operational period. Pain syndrome was not pronounced. It enabled to reduce the need for narcotic analgesics injections. The patients were active on the 1st-2nd day. By the same time intestinal peristalsis was restored. By the 5th-9th day the patients were discharged from the hospital. Short rehabilitation period enabled to pass over to other methods of complex therapy of colorectal cancer. In our opinion, the advantages of laparoscopic surgery of the large intestine are especially noticeable in older patients. There is a need for further study in order to clarify the indications and contraindications for such surgery.

377. PROGNOSIS OF OSTEOPENIA IN ELDERLY PATIENTS WITH OSTEOARTHRITIS

N.V. Mitrofanova (*Kemerovo State Medical Academy, Russia; mitnatalia@bk.ru*)

Objectives: to develop a prognostic pattern for probability of the reduction in the bone mineral density (BMD) in elderly patients with OA. **Methods:** The outcomes of the study with 155 patients with OA over 66 years (31 men and 124 women) have been reviewed. The estimation of BMD in the distal part of the forearm was conducted with the X-ray absorptiometry method (densitometer DTX-200, «Osteometer», Denmark). BMD changes were assessed by T-criteria in accordance with the WHO recommendations. ACR criteria (1990) were used to diagnose OA. SF-36 questionnaires and NHP were used to assess the quality of life (QL). Step-by-step discrimination analysis was applied to develop a prognostic pattern for probability of the reduction in the BMD. T-criterion value was assumed as a grouping variable; two variants of the bone tissue status have been specified: normal BMD and reduced BMD. Evaluating the values of normal and reduced was performed to define one of the two variants of bone tissue in the case under examination. **Results:** The association of the BMD reduction with the lower roentgenological stage of OA and body weight, the increase in the number of the joints involved, patients' age and length of menopause period, early menopause and lack of regular physical exercises has been found. Total of discriminator coefficients has been found and equations of discriminator for patients with normal BMD and with reduced BMD values have been estimated as the result of step-by-step discriminant analysis. The prognosis pattern developed on the basis of the analysis of the history, anthropometric, roentgenological indexes, and QL questionnaires made it possible to estimate accurate within 90.3% probability of BMD reduction in patients with OA. **Conclusion:** Both clinical features of the disease and patients' anthropometric indexes affect the reduction of BMD in elderly patients with OA. Expediency of questionnaire application has been shown not only for the assessment of QL but also for the prognosis of osteopenia.

378. QUALITY OF LIFE IN ELDERLY FEMALE PATIENTS WITH OSTEOARTHRITIS AGAINST THE BACKGROUND OF BONE MINERAL DENSITY REDUCTION

N.V. Mitrofanova (*Kemerovo State Medical Academy, Russia; mitnatalia@bk.ru*)

Osteoarthritis (OA) and osteoporosis as two widely spread diseases in elderly and old women that cause patients' disability and the decrease of quality of life (QL). **Objectives:** To analyse both the association between the bone mineral density (BMD) in the distal part of the forearm and clinical form as well as X-rays stage of OA in women over 66; 2) to evaluate the dependence of QL in female individuals with OA on BMD reduction. **Methods:** The rate of BMD of distal part of forearm was measured by the method of X-ray absorptiometry (densitometer DTX-200, «Osteometer», Denmark). The BMD changes were estimated by T-criteria. SF-36 questionnaire was used for QL estimation. **Results:** The results of the study with 124 women over 66 years with OA had been analyzed. T-criterion in 35 patients with OA 1st stage of knee joint had been -3.13 ± 0.58 , with the 3rd — 0.74 ± 0.52 . T-criterion in patients with 1st stage of oligoosteoarthritis of the knee and hip joints (29 women) had been found on the level -2.93 ± 0.33 , with the 3rd — -0.54 ± 0.22 . T-criterion

in womens with polyosteoarthritis (60 patients) with 1st stage had been -3.12 ± 0.35 , with the 3rd — -1.65 ± 0.36 . According to T-criterion all patients had been divided into basic group representing 94 patients with reduced BMD and control one with 30 patients with normal BMD. The estimation of QL was carried out. The reduction of BMD is associated with the reduction of QL in every form of OA, especially in wovens with polyosteoarthritis. Mental Health, Role-Emotional, and Role-Physical scales had the lowest significance. **Conclusion:** The lowest X-ray stage is relevant to highest BMD reduction and is irrelevant of OA clinical variants, whereas the increasing of stage is followed by the increase of T-criterion. The reduction of BMD was the biggest in womens with polyosteoarthritis. The reduction of BMD is associated with the reduction of QL in every form of OA. Mental Health, Role-Emotional, and Role-Physical scales had the lowest significance.

379. THE MULTIDISCIPLINARY APPROACH OF ZINCAGE PROJECT: A LINK BETWEEN GENETICS AND PSYCHO-SOCIAL DIMENSIONS

E. Mocchegiani¹, M. Malavolta¹, C. Giuli¹, R. Papa¹, G. Dedoussis², G. Herbein³, D. Monti⁴, L. Rink⁵, J. Jajte⁶, F. Marcellini¹ (¹*Italian National Institute on Ageing (INRCA), Ancona, Italy*, ²*Harokopio University of Athens, Athens, Greece*, ³*Franch-Comte University, Besancon, France*, ⁴*University of Florence, Italy*, ⁵*RWTH, Institute of Immunology, Aachen, Germany*, ⁶*Medical University of Lodz, Poland; e.mocchegiani@inrca.it*)

Simultaneous evaluation of the complex interactions between dietary intake, zinc status and zinc-related genes is required in order to appreciate their true involvement in determining differences in longevity and the prevalence of age-related diseases. Other than intestinal malabsorption, reduced intake of zinc in the diet, inadequate mastication and poor socio-economic condition, genetic factors may also be related to zinc deficiency because a large amount of proteins are involved in regulating zinc homeostasis. In order to investigate the possible association between single nucleotide polymorphisms of genes involved in metal homeostasis, inflammation and stress response with zinc status, dietary habits and psychosocial aspects in aging, the relationship among some (SNPs) involved in inflammation (TNF-alpha -308 G/A, IL-6 -174 G/C), stress response (HSP-70 +1267 A/G) and zinc homeostasis (MT2A -209 A/G, MT1A -197 G/C, MT1A +647 A/C, MT1A +1245 A/G) was studied in old subjects from five European countries. A zinc supplementation trial was also conducted in a selected group of subjects with low plasma zinc and specific polymorphisms associated with impaired zinc status. Differences in cognitive status and immune efficiency at baseline and after the zinc supplementation trial were studied with particular focus on the effect of some polymorphisms. The results suggest that the genetic background may indeed affect differently zinc homeostasis in aging and that the genetic background, in addition to dietary intake, has been taken into account when considering to intervene through zinc supplementation (*ZINCAGE project funded by EC: Contract n. Food-CT-2003-506850*).

380. RISK FACTOR EVOLUTION FOR FALLING IN ELDERLY

C. Molina¹, E. Fernandez¹, J.J. Montero², N. Montella³, T. Jimenez¹, M. Sastre¹, O. Migilyova¹ (¹*Unitat Docent BNiM; ²ABS Mataro 7; ³Institut Catala de la Salut; 31297jma@comb.es*)

Objective. To know risk factors for falling in elderly with two years evolution. *Methods.* Prospective cohort study between 2003-2005 period in primary health care area. Subjects: ≥ 65 year old women attended for their family physician for any reason between June — December 2003 period. Exclusions: home care attention patients or those living in institutions. Social-demographic data and risk factors for falling (previous fallings, walking and balance disorders with Tinetti Test and Timed Up&Go test, number of drugs and psychotropic prescription) during 2003. After two years, fallings, balance tests and drugs prescriptions were analyzed again. Data analysis was done according to parallel data test. *Results:* 114 women, 84 have already finished the study (73.7%). Data lost reasons: death, home care attention patients and those living in institutions. Average age: 74.4 (SD \pm 6). 80.7% had any risk factor during 2003, in 2005 the percentage has increased up to 88%. Number of drugs were increased from 3.7 up to 5.4 ($p < 0.001$). Kind of treatments were not modified. Balance: 78% got worst results in Tinetti test, also in Timed Up&Go test, 8.6 seconds (SD \pm 2.8) up to 10.6 seconds (SD \pm 4.9) ($p < 0.0001$). *Conclusions:* In 2 years elderly patients made worst risk factors for falling. The age evolution not have a brake. Primary health care play an important role to reduce psychotropic drugs and consequently reduce falls incidence.

381. EVOLUTION THE RISK FACTORS TO FALL IN ELDERLY IN PRIMARY HEALTH CARE

C. Molina¹, E. Fernandez¹, J.J. Montero¹, N. Montella², C. Perez¹, R. Canteria¹, S. Cid¹ (¹ABS Mataro 7. ICS; ²SAP Mataro-Maresme. ICS; 31297jma@comb.es)

Objective. To know risk factors for falling in elderly with two years evolution. *Methods.* Prospective cohort study between 2003-2005 period in primary health care area. Subjects: ≥ 65 year old women attended for their family physician for any reason between June — December 2003 period. Exclusions: home care attention patients or those living in institutions. Social-demographic data and risk factors for falling (previous fallings, walking and balance disorders with Tinetti Test and Timed Up&Go test, number of drugs and psychotropic prescription) during 2003. After two years, fallings, balance tests and drugs prescriptions were analyzed again. Data analysis was done according to parallel data test. *Results:* 114 women, 84 have already finished the study (73.7%). Data lost reasons: death, home care attention patients and those living in institutions. Average age: 74.4 (SD \pm 6). 80.7% had any risk factor during 2003, in 2005 the percentage has increased up to 88%. Number of drugs were increased from 3.7 up to 5.4 ($p < 0.001$). Kind of treatments were not modified. Balance: 78% got worst results in Tinetti test, also in Timed Up&Go test, 8.6 seconds (SD \pm 2.8) up to 10.6 seconds (SD \pm 4.9) ($p < 0.0001$). *Conclusions:* In 2 years elderly patients made worst risk factors for falling. The age evolution not have a brake. Primary health care play an important role to reduce psychotropic drugs and consequently reduce falls incidence.

382. RISK FACTORS OF FALLS. COMMUNITY STUDY

J.J. Montero¹, M.M. Jimenez², M. Sastre², T. Jimenez³, Y. Ramirez³, I. Roca³, C. Molina³, O. Migilyova³ (¹ABS Mataro 7; ²ABS Premia de Mar; ³Unitat Docent BNiM; 31297jma@comb.es)

Objective. To know how risk factors to fall are present at the elderly and the relationship with previous falls. *Study.* Descriptive transversal multicenter study. *Methods.* Patients over 65 attended in primary health care services with walking capacity. All those living in institutions are excluded. Four centers are taking part in the study. Usual risk factors for fallings are analyzed in the scientific publications: previous fallings, drugs, visual disorders, auditive disorders, architectonic barriers and balance test (Tinetti and others tests). *Results.* We recruited 619 patients. Average age is 74.7 years old. A 58% are women. 15.8% walking-stick users. 56% architectonic barriers (stairs, bath). Previous falls: 28.9%. (female/male 2:1), 14.2% living alone (female/male 5:1). The 48.5% are taking 4 or more drugs (drugs average: 3.7/day). 57.8% are anti-hypertensives, 26% benzodiazepines, 11.8% antidepressants and 2.4% neuroleptics. Only a 8.7% take no drugs. Present vision disorders a 47% and a 33.1% auditive disorders. Tinetti 28/28: 52.9%. Significant relationships are appreciated according to age, sex, walking-stick users, >4 drugs users, antidepressants users, visual disorders and Tinetti test with previous fallings. No relationship appreciated with benzodiazepines, auditive disorders, living alone and architectonic barriers/bath. *Conclusions.* Risk factors for falling prevalence is high significant. Almost one third of the elderly patients suffer falls every year, only from primary care health attention can this be avoided. We should improve the number of drugs (to reduce) and the vision quality of our elderly.

383. PREDICTION OF MORTALITY USING CHARLSON'S INDEX COMORBIDITY IN OLDER PATIENTS OF PRIMARY HEALTH CARE

J.J. Montero¹, M. Jimenez², R. Canteria¹, C. Molina¹, J. Juanola¹, N. Montella³, O. Migilyov¹ (¹ABS Mataro 7. ICS; ²ABS Mataro 1. ICS; ³SAP Mataro-Maresme. ICS; 31297jma@comb.es)

Introduction. Comorbidity Charlson Index (CI) -1987- as an easy and quick method for an initial assessment of hospital patients. It has also been frequently used in different medical and surgical specialties areas. It has not been used in primary care attention. *Objective.* To find out the possible relationship between CI and mortality in primary care geriatric population. *Material and methods.* A prospective cohorts in a multicenter study. Patients >65 years old, visited for any reason in 4 primary centers in Maresme (Catalonia — Spain) during 2003–2004. We registered demographic variables and the 19 diseases in the index. To know vital condition, we follow up one year. Telephonic approach every 4 months. *Results.* A total of 610 patients (58% female) median age 75 years old (SD \pm 6.7), with CI 0.9 (0.7 points). After 1 year 14 patients (35% female) had already died (annual mortality: 2.3%). The annual mortality rate according to CI not adjusted by age, shows: 0 points=1–2%, 1–2 points=2.3%, 3–4 points=12.2%, >5 points=28%. Median CI: dead=2.79, live=0.86 ($p=0.01$). *Conclusions.* It exists correlation between CI and mortality in the geriatric ambulatory population. Ours patients are older and healthier than hospitalary patients. It's necessary more studies in family practice to obtain adequate prognosis and treatment in elderly patients.

384. RISK FACTORS OF FALLS IN ELDERLY. COMMUNITY STUDY

J.J. Montero¹, M. Jimenez¹, R. Canteria¹, E. Zurilla¹,

M. Rodriguez², M. Trilla¹, J. Domenech¹ (¹ABS Mataro 7. ICS; ²ABS Canet. ICS; 31297jma@comb.es)

Objective. To know how risk factors to fall are present at the elderly and the relationship with previous falls. **Study.** Descriptive transversal multicenter study. **Methods.** Patients over 65 attended in primary health care services with walking capacity. All those living in institutions are excluded. Four centers are taking part in the study. Usual risk factors for fallings are analyzed in the scientific publications: previous fallings, drugs, visual disorders, auditive disorders, architectonic barriers and balance test (Tinetti and others tests). **Results.** We recruited 619 patients. Average age is 74.7 years old. A 58% are women. 15.8% walking-stick users. 56% architectonic barriers (stairs, bath). Previous falls: 28.9%. (female/male 2:1), 14.2% living alone (female/male 5:1). The 48.5% are taking 4 or more drugs (drugs average: 3.7/day). 57.8% are anti-hypertensives, 26% benzodiazepines, 11.8% antidepressants and 2.4% neuroleptics. Only a 8.7% take no drugs. Present vision disorders a 47% and a 33.1% auditive disorders. Tinetti 28/28: 52.9%. Significant relationships are appreciated according to age, sex, walking-stick users, >4 drugs users, antidepressants users, visual disorders and Tinetti test with previous fallings. No relationship appreciated with benzodiazepines, auditive disorders, living alone and architectonic barriers/bath. **Conclusions.** Risk factors for falling prevalence is high significant. Almost one third of the elderly patients suffer falls every year, only from primary care health attention can this be avoided. We should improve the number of drugs (to reduce) and the vision quality of our elderly.

385. PREVENTING FALLS IN FAMILY PRACTICE. A MULTICENTRAL STUDY IN ELDERLY POPULATION

J.J. Montero¹, M. Jimenez², E. Zurilla³, M. Rodriguez⁴, R. Canteria¹, O. Migylioiva¹, J. Juanola¹ (¹ABS Mataro 7; ²ABS Mataro 1. ICS; ³ABS Masnou. ICS; ⁴ABS Canet. ICS; 31297jma@comb.es)

Objective: To know the sensibility of the tests 'Timed up and go'(TuaG) and 'Unipodal Station or One Leg Stand'(Us) to predict falls in people community over 65 years old during one year. The Tinetti balance* (TB) is the reference. **Methods:** A prospective cohort multicentric study carried out in the region of Maresme (Catalonia, Spain). Semirural population. Recruitmen in Primary Health Care. The three test and sociodemographic data and risk factors to fall were collected. Monitoring during one year about the incidence of falls. Four-monthly telephonic follow-up. Exclusion: home visit or institutionalised patients. Beginning of the research: 2003-2004. End of research: February 2006. **Results:** A total of 555 patients. Average age:74.7 (SD±6; 65-94). A 57% was women. Previous falls:28%. Walking stick use:14%. Living alone:15%. Architectural barriers: 58%. Charlson's comorbidity index:50%=0. A 47% consumed four or more drugs. A 70% can done the Us with open eyes. Only 15% with closed eyes. A 66% took a TuaG under 10 seconds and 4% took more than 20 seconds. A 54% have 28 points (maximum) for the TB. Total falls 223 (41,17 falls person/year). The sensitivity of the TuaG test and the TB are similar: 57% and 60% respectively. For the Us (with open eyes/ closed eyes) is a 43% and 88,7% respectively. **Conclusion:** We advise the Unipodal Test or One Leg-Stand (five seconds

minimum with closed eyes) for screening falls in Primary Health Care. The time at the general family practice is very important. The Tinetti Balance and Timed up and Go test shows a poor sensitivity in healthy elderly population. * Rubenstein modified 1992.

386. THE TIMED UP & GO TEST FOR ELDERLY MEDITERRANEAN POPULATION

J.J. Montero¹, J. Juanola¹, M. Trilla¹, M.M. Jimenez², C. Molina³, I. Roca³, N. Montella⁴ (¹ABS Mataro 7; ²ABS Premia de Mar; ³Unitat Docent BNiM; ⁴Institut Catala de la Salut; 31297jma@comb.es)

Introduction: The timed up & go test is easy and quick, for that reason is strongly recommendable in primary care attention. At the same time, there are few studies over our population. **Objective:** To know de relationship between timed up & go Test and falling risk in mediterranean elderly population. **Methods:** Multicenter study for prospective cohorts made in Catalonia. Semirural population. Patients over 65 attended for their family physician for any reason during period 2003–2004. All patients living in institutions were excluded. 12 months checking were made over incidence fallings with telephonic controls every 4 months. Data were analized through t-student. **Results:** From a total number of 588 patients (58% female), with an average age of 74.5 (SD±6.7), 54 (9.2%) did not finish the study (14 deaths, 5 institutionalized and 35 lost). Falls: 27.7% (148 patients), 73% were women. Timed up & go test were done in 9.6 seconds in average (SD±5.49), being in men 8.2 seconds (SD±3.46) and 10.47 in women (SD±6.37). Women that fall have a time of 12.4 seconds (SD±8.7), against 9.6 seconds (SD±4.4) for those that not fall (p<0.001). Men shown not significant differences, (8 s vs 9 s). If we stratify in: <10 seconds, from 10 to 20 seconds and >20 seconds, still remain significant differences in women but not in men. **Conclusions:** Timed up and go test is an usefull test in order to identify fragile elderly women with falling risk. However, in men mediterranean population, this differentiation is not shown and must be considered due to anglo-saxon studies did not shown sex differences.

387. MULTIFACTORIAL INTERVENTION TO REDUCE FALLS IN ELDERLY WOMEN FROM PRIMARY HEALTH CARE

J.J. Montero¹, C. Molina¹, E. Fernandez¹, N. Montella², R. Canteria¹, O. Migykiova¹, A. Ferrer¹ (¹ABS Mataro 7. ICS; ²SAP Mataro-Maresme. ICS; 31297jma@comb.es)

Objectives. To reduce the incidence of falls after one year of monitoring in women ≥ 65, attended in medical office. **Design / Methodology.** Intervention study before-after in primary health care. Population: women ≥65 recruited during 2005. Excluded: home visit or institutionalized. Sociodemographic data and risk factors to fall were also collected. Intervention: reduce number of drugs, remove benzodiazepines and/or antidepressants, detect posture-related hypotension, put right visual defficiencies, go in for sport, and general home risk information. Telephonic monitoring every 4 months and control visit once per year. Comparison of falls with the same group in 2004. **Results.** A 84 women began the study, -77 had already finished it (92%). Average age: 75.8 (SD±5.83). 88.3% shown some fall risk factors in 2006, alter 1 year the percentage had increased up to 96.2%. A 43.8% of the women shown at least one fall during the control year, (26.2% in pre-

vious period). Polipharmacy has been reduced from 75% in 2006 to 71.4% in 2007. Psychotropic drugs present no significant variation. Tinetti test shown worse results in 13.1% of the women, at the same time Timed Up & Go made worse results in 25.9%. Four women were cataract surgical intervened. *Conclusions.* It seems that we have few possibilities to reduce the risk of falls through punctuals visit in medical office. Are the impact of their age is higher that our efforts? We have not got better results in psychotropic consumption or in improve their visual acuity. Multidisciplinary intervention studies seems to be the most efficient way to reduce the risk of falls in elderly.

388. ALCOHOL HABITS AND SYMPTOMS OF ANXIETY AND DEPRESSION IN ELDERLY. THE «FAENZA COMMUNITY AGING STUDY»

V. Morini¹, A.R. Atti¹, C. Forlani¹, B. Ferrari¹, P. Casadio¹, E. Dalmonte², D. De Ronchi¹ (¹Institute of Psychiatry «P.Ottonello», University of Bologna, Bologna, Italy; ²Unit of Geriatric Medicine, Local Health Authority of Ravenna, Ravenna, Italy; levalentine@lycos.it)

Aims. To explore the association between alcohol consumption and symptoms of anxiety and depression in Italian elderly aged 61+ without dementia from «The Faenza Community Aging Study», a population based survey (N=7389; 71.9±7.7 years; 59.7% women), [De Ronchi, 2005]. *Methods.* The cohort was questioned about drinking habits (quantity, changes) and lifetime presence of depressive or anxiety symptoms. Considering age, gender, education, marital status, MMSE score, cerebro-cardio-vascular diseases and socio-economic status, adjusted Odds Ratios and 95% Confidence Intervals (aOR;95%CI) were computed by Logistic Regression Models to evaluate the associations between alcohol drinking and anxiety or depressive symptoms. Being teetotaler was used as reference category. *Results.* More than half of the women was teetotaler, 67.6% of men was current drinkers. Prevalence of symptoms of anxiety was 14.7% in female and 5.8% in male gender (p<0.001); depressive symptoms were found in 688 (9.4%) persons, with higher prevalence in women (12.2% vs. 5.2%, p<0.001). Among depressed persons 300 (7.8%) were current drinkers and 18(11.4%) quit alcohol. Out of 613 participants with anxiety syndrome, 348 (42.8%) drink alcohol and 25(3.1%) stopped drinking. Quit drinking was positively related to anxiety symptoms (aOR;95%CI=1.87,1.17-2.97). A negative association was found between being a current drinker and being depressed (aOR;95%CI=0.81,0.67-0.98 for women and 0.77;0.53-1.11 for men). Anxiety was negatively associated with being a current drinker in the total population (aOR;95%CI=0.84;0.70-1.00 for women and 0.63;0.45-0.90 for men). However, when the quantity of alcohol intake was considered, a significant negative association was present only between both anxiety and depression and being a low drinker (<1/2 litre/day): (aOR;95%CI=0.82;0.70-0.96) and (aOR;95%CI=0.81;0.68-0.96) respectively. *Conclusions.* Given the cross-sectional design of our study, our results are suitable of bidirectional interpretation: on one side subjects suffering of anxiety or depression drink less than other people, on the other side less symptoms of anxiety or depression are present in subject who drink low quantity of alcohol. This may actually mirror a typical Italian pattern of drinking: tasting moderate quantity of

wine at meals is usual for persons in a good health status. Although we can't exclude that persons with anxiety are more likely to stop drinking because of worries concerning the health status, we believe more likely that subjects that stop drinking had a higher probability of anxiety symptoms. The use of pharmacological or psychotherapeutic treatments in those persons needs to be considered. Besides, to treat anxiety and depressive symptoms could improve the compliance of attempts to reduce or quit drinking.

389. EFFECTS OF AGING AND MILD COGNITIVE DECLINE ON ATTENTIONAL FUNCTIONS IN ELDERLY PATIENTS

V. Nativio¹, F. Maioli¹, M. Coveri¹, C. Marchetti¹, P. Pagni¹, T. Talerico¹, S. Linarello¹, C. Danastasio¹, V. Pedone² (¹Memory and Cognitive Disorders Unit, AUSL Bologna Ospedale Maggiore, Largo Nigrisoli, 2, 40132 Bologna, Italy; ²Division of Geriatric Medicine, AUSL Bologna Ospedale Maggiore Largo Nigrisoli 2, 40132 Bologna, Italy; clelia.danastasio@ausl.bologna.it)

The early stages of Alzheimer's Disease (AD) seem to involve deficits in semantic memory and attentional processes. The pathogenesis of attentional deficits in AD arises from (a) damage to prefrontal, cingulate, parietal and premotor cortical areas, (b) disconnection between the anterior and posterior cortical areas and (c) decreased cholinergic function. Aim of the study: to investigate four domains of attention in a sample of elderly patients: 1) the ability to screen out irrelevant stimuli and focus on a single stimulus (selective attention); 2) the ability to maintain a focus of attention over extended period of time (sustained attention); 3) the ability to detect, shift and engage targets (attentional control); 4) the visuospatial memory. Patients: Four-hundred community-dweller elderly patients (mean age 73,6±5 yr, range 65-85 yr), without history of cognitive and functional impairment. Setting: Outpatients geriatric service, Memory and Cognitive Disorders Unit, Division of Geriatric medicine, Medical Dpt., Maggiore Hospital, Bologna, Italy. *Methods:* In all subject clinical history and Mini Mental State Examination (MMSE, range 0-30) were obtained. A cut-off of 23.8/30 at the MMSE was chosen to indicate the presence of cognitive decline. All patients completed a neuropsychological test battery including: 1) the Attentive Matrices Test (assessing selective attention); 2) The Bells Test (assessing sustained attention for single choice); 3) The Toulouse Pieron Walther Test (assessing sustained attention for multiple choice); 4) The Inverse Motor Learning Test (assessing attentional control); 5) The Visuospatial Digit Span (assessing visuospatial memory). *Results:* Deficit in sustained attention for multiple choice and in visuospatial memory were more prevalent than other attentional disorders in our sample. The visuospatial memory was the only age-related attentional function (r=-0.35; p<0.001). 336 subjects scored ≥ 23.8/30 at the MMSE, 64 subjects scored <23.8/30 at the MMSE. The MMSE score was related to all attentional test scores (p<0.001). Mild cognitive decline patients performed worse than healthy subjects in selective attention (score 35.4±8.2 vs 41.5±8.7; p<0.001) and in attentional control (score 19.8±5.6 vs 23.1±2.7; p<0.001). *Conclusions:* The results indicate that some decline of attentional functions occurs in normal aging and a real deficit in attentional processes is found in early stages of cognitive decline.

390. INFLUENCE OF TRAINING ON QUALITY OF THE LIFE OF

PATIENTS OF ADVANCED AGE WITH CHRONIC HEART FAILURE

J.N. Nekludova, Y.N. Nekludova (*The M. Mirrakhimov National center of cardiology and internal medicine, Bishkek, Kyrgyzstan; nekludova05@yandex.ru*)

The purpose of research was studying influence of therapeutic training on quality of life and a clinical-functional condition of elderly patients with chronic heart failure (CHF). Materials and methods. 52 patients are included in research in the age of than 65 years (middle age $70,2 \pm 2,3$ yr) with CHF III-IV functional class (FC), randomized in two groups are more senior: 1 group of intervention ($n=27$) and 2 — control group ($n=25$). Diagnosis CHF was established on the basis of clinical displays and the data of tool inspection. A functional condition of patients estimated on classification NYHA and the 6 minute walk test (6MWT). Quality of life (QL) studied with the help of technique Minnesota Living With Heart Failure Questionnaire (MLHFQ). The group of intervention was trained on themes: the general data about CHF, symptoms CHF and methods of self-checking, a diet at CHF, a mode of medicamentous therapy and physical activity. All patients received base medicamentous treatment CHF: inhibitor ACE, beta-adrenergic blocking agent, diuretic, under indications digoxin. General duration of supervision has made 6 months. *Results.* For the period of supervision in 2 group 1 patient has died of progressing intimate insufficiency. Lethal outcomes in 1 group it has not been registered. The quantity of repeated hospitalization in group of intervention has made 4 (14,8%), in control group — 9 (36%). Improvement FC CHF in group trained has taken place at 19 (70,4%) and in control group at 8 (32%) patients. On data 6MWT in 1 group the increase in tolerance to physical loading is marked (the gain of a distance has made 92,41 m; $p<0,001$) while in 2 group of essential changes of this parameter it is not received (a gain of a distance of 50,1 m, $p>0,05$). At research QL with the help of questionnaire MLHFQ in 6 months the total parameter in group of intervention (with $49,5 \pm 14,8$ up to $65,2 \pm 11,5$, $p<0,05$) has authentically improved, in comparison with control group where the tendency to improvement QL ($p>0,05$) was marked only. Thus, training of elderly patients with CHF renders positive influence on quality of life, a clinical-functional condition, tolerance to physical loading and reduces requirement for repeated hospitalization.

391. PREVALENCE OF ANEMIA AND ITS POTENTIAL CAUSES IN HOSPITALIZED PATIENTS WITH CONGESTIVE HEART FAILURE

N.I. Nekrasova, D.V. Preobrazhensky, P.A. Vorobiev, T.A. Ermakova, I.D. Wyshinskaya (*I.M. Sechenov Moscow Medical Academy, Moscow; mtpndm@dol.ru*)

Background. It has recently been found that mild or moderate anemia is common among patients with congestive heart failure (CHF), occurring in 25 to 60% of patients. The pathogenesis of anemia in CHF is multifactorial; its specific causes include nutritional deficiencies, renal insufficiency and anemia of chronic inflammation. In advanced CHF hemodilution is common and is thought to associate with decrease of hematocrit and hemoglobin (Hb) levels. We evaluated the prevalence of anemia and its potential causes in hospitalized patients with CHF. Methods. We examined the 314 consecutive patients with CHF who

met Framingham criteria for CHF. The mean age of the study population was 72 ± 11 years and 61% were women. Anemia was defined by World Health Organization criteria (plasma Hb concentration <130 g/l for men and <120 g/l for women). *Results.* Anemia on admission was present in 51% patients with CHF; only 23% of 159 patients with anemia had Hb levels below 100 g/l. Anemia was equally common in men and women and was not associated with age, left ventricular systolic dysfunction or mild-to-moderate renal insufficiency. There is no identifiable cause for anemia in 67% patients with CHF. In 19 patients anemia appeared related to iron-deficiency and in 3 — to vitamin B₁₂ deficiency. In 23 patients without nutrient deficiencies presumed cause of anemia was chronic kidney disease that is associated with cancer in 2 patients. Other uncommon causes of anemia included acute hemorrhage (5), cancer or leukemia (3) and immunosuppressive therapy for rheumatoid arthritis (1). In 110 patients who received loop diuretics within 5–7 days after admission the mean Hb levels increased from 113 ± 21 to 124 ± 21 g/l ($p<0,01$), suggesting that hemodilution was present on admission. Of 85 patients with anemia on admission in 42 (49%) Hb levels increased to normal values for respective sex. *Conclusion.* Anemia is very common in CHF. Hemodilution contributes to the anemia in CHF. A substantial proportion of anemia in patients with CHF is of indeterminate cause. Approximately one third of anemia appeared related to nutritional deficiencies, renal insufficiency, acute hemorrhage and cancer.

392. AUTOANTIBODIES TO OXIDIZED LOW DENSITY LIPOPROTEINS IN ELDERLY PATIENTS WITH PROGRESSING ATHEROSCLEROSIS

A.Yu. Nerus¹, S.A. Urazgildeeva¹, L.V. Vasina¹, A.Yu. Titkov², V.S. Gurevich² (¹*I.I. Mechnikov State Medical Academy;* ²*Sokolov Military Training Hospital;* *dyakovlev@gerontology.ru*)

Background. Recent studies have shown an influence of oxidative modification of low density lipoproteins (LDL) to progression of coronary atherosclerosis. Autoantibodies against oxidized LDL have been proposed to be an indicator of oxidative modification of LDL and the marker of accelerated atherosclerosis. However, the relationship between autoimmunity reaction to modified LDL and progression of atherosclerosis in the elderly remains unclear. Materials and methods: Blood samples of hypercholesterolemic (LDL cholesterol levels >130 mg/dL) of 157 elderly patients with and without clinical and instrumental signs of atherosclerosis progression were examined in this study. No patient had taken any cholesterol reducing agent or antioxidant vitamin supplements during the preceding 2 months. Aspirin and non-steroidal anti-inflammatory agents were stopped for 10 days before study. Enzyme-linked immunosorbent assay was used to determine autoantibodies against oxidized LDL. Reactive oxygen species (ROS) have been detected by chemoluminescent method. *Results:* It has been shown that mean anti-IgG titres to oxidized LDL and ROS levels are significantly higher in group with documented progression of atherosclerosis as compared to normal laboratory values as well as with control group. The prevalence of multivessel atherogenic lesions was observed in elderly patients subjected to coronary angiography in comparison with those of middle age. The positive correlation between antibody-

ies to oxidized LDL and extent of coronary obstruction calculated with accordance to angiographic data has been also demonstrated. *Conclusion:* Our findings specify that association of atherogenically modified LDL with clinical manifestation of progressing atherosclerosis in elderly is one more evidence for the role of autoimmunity in ageing.

393. MYOCARDIAL DYSFUNCTION IN THE ELDERLY PATIENTS WITH HEART FAILURE

V.S. Nikiforov, A.S. Svistov (Military Medical Academy, St.Petersburg, Russia; victor-nikiforov@yandex.ru)

Congestive heart failure is common in the elderly population. Approximately 6 to 10 percent of the population 65 years or older have heart failure. Heart failure is the most common reason for hospitalization in elderly patients. The aim of this study was to assess left ventricular function in the elderly patients with congestive heart failure. *Materials and Methods:* Five hundred sixty seven patients (430 men, 52.3 ± 4.7 years of age) with congestive heart failure were studied. One hundred fifty nine patients (28%) were older than 65 years. All patients had class I to IV NYHA heart failure. 2D and Doppler echocardiographic studies were acquired with the use of a System Five digital ultrasound scanner (GE Medical Systems). Analysis of pulsed tissue Doppler images was performed offline on a personal computer with the aid of a customized software package (Echopac, GE Medical Systems). *Results:* The elderly patients had atypical symptoms of heart failure or absent, so diagnosis of heart failure was difficult. One hundred twenty two patients (77%) had low left ventricular ejection fraction ($36.2 \pm 5.4\%$) and eighty two patients (72%) had regional wall motion abnormalities. At the same time abnormalities of systolic and diastolic long-axis function assessed by tissue Doppler imaging were available in all patients. Myocardial diastolic velocities were associated with characteristics of the mitral inflow by pulsed Doppler echocardiography and diastolic time intervals. Elderly patients had significant inter- and intraventricular dyssynchrony. The age of patients had negative correlations to parameters of systolic and diastolic function and positive correlation to left ventricular dyssynchrony. *Conclusions:* The aging has a greater impact on myocardial function. The tissue Doppler imaging is useful for the verification of systolic and diastolic dysfunction and myocardial dyssynchrony in the elderly patients with congestive heart failure.

394. ON THE ACTIVITY OF THE SCIENTIFIC AND PRACTICAL GERIATRIC CENTRE IN SAMARA

O.L. Nikitin, N.O. Zakharova, D.A. Dratch (State Educational Institution Scientific and Practical Geriatric Centre, Samara, Russia; gerontology_sam@mail.ru)

Practical solution of guaranteed free medical service for elderly population is one of the vital and most difficult problems of public health service reforming. A steady percentage growth of elderly people in the age structure of the population is seen in Samara oblaSt. According to the demographers' forecasts the number of elderly people will continue to grow, especially of senior people and long-livers. Population aging creates the need of medical and social services radical changes. Public health system must include a consolidated well-coordinated elderly people aid service. Samara Scientific and Practical Geriatric Centre was established to solve the problem connected with the

increased medical service needs of elderly people, the growth of sick rate, hospitalization rate and disability rate of retired people. The main goal of the Centre is to provide quality medical service to elderly people, to prevent early aging of Samara oblast population and to implement the program of «healthy aging». The main aspects of the Geriatric Centre's activity are: (1) Health monitoring of elderly and senior age groups; (2) Monitoring of medical service needs of elderly people; (3) Medical and disease prevention institutions functioning analysis; (4) Monitoring of medical, diagnostic and rehabilitation services provided to the population by geriatric and medical and social institutions; (5) Consulting service for senior age people; (6) Implementing the newest methods of rapid aging prevention; (7) Providing organizational and methodological assistance to medical and disease prevention institutions; (8) Rapid aging and age pathology medical prevention services for local population. The Centre consists of three departments, namely, the clinical medicine department, the fundamental medicine department and the department of rehabilitation medicine and therapy aimed at aging processes controlling. One of the major spheres of the Centre's activity is the scientific substantiation of anti-aging therapy methods, that is the use of tissue preparations, hormone preparations, adaptagens of vegetable, animal and synthetic origin, antioxidants, methods of enterosorbition, gravitational effects, taking into account the principles of demonstrative medicine.

395. EFFECT OF CALCEMIN ADVANCE ON BACK PAIN AMONG POSTMENOPAUSAL FEMALES WITH OSTEOPENIA

O.A. Nikitinskaya, S. Anikin, N.V. Toroptsova, T.A. Korotkova, L.I. Benevolenskaya (Institute of Rheumatology RAMS, Moscow, Russia; epid@irramn.ru)

Aim: to evaluate efficacy and safety of Calcemin Advance among postmenopausal osteopenic females for prevention of osteoporosis. *Materials and methods.* There were included 100 females (mean age 59 ± 5 years) with duration of postmenopause more than 2 years. BMD in lumbar spine or femoral neck was from $-1,5$ SD to $-2,5$ SD (T score). The females were randomized in two groups: first group (N=50) treated with Calcemin Advance 1 tablet twice a day and the control group (N=50) without treatment. There were three visits: baseline, on 3 and on 6 months after initial visit. We used VAS for evaluation of back pain in thoracic and lumbar spine at all visits. *Results.* We found the significant decreasing of back pain in thoracic and lumbar spine ($p=0,028$ and $0,008$ respectively) after 3 months in the treatment group compared with the control. In the treatment group 15(30%) patients had significant decreasing of back pain in thoracic spine and 22 (44%) in lumbar spine, while in the control group only 6 (12%) patients had decreasing back pain in thoracic spine and 8 (16%) in lumbar spine ($p=0,027$ and $0,0023$ for thoracic and lumbar regions respectively). The increasing of back pain had 8 (16%) patients in the treatment group and 17 (34%) patients in the control ($p<0,05$). We found out the following decreasing of back pain in lumbar spine after 6 months of treatment with Calcemin Advance compared with the control ($p<0,05$). *Conclusion:* Calcemin Advance significantly reduces back pain among postmenopausal females with osteopenia.

396. OLD AND GIVEN UP FOR DYING? MULTIDISCIPLINARY PALLIATIVE CARE TEAMWORK IN THE NURSING HOME

A. Norstron¹, B.S. Husebo², G. Bollig³, S.B. Husebo⁴
 (¹Bergen Red Cross Nursing Home, Norway; ²University of Bergen, Norway; ³Bergen Red Cross Nursing Home, Norway; University of Klagenfurt and Vienna, Austria; ⁴University of Klagenfurt and Vienna, Austria; bettina.Husebo@isf.uib.no)

The palliative care unit in our nursing home (NH) opened June 2000 to ensure excellent palliative care for elderly with extraordinary needs and their relatives. Physician and nurse have visits every day. Once a week, patients' needs are discussed in a multidisciplinary team, consisting of nurses, physicians, physiotherapists, ergotherapists, priest, social worker, musictherapist and volunteers. Patients on long-term wards are visited by physicians and nurses once the week; palliative care needs are discussed in the multidisciplinary team at the same day. *Aim:* A prospective study investigated multidisciplinary needs of patients admitted to palliative care compared with patients admitted to long-term wards. *Method:* Demographic data, need for pain- and symptom management, and need for multidisciplinary teamwork were registered for palliative care ward (n=68) and long-term wards (n=82). *Results:* Basic palliative care can be given on every NH ward. Patients with extraordinary needs and/or difficult symptom management benefit from a specialised service department of palliative care. *Conclusion:* All patients in nursing homes should have the opportunity to get basic palliative care if needed. Nursing home staff should have basic knowledge and training in palliative care for the elderly. Special units with experienced physicians, nurses, etc. are helpful in caring for more complicated cases and can prevent the need for hospital care.

397. HIDDEN HYPOPITUITARISM IN AN ELDERLY SURGICAL PATIENT — A CAUTIONARY TALE

L.A. O Shea¹, A. Roarty², N. Couse³, J. Miranda², A.G. Stack¹ (¹Dep of Renal Medicine; ²Dep of Geriatrics; ³Dep of Vascular Surgery; laos@eircom.net)

A 73 year old man presented surgically with a two-month history of fatigue, lethargy and vomiting, projectile in nature, occurring immediately after every meal, without reaching satiety. There was no preceding nausea or associated pyrosis. He had noticed one stone weight loss over the previous month as he could only tolerate water orally. Comorbid medical conditions included hyperlipidaemia, hypertension and ischaemic heart disease. Surgical history included benign prostatic hypertrophy (BPH) with a transurethral prostatectomy performed two years previously. There was no past history of head trauma or radiation treatment. Medications included aspirin 75mg, atenolol 25mg OD, clopidrogel 75 mg OD. There was no clinical evidence of organomegaly or lymphadenopathy. As extensive surgical investigations including barium meal and follow through, gastroduodenoscopy, barium enema, contrast abdomen and pelvis CT all proved negative, a medical opinion was sought. On further questioning, he denied any prior history of head trauma (including childhood), exposure to any radiation therapy or family history of endocrine pathologies. Physical examination was again largely unrevealing. A significant drop in blood pressure between supine and erect readings was recorded. BP 117/65 mmHg to 85/65 mmHg without Addisonian stigmata or evidence of cardiac compromise. Neurological examination and fundoscopy were also normal. Pre- and postprandial

glucometer readings were consistently low (4mmol/l). Electrolytes including sodium, potassium were within normal range. A short synacthen test (250 mcg synacthen IM) was dramatically positive with baseline, 30 and 60 minute cortisol levels of 3, 53 and 78 nmol/L respectively. (Normal Range, NR 25 — 150); Panhypopituitarism with secondary hypoadrenalism was confirmed with FSH, LH both < 0.5 IU/L (NR 1-10), ACTH < 0.1mIU/ml (NR 1.8-8.2), Growth Hormone GH < 0.6ng/ml (NR 1.61-18.77), IGF-1 0.38 (NR 5.76-19.54), testosterone < 10 nmol/L (NR 10.3-34.5 nmol/L), free testosterone 17.8nmol/L (NR 20-350nmol/L). Replacement hydrocortisone, eltroxin, testosterone and bisphosphonate were introduced with prompt resolution of the vomiting and resumption of regular meals. An MRI Pituitary revealed no abnormality. He remains well on followup. In conclusion, hypopituitarism should be considered in any individual with diminished wellbeing, non-specific symptomatology, absent/non-specific clinical findings and normal sodium and potassium levels. A high index of suspicion is essential to make the diagnosis given the much higher mortality than that of the general population attributed to premature cardiovascular disease.¹ The stimulatory prostatic effect² and unfavourable cardiovascular effects³ outweighs any potential GH benefit. Appropriate hormone replacement therapy (HRT) is both life-saving and produces dramatic improvement in quality of life with symptom alleviation and favourable cardiovascular, lipid and bone metabolism⁴ in a vulnerable subpopulation. GH has an adverse profile with the highest morbidity and mortality including: impaired cardiac function with endothelial dysfunction with increased thickness of the media intima of blood vessels³ leading to precocious or accelerated atherosclerosis, abnormal body composition with increased central adiposity and insulin resistance, decreased lean muscle mass and exercise capacity⁴, hyperlipidaemia especially LDL. Firstly, there is a lack of prospective longitudinal studies which show conclusive benefit in this age group in cardiovascular and skeletal terms⁵. Finally, in vitro studies have demonstrated a stimulatory action of IGF-1 on prostate epithelial cell proliferation⁶ which may explain the epidemiological observational studies which suggests that even in the normal elderly population with IGF-1 in the upper-normal range are at increased risk of prostatic carcinoma⁷. A prospective longitudinal study with a 22-month followup period by Roux et al has reported no increased risk of prostatic cancer (where PSA was taken as the indicator) and also showed a lack of correlation between PSA and IGF-1 levels. As this question is still not definitively answered, in this 73 year old man the potential risks of rhGH outweigh any cardiovascular benefits and increased life expectancy. *References:* [1] Rosen T, Bengtsson B-A. Premature mortality due to cardiovascular disease in hypopituitarism. *Lancet* 1990; 336: 285-8. [2] Bulow B, Hagmart L, Mikoczy Z, et al. Cerebrovascular mortality in patients with hypopituitarism. *Clin. Endocrinol (Oxf)* 1997; 46: 75-81. [3] National Institute for Clinical Excellence. Human Growth Hormone (somatotropin) in adults with growth hormone deficiency. *Technology Appraisal* 2003; 64: 4-7. [4] Prabhakar VKB and Shalet SM. Aetiology, diagnosis and management of hypopituitarism in adult life. *Postgrad. Med. J.* 2006; 82: 259 — 266. [5] Shalet SM. GH deficiency in the elderly:

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398. PREVALENCE OF CHRONIC OBSTRUCTIVE DISEASE OF LUNGS IN THE ELDERLY AND OLD-TIMERS OF YAKUTSK CITY

S.V. Obutova¹, N.I. Logvinenko², O.V. Tatarinova³, L.S. Kylbanova³, V.N. Neustroeva³ (¹Hospital #1 of Health Care Ministry of Sakha Republic (Yakutia) Geriatric Centre, Yakutsk, ²Research Institute of Internal Medicine of SB AMS, Novosibirsk, ³Yakutsk Scientific Centre RAMS and Government of Sakha Republic (Yakutia), Yakutsk, Russia; tov3568@mail.ru)

Purpose: to study prevalence of chronic obstructive disease of the lungs (CODL) among the elderly and old-timers of Yakutsk city. **Materials and methods:** among the population of Yakutsk aged 60 and older a screening was conducted using standardized epidemiologic methods. Of all the 18 320 subjects registered, only 3 276 of them were included in this observational cohort study. The screening was hold in January 1, 2005. An initial sample numbered 1694 respondents (793 men and 901 women). From the final sample of 584 subjects enrolled, 461 of them were examined for CODL. When analysing the prevalence of CODL the respondents were divided into four age-adjusted groups. In the age group of 60-69 years there were 175 respondents (37.96%), including men — 45.14%, women — 54.85% accordingly; in the age group of 70-79 years 183 subjects (39.69%), 44.8% were males and 55.19% were females. The age group of 80-89 years comprised 85 respondents (18.43%), 43.52% were men, 56.47% being women accordingly. In the age of 90 and older there were 18 respondents (3.90%), among them 66.66% were males and the rest 33.33% being females. To verify the diagnosis clinical functionary surveys were conducted, standardized questionnaires were given to fill in. **Results:** a high prevalence rate of CODL was estimated in Yakutsk population aged 60 years and older. In the total selection CODL was diagnosed in 26.03% of the 461 respondents examined, of them 210 were men (12.14%) and 251 women (13.88%). In the age group of 60-69 years CODL was registered in 7.58% of cases; of them men amounted to 3.03% and women — 4.55% accordingly. High prevalence of CODL was observed as well in the age group of 70-79 years (14.53%), including 7.59% of men and 6.94% of women accordingly. In the age of 80-89 years CODL was detected in 3.89% of all the respondents with 1.51% of men and 2.38% of women accordingly. In the age group of 90 years and older CODL was not detected. **Conclusion:** the prevalence rate of CODL among the older age groups appears to be significantly higher as compared with that registered in medical institutions. Early diagnostics and timely treatment would allow to predict the disease flare and progression.

399. BERG BALANCE SCALE AND THE BALANCE PLATFORM MEASUREMENTS IN ELDERLY FALLERS AND NON-FALLERS

T. Ocetkiewicz, A. Skalska, T. Grodzicki (Jagiellonian University, Cracow, Poland; tooce@esculap.pl)

Objectives: The aim of this study was to compare the two instruments for balance assessment: the results of the

balance platform tests with the results of the Berg Balance Scale (BBS) in elderly persons. **Materials and Methods:** 101 persons aged 60–95 y., mean age 71,66±7.31, 65 women and 36 men, were enrolled to this study. The medical history and data concerning the falls were obtained by a questionnaire. In all persons Berg Balance Scale and two test with eyes open (EO) and eyes closed (EC) on computer balance platform were performed. Five parameters of the center of feet pressure (COP) movement were analyzed: the length of the path /L(cop)/, the mean velocity /V(cop)/, the mean lateral sway /MLS(cop)/, the mean antero-posterior sway /MAPS(cop)/, the maximal antero-posterior sway /MaxAPS(cop)/. The mean values of measurements in two groups with results in the BBS <45 and BBS ≥ 45 were compared by the Student's T test. **Results:**

	BBS<45; n=11	BBS≥45; n=90	P value
L(cop) EO	391,00±212,24	266,9333±86,64	0,0004
V(cop) EO	13,00±7,05	8,9222±2,91	0,0005
MLS(cop) EO	4,90±1,97	3,4222±1,28	0,001
MAPS(cop) EO	4,00±3,03	3,20±1,13	0,086
MaxAPS(cop) EO	21,18±19,44	15,06±5,03	0,02
L(cop) EC	775,81±355,38	465,01±216,36	0,00007
V(cop) EC	25,72±11,91	15,47±7,19	0,00008
MLS(cop) EC	7,18±2,75	4,52±1,89	0,00007
MAPS(cop) EC	5,81±2,48	4,15±1,65	0,004
MaxAPS(cop) EC	33,00±14,37	22,17±9,03	0,0007
Number of falls	6 (54,5%)	35 (38,9%)	

The significant correlations between BBS score and all parameters of the COP movements in eyes closed test and with MLS(cop) and MaxAPS(cop) in eyes open test in the whole examined group were found. In the group with BBS score ≥45 there was correlation between BBS and MaxAPS(cop) in eyes open test and dividing this group in two subgroups with BBS 45-49, and BBS ≥ 50 showed significant difference in MaxAPS(cop) EO (18,73±5,96 vs 14,33±4,53, p=0.02) and MAPS(cop) EO (3,80±1,52 vs 3,08±1,01, p=0.001). **Conclusions:** (1) Patients with worse results of the Berg Balance Scale had also worse results in all the parameters obtained in the balance platform. (2) In the group of elderly subjects with BBS score <45 and worse results in the balance platform tests the falls are more frequent. (3) Balance platform can be the useful tool to distinguish the patients with early balance impairment, less mobility and at risk for falling.

400. DELTA-SLEEP INDUCED PEPTIDE AND DIABETES MELLITUS IN ELDERLY

V.I. Odin¹, T.V. Belikova², E.S. Pushkova² (¹Military Medical Academy; ²St.Petersburg Geriatric City Centre; OdinVitali@mail.ru)

Background. Delta sleep-induced peptide (DSIP) as a regulatory peptide is important for diabetes as well as for aging mechanisms. Aim of the study was to investigate effects of treatment by DSIP-containing drug «Deltaran» in different variants of diabetes mellitus in elderly. **Materials**

and methods. Having carried out the pilot study, we examined 11 elderly diabetic patients (mean age 66.3 yr, BMI — 28,5 kg/m²), including diabetics treating by only diet, oral agents and insulin. All patients receive 20 doses of DSIP –containing drug «Deltaran» daily. Tests was before and after 60 days after beginning treatment. Blood samples took before and after 60 minutes after standard carbohydrates breakfaSt. *Results.* After treatment were observed improvement of quality of sleep and felling between meals in treating patients (p=0.010). Also there was a positive clinical trend includes of decrease of BP (ns), increase of pallestesia (p=0.017), decrease of MAU frequency (p=0.011) and decrease of glycaemia levels after load (p=0.033). As well as that, decrease of basal and reactive levels in blood of growth hormone (p=0.034 and p=0.005 accord.), insulin (ns), cortisol (ns) and on the contrary increase of dehydroepiandrosterone sulfate levels (ns) were observed. Main positive change observed in the patients: patient A. received only diabetic diet, who demonstrated a marked decrease of fast and postprandial glycaemia, increase of basal growth hormone levels with intensification of decrease growth hormone levels on glucose load and removal attack of hunger; patient B. received oral agents with obesity, who showed a considerable decrease of insulin resistance, increase dehydroepiandrosterone-sulfate basal level and normalizing a blood pressure; patient C. received oral agents having impairment insulin secretion and positive test on ICA, who demonstrated marked improvement insulin secretion and disappearance of hypercortisolism; patient D. received insulin therapy having positive test on ICA, who showed a normalizing of increasing basal growth hormone and cortisol levels and strong decrease of insulin dose. *Conclusions.* These pilot trial indicate positive antidiabetic and geroprotective effects of DSIP-containing drug «Deltaran» in elderly patients with different variants of diabetes mellitus.

401. EFFICIENCY OF THERAPY ENALAPRIL AND LOSARTAN AT ELDERLY PATIENTS WITH DIASTOLIC HEART FAILURE

A.A. Okunova, T.M. Murataliev (M. Mirrakhimov National center of cardiology and internal medicine, Kyrgyzstan, Bishkek; okunova2108@mail.ru)

The purpose of research was studying influence Enalapril (E) and Losartan (L) on parameters mitral Doppler flow velocity at patients with diastolic heart failure (DHF) of elderly patients. Materials and methods. 40 patients (11 men and 29 women) are surveyed in the age of than 60 years (middle age 70,3±5,6) with attributes CHF FC III on NYHA and ejection fraction (EF) LV ≥45%, LV end-diastolic diameter (LVEDD) ≤5,5 cm, sinus a rhythm, diastolic dysfunction LV (are more senior as infringing of a relaxation or to «pseudo-normal» type). On data echocardiographic was estimated: peak velocity of early filling (E), peak velocity of atrial filling (A), and the E/A ratio, isovolumic relaxation time (IVRT) and deceleration time (DT). Before inclusion in research patients within 4 weeks did not accept inhibitor ACE and antagonists of receptors to angiotensin II. Patients were randomized in two groups: reception enalapril (n=20) and lozartan (n=20), each of which is divided (shared) into subgroups: infringing of relaxation (IR) (E — 14 patients, L — 12 patients) and «pseudo-normal» type (PN) (E-6 patients, L-8 patients). Average doze E has made 30,5±6,7mg/

day, L — 79,7±9,8mg/day. Duration of supervision — 6 months. *Results.* On data echocardiographic in subgroups of patients with IR unidirectional dynamics of parameters mitral Doppler flow velocity that was shown contraction IVRT on 2,3% was marked, DT on 11% (p<0,05) and increase in correlation E/A at 8% (p<0,05) in group E, and in group L contraction IVRT has made 6%, DT — 21,7% (p<0,05) and increase in correlation E/A — 27% (p<0,05). At persons with PN type TMDS has changed in the opposite side. So in group L reduction of correlation E/A by 8,2% and lengthening DT by 2,3% while in group E was marked, on the contrary, there was increase E/A at 47% (p<0,05), reduction TIVR by 8,5% and DT 3,7%. The conclusion: At patients with DHF with infringing of a relaxation both E, and L improved diastolic function LV, and at patients with «pseudo-normal» type L is more effective in comparison with E at his long-term ingestion.

402. CHEWING PROBLEMS AND MORTALITY AMONG OLDER ADULTS IN HOME CARE: RESULTS FROM THE ADHOC STUDY

G. Onder, R. Liperoti, M. Soldato, F. Landi, R. Bernabei (Universita Cattolica del Sacro Cuore, Roma; graziano_ onder@rm.unicatt.it)

Background: presence of chewing problems is associated with poor nutritional status and alteration in nutrient intake. These alterations may lead to an increased risk of death. However, evidence on the effect of chewing problems on mortality in older adults is still limited. The aim of the present study is to assess the association between chewing problems and one-year mortality in an older population receiving home care in Europe. *Methods:* We conducted a longitudinal analysis using data from the AD-HOC database, which contains information on older adults receiving home care services in 11 European countries. Chewing problems were defined as inability to chew food easily and without pain or difficulties, regardless of cause. *Results:* Mean age of 2,755 participants to the study was 82.2±7.2 years; 394 participants (14.3%) presented with chewing problems. One-year mortality differed significantly according to presence of chewing problems: 303/2,361 (12.8%) without chewing problems (crude incident rate per person-year 0.15) and 80/394 (20.3%) participants with chewing problems (crude incident rate per p-y 0.24) died during the follow-up. After adjusting for potential confounders, the risk of death was significantly higher for participants with chewing problems (Adjusted Hazard Ratio 1.45, 95% Confidence Intervals: 1.05 — 1.99). This association was still consistent after exclusion of participants with cognitive impairment (Adjusted HR 1.50, 95% CI: 1.03 — 2.20) and those with unintended weight loss (Adjusted HR 1.62, 95% CI: 1.12–2.34). *Conclusion:* among older adults in home care in Europe, chewing problems are associated with an increased risk of mortality, irrespective of potential confounders.

403. CORRELATIONS BETWEEN NITRIC OXIDE AND FIBRINOGEN PLASMA LEVELS AT CAROTIDIAN ATHEROSCLEROSIS AGED PATIENTS

S. Opris¹, V. Andrei¹, F. Halici¹, C. Gainaru¹, L. Iliuta², A. Valuch¹ (¹Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, ²Institute for Cardiovascular Disease «C.C. Iliescu», Bucharest, Romania; simona_opris@yahoo.com)

Decreased production and/or action of nitric oxide (NO) are central to the pathogenesis of atherosclerosis (ATS) via promoting vasoconstriction, leukocyte adherence, platelet activation, mitogenesis, oxidation, thrombosis, impaired coagulation and vascular inflammation. Increased fibrinogen concentrations in cardiovascular diseases have prompted to link fibrinogen as an independent risk factor for increased morbidity and mortality in these conditions that should be added to the cardiovascular risk factor profile. Blood samples were obtained from patients distributed in 2 age groups: group 45-64 years with control C1 (n=8) and ATS1 (n=12); group 65-84 years with control C2 (n=9) and ATS2 (n=15) and a group ATS3 (45-84 years, n=12) with advanced stenosis (70-90%) evaluated by Doppler ultrasonography. Total NO levels were measured by spectrophotometric detection at 540 nm with ELISA reader and fibrinogen with optic cuagolometer by Clauss method. Our data showed between ATS1 and ATS2 a significant increased (61.5 vs. 32.44 $\mu\text{mol/L}$, $p<0.05$) at NO levels. For fibrinogen we obtained a significant increased at ATS1 vs. C1 (510.5 vs. 402.87 mg/dL, $p<0.05$) and the same for ATS2 vs. C2 (523.3 vs. 360.89 mg/dL, $p<0.001$). From the point of view of total atheroms area we observed a high semnificative rose at ATS1 and ATS2 vs. ATS3 ($p<0.005$). Linear equations regression showed a strong correlation between fibrinogen and total atheroms area at ATS3 ($p<0.05$) and the same for NO at ATS1 ($p<0.02$). Also, we found a strong negative correlation between NO and fibrinogen at ATS2 ($p<0.05$). Relation between aging and studied parameters revealed a semnificative decreased of NO ($p<0.05$). Study results suggest that possible alterations of NO and fibrinogen levels are associated with atherosclerosis. Fibrinogen, as a marker for chronic inflammatory process, who reflects atherogenesis, could play an active role in plaque development and progression. Endothelial damage and increased vascular permeability can be the result of raised NO synthesis. It remains to be determined why normal physiological production of NO may prevent atheroma formation whereas overproduction, after inducible nitric oxide synthase induction, is potentially harmful. NO concentrations significantly declined with age and endothelial basal function restore at elderly patients requires further therapies who, at least, aim the NO pathway.

404. LONGITUDINAL EXAMINATION OF THE TRAIT OF NEUROTICISM AND ADJUSTMENT TO WIDOWHOOD

N.P. O'Rourke, N. Goldberg (Simon Fraser University, Vancouver (BC), Canada; O'Rourke@sfu.ca)

The death of a spouse is among the most stressful of normative life events. This finding is particularly germane given that roughly half of all women over the age of 64 will experience the death of their husbands. Although the majority of widows adjust to this loss with the passage of time (i.e., return to prior states of well-being), it is estimated that 20% to 40% never fully recover. Despite this significant proportion of those for whom significant distress persists, a paucity of empirical research effectively distinguishes between those who adapt to conjugal bereavement versus those who remain symptomatic. The current study examines the role of the personality trait of neuroticism in relation to adaptation to widowhood. Widowed women recruited via the Internet were interviewed at two points

in time and categorized at baseline on the basis of neuroticism scores. As hypothesized, differences in life satisfaction and psychiatric distress were observed at recruitment; though these differences remained three years later, between group differences declined over time. Statistically significant Time x Group interaction effects were observed for both life satisfaction and psychiatric distress ($F[1,26]=4.56$, $p<.05$; $F[1,26]=4.79$, $p<.05$). The results of this study suggest that neuroticism is associated with lower well-being; however, these effects decline with the passage of time suggesting that neuroticism is associated with an extended period of loss and adjustment to conjugal bereavement. These findings are discussed in terms of individual differences in personality and adaptation to loss.

405. DESCRIPTION OF A MEMORY SELF-EVALUATION SCALE (MC NAIR AND KAHN SCALE) IN THE 2854 INCLUDED PATIENTS OF GUIDAGE PREVENTION STUDY

P.J. Ousset¹, J. Touchon², B. Vellas¹, S. Andrieu³, M. Ouzid⁴, H. Mathiex-Fortunet⁴, and GuidAge Group⁵
(¹Purpan Casselardit hospital Toulouse; ²Gui De Chauliac hospital Montpellier; ³INSERM Toulouse; ⁴IPSEN Paris; ⁵France; ousset.pj@chu-toulouse.fr)

Background: The Mc Nair and Kahn scale is a subjective scale used to evaluate the memory complaints in front of everyday conditions. **Objective:** the objective, is to analyse the Mc Nair results obtained from the baseline data of the phase III randomised GuidAge study and its usefulness in patients with memory complaints. 4066 elderly patients have been selected by 25 French memory centres in order to include 2854 patients aged 70 or above in this 5-year period study. **Results:** Mc Nair scale mean score was 26.5 ± 12 . Analyses demonstrated limited relationships with CDR=0 and CDR=0.5. Further analyses on high frequencies of answers «often» and «very often» >50% concerned question 4 (need for a written list while shopping). Questions with mean frequencies (25%–50%) were items 1 (difficulties to remember usual phone numbers), 2 (difficulties to find back where I put objects down) and 9 (difficulties to evoke names of known people). Frequency of answers «never» >50% was evidenced in items 7 (difficulties putting a key into a lock), 16 (to forget how I came there) and 18 (I forget to pay my bills). Mean frequencies (25%–50%) were observed in items 6 (I forget to call people back when they called me), 10 (I forget the day of the week), 14 (I do not put my cloths away into the right place), 17 (difficulties knowing if I was given the right change), 19 (need to do things slowly to be sure) and 20 (Having the feeling that my head is empty). **Conclusions:** Mc Nair Scale appears to be helpful in describing patients' memory difficulties in front of everyday situations without any impact on whether CDR is equal to 0 or 0.5. Could question number 4, with its high frequency be taken as an indicator of evolution to a more severe situation and should questions 1, 2 and 9 be considered as potential parameters of risk to be taken into account during a memory exam?. More information will be provided after a 5-year period.

406. INCIDENCE OF ALZHEIMER'S DISEASE IN 2854 ELDERLY PATIENTS WITH SPONTANEOUS MEMORY COMPLAINT: GUIDAGE STUDY: RESULTS AT YEAR 1

P.J. Ousset¹, J. Touchon², B. Vellas¹, M. Ouzid³, H. Mathiex-Fortunet³, S. Andrieu⁴, and GuidAge Group⁵
(¹Purpan Casselardit hospital Toulouse; ²Gui de Chauliac

hospital Montpellier; ³IPSEN Paris; ⁴INSERM Toulouse; ⁵France; ousset.pj@chu-toulouse.fr)

Introduction: Studies performed in the general population, demonstrate a low conversion rate into Alzheimer's disease. The targeted population of the GuidAge study is patients aged 70 or above, who spontaneously complained about their memory to their general practitioners (GP). Regarding the results of epidemiological studies, these patients are at risk of dementia conversion. **Objective:** The aim of this topic, is to present the incidence of Alzheimer's disease after 1 year of treatment / follow up in the GuidAge study. **Material And Method:** Conversion to dementia is suspected by the GP or by memory centre at the yearly control. Patients undergo usual psychometric tests for cognitive troubles detection. The diagnosis of Alzheimer's dementia is based on the current international criteria. A standardised data collection is performed for all patients. Conversion is established and the diagnosis definitely assessed by an Independent Committee. This committee is made up of 4 clinicians independent from the study. The Independent Committee evaluates the results of the clinical and psychometric tests for each patient suspected to be demented in order to validate or not the nature of the diagnosis. **Results:** 2800 patients have been included within a period of 33 months. Today, data of 108 patients suspected to have a dementia have been analysed by the Independent Committee. Data on the incidence at year 1 will be presented. **Conclusion:** The incidence of Alzheimer conversion at 1 year in the GuidAge study is the theoretical expected rate in the targeted population.

407. INTERACTIONS WITH DRUGS PRESCRIBED IN THE EMERGENCY DEPARTMENT IN ELDERLY PATIENTS

L. Outtier¹, P. De Paepe¹, M. Petrovic², W. Buylaert¹
(¹Ghent University Hospital, ²Ghent University Hospital, Ghent, Belgium; mirko.petrovic@ugent.be)

Aim. To assess the prevalence of interactions with drugs prescribed in the emergency department in elderly patients. **Methods.** A prospective observational study was conducted in the emergency department of the Ghent University Hospital during 3 consecutive weeks. The study population consisted of all patients of 65 years and older who were admitted between 8 AM and 5 PM. The medication lists were analysed for potential drug interactions by means of Lexi comp Uptodate online version 14.1® screening software. At the end of the study all medical notes were analysed by an expert panel consisting of 2 emergency physicians and 1 geriatrician, all with a certificate of clinical pharmacologist. The experts assessed the appropriateness and risks of the drug combinations for which the software identified an interaction. **Results.** The population consisted of 80 patients with a mean age of 77 years (SD 7.6). The mean number of prescribed drugs before admission was 5.1 (SD 3.1). The computer software identified 39 interactions in 23 patients between home medication and drugs prescribed in the emergency department. Three interactions (s pironolactone+potassiumchloride, bromazepam+propofol, verapamil+digoxine) were rated as potentially harmful for which therapy modification was advised. However the expert panel judged that in these cases the benefits of concomitant therapy outweighed the risks under close monitoring conditions. Twenty four interactions were rated as potentially clinically significant for which monitoring of therapy was advised; none of these were considered as an

unjustified drug combination by the expert panel. The drugs most frequently involved in these interactions were inhaled beta2 agonists (9), diuretics (7), acetylsalicylic acid (5), ACE inhibitors (5), warfarin (4), digoxin (4) and NSAIDs (3). Twelve interactions were identified with no evidence of clinical concern for which no action was advised. The computer software identified 10 interactions in 9 patients among drugs prescribed in the emergency department. For 2 interactions (propofol+fentanyl) therapy modification was advised, but the expert panel considered the association of drugs justified. Four interactions, all involving a combination of antiplatelet drugs and/or anticoagulants, were rated as potentially clinically significant for which monitoring of therapy was advised. Four interactions were identified with no evidence of clinical concern for which no action was advised. **Conclusion.** From the results of this study it appears that interactions with drugs prescribed in the emergency department frequently occur in the elderly. These findings underline the importance of the surveillance of drug interactions in the elderly admitted to the emergency department.

408. DYING AT HOSPITAL: END-OF-LIFE CARE IN GERIATRIC SERVICE

A. Palomo Iloro, M. Herrera Abian, J.M. Ribera Casado (Hospital Clinico San Carlos, Madrid, Spain; amayapalomo@hotmail.com)

Objectives: To know the use of do not resuscitate (DNR) and priority comfort orders. To analyse measures taken with these orders and the treatment at the moment of the decease. To compare the results depending on the functional previous situation and the existence or not of oncological disease. **Methods:** Descriptive study through revision of medical histories from patients deceased in our service, in Acute and Mean-Stay Units, along 2005. Medical evolution sheets, nursing comments and the last treatment prescribed were revised. **Results:** During 2005, 142 patients died, fulfilling criteria of incorporation 122. Mean age 86,83 years. Women 62,4%. Before admission 74 (60%) were totally dependent, 76 (62%) had physical disability, and 59 (48%) had psychic disability. DNR orders were specified in 82,5%, in major proportion in patients with psychic moderate-severe psychic disability (p<0.05). Priority comfort orders were specified in 77,2%. Blood determination were realized to 41 patients with priority comfort order, new venous catheter was placed to 31 of these patients, glycaemia capillary was controlled tin 22, and hemocultures were extracted to 7. Mean number of drugs the patients were on at the time of death was 6,2. Patients with moderate severe psychic disability and patients with advanced cancer, received less number of drugs (p<0,05 in both cases), because they received less drugs with curative intention (p<0,05 in both cases). **Conclusions:** Most patients deceased had DNR and priority comfort orders given. On the other hand, in many cases intense diagnostic and therapy activity goes on, persisting actions which damage patients comfort, and keeping medical treatment in spite of their terminal situation. This takes place in lower grade in patients' mild-severe cognitive deterioration and in patients with oncological advanced disease. We must analyse the clinic situation of each patient, in order to define the care plan and the limits of life-sustaining treatments.

409. AN ALTERNATIVE PER OS DOUBLE CONTRAST EXAMINA-

TION OF THE COLON IN ELDERLY PATIENTS

P.J. Papadaki¹, G.M. Zavras¹, S.K. Stathopoulou¹, E. Drakonaki¹, A.N. Dimitrakopoulos² (¹KAT General Hospital, Athens, Greece; ²Medical School, University of Athens, Eginition Hospital, Athens, Greece; rstathop@in.gr)

Aim: The double contrast technique of barium enema may be unsatisfactory in patients with poor sphincter control and especially in those elderly patients who have difficulty in retaining the barium enema despite the use of special catheters and ballons. We describe an alternative per os double contrast method in the evaluation of colonic pathology. **Materials and methods:** The modified per os double contrast examination of the colon was used in 62 elderly patients in whom conventional barium enema had been unsuccessful. We created endogenous gas generation instead of air insufflation by per os administration of a special mixture containing 500 gr of barium sulfate, 80 ml of lactulose syrup, 10 ml of gastrographin and 110 ml of tap water. Good quality double contrast images of the colon were obtained after 12 hours in 59 of the 62 patients. The examination failed in 3 patients because they developed diarrhoea. **Results:** The specificity of the method was 100% in 6 patients suffering from carcinoma and in 15 patients suffering from diverticular disease. However, the method failed to demonstrate small solitary polyps in 5 patients and it was also negative in another 27 patients. 7 of these had negative endoscopy and in the remaining a definitive diagnosis was not established by any other method. **Conclusion:** It seems that this modified per os double contrast examination method may become an alternative for the investigation of colonic pathology in the elderly patients with difficulty in retaining the barium enema.

410. FACTORS INFLUENCING PURPLE URINE BAG SYNDROME IN GERIATRIC WARDS

H.D. Park¹, J.H. Lee², K.Y. Lee² (¹Jangyu Hospital, Gimhae, Korea; ²College of Medicine, Hanyang University, Korea; hdpark@hanafos.com)

Backgrounds: The purple urine bag syndrome (PUBS) is characterized by discoloration of urine bag and indwelling catheter, not urine. This syndrome is mainly occurred in chronic catheterized patient in constipated women with urinary tract infection. Main mechanism of discoloration is that indoxyl phosphatase (IP)/sulfatase (IS) of certain bacteria converts indican to indigo and this substance develops purple coloration of urine bag. But, the main factors influencing PUBS have not been well categorized. To find the clinical and laboratory factors influencing PUBS, we conducted a case-control study of PUBS patient in geriatric wards. **Methods:** We conducted a case-control study of PUBS patient in geriatric wards and reviewed previous studies and data. A clinical evaluation of twenty patients who revealed of PUBS from June 2006 to January 2007 was done. We evaluated also the clinical features, laboratory findings and bacteriological studies of all patients. **Results:** In female, constipation condition, bed-ridden cases and chronic catheterization states, PUBS was highly developed. In laboratory findings, Urine alkalization, certain bacteria (*Providencia stuartii*, *Proteus mirabilis*, *Morganella morganii*, *Klebsiella pneumoniae*, *Escherichia coli*, *Pseudomonas aeruginosa*) and high bacterial counts (>100,000 colony forming units (CFU)/mL in urine) were strongly related with PUBS. And in urine alkali-

zation, urease-positive bacteria are also important factor in PUBS. These laboratory findings can be explained by that bacteria which have IP/IS activity can facilitate PUBS in combined with urease-positive bacteria and high bacterial counts. This phenomenon may be derived from strong alkalization of urine by urease-positive bacteria and high bacterial counts facilitate indigo production. **Conclusions:** We conclude that PUBS can be easily developed in higher IP/IS-producing bacterial counts with urine alkalization produced by urease-positive bacteria or other condition. And the other factors (female, constipation, chronically catheterization and bed-ridden state) also facilitate PUBS as environmental and anatomical causes.

411. INFLUENCE OF GERIATRIC INPATIENTS' DELIRIUM ON THREE MONTHS' MORTALITY

N. Parra¹, N. Bayarri², O. Contreras², M. Gracia², A. Graells², A. Haro², M. de la Rosa², J. Sole², A. Lozano³, D. Sort³, F. Rosell¹ (¹Hospital Universitari Sagrat Cor; ²University of Barcelona; ³Hospital Universitari Sagrat Cor, Hospital at Home Unit, Barcelona, Spain; nuriaparramacias@yahoo.es)

Objective: Delirium has been found to be a significant predictor of postdischarge long-term mortality. This study aimed to evaluate the influence of geriatric inpatients' delirium on short-term postdischarge. **Methods:** A prospective cohort study on 235 geriatric inpatients admitted to the Internal Medicine Department, Hospital at Home Unit or Orthopaedic Surgery and Traumatology Department of our University Hospital during the first quarter of 2006 has been undertaken. At admission, information on clinical variables was collected. Baseline-measurements included data about functional, emotional, cognitive and socio-economical status, as well as scores for severity of chronic and acute illness through an accorded protocol for complete geriatric assessment. Likewise, the presence of delirium was screened by means of an adaptation of the Confusion Assessment Method. Patients developing delirium during the first 48 hours after admission and those who died during hospitalization were excluded. After discharge patients were followed up for three months. Special attention to those presenting delirium during admission was paid. Mortality was considered the endpoint. Measurements of association and comparisons were performed. Logistic regression was used as a multivariate analysis. Statistics were performed by using SPSS 12.0. **Results:** During admission 28 patients developed delirium (11.9%) and 19 (8%) died during the following three months. Odds ratio for geriatric inpatients' delirium and three months' mortality was 2.64 (CI 95% 1.03–6.77), although no significant relationship was found. When considering other explanatory variables (age, basal functional status, basal acute and chronic morbidity and basal cognitive and emotive status) as predicting factors influencing on three months' mortality, chronic morbidity [exp(b)=1.34 (CI 95% 1.13–1.89), (p<0.05)] was the only one identified by logistic regression equation. **Conclusions:** Although delirium has been found to be a significant predictor of postdischarge long-term mortality, it cannot be considered as a marker for increased mortality among geriatric inpatients during the 3 months after hospital admission. However, chronic morbidity on admission is a particularly important prognostic factor.

412. PHYSIOPATHOLOGY OF SENILE OSTEOPOROSIS

G. Passeri, R. Delsignore, G. Macaluso, C. Galli
(University of Parma, Italy; giovanni.passeri@unipr.it)

Considering the fast increase of life expectancy worldwide and in particular in the developing countries, the maintenance of self-sufficiency is of extreme importance in the elderly. It is true that prevention of bone fragility fractures is of pivotal importance at any age, but this is even more important in the elderly, since a fracture, especially of the hip or at the spine, often means the permanent loss of walking ability, and of self-sufficiency. Elderly subjects are at risk of fractures for several reasons: falls are of primary importance, but a relevant role is also played by loss of bone mass with subsequent reduction of bone strength, leading to osteoporosis. Senile osteoporosis, is associated, at least in part, with the normal aging process and is present both in males and females after the age of 65 years. Normal aging is associated with a progressive decline in the supply of osteoblasts and a decrease in their activity, but also with an relative increase in osteoclast activity. Some changes characterizing aging at the cellular level, are due to a reduced numbers of fully functional cells, accompanied by impaired matrix production, cellular composition, bone microenvironments, and altered responses to the environment. Age-related changes in bone quality as well as the importance of cytokine network in the elderly are able to explain the significant increase in osteoporotic fracture. Among these factors some age related changes in the OPG/RANK-L system have been suggested. In the elderly, bone resorption often prevails over bone formation, causing bone loss and skeletal fragility and fractures. Hormonal status, and in particular parathyroid hormone (PTH) and vitamin D presents some peculiar aspects during senescence, together with an insufficient dietary intake of calcium, low physical activity, systemic diseases and medical treatments affecting bone (i.e. glucocorticoids or diuretics), that are all co-morbidity factors.

413. END OF LIFE: ATTITUDES AND TREATMENT IN DIFFERENT HEALTH CARE SETTINGS, CLINICAL ASPECTS

S. Pautex (University Hospital Geneva;
sophie.pautex@hcuge.ch)

Optimal palliative care for older adults involves treating the primary disease process (advanced heart failure), managing their multiple chronic medical conditions and co morbidities (diabetes mellitus, arthritis) and geriatric syndromes (cognitive impairment, frailty), assessing and treating the physical and psychological symptom distress associated and treatment plans in the setting of an unpredictable prognosis. Older adults often make multiple transitions across care settings (home, hospital, rehabilitation, long-term care), especially in the last months of life. Care plans and patient goals must be maintained from one setting to another. Older adults die in acute care hospital, nursing home, hospices and at home. Different studies have demonstrated some deficiencies in the care of elderly dying, in particular the high rates of uncontrolled symptoms, poor communication, inadequate use of advance directives and unwanted medical interventions, like life support or artificial nutrition. The medical futility, defined as clinical actions serving no useful purpose in attaining specified goal for a given patient should be avoided as far as pos-

sible, in particular in acute care hospital. Some hospitals have implemented some «palliative clinical» pathway into day-to-day unit practice to improve palliative care for inpatients. These clinical pathways promote significant improvements in patient outcome. But some important challenges remain like the feasibility of the pathway in day to day busy clinical practice and the acceptance of significant culture changes. Furthermore hospice and palliative care providers must extend their services to non cancer patients and transfer their knowledge and skills to all the different settings. Managing older end-of-life patient at home requires not only an accurate assessment of the patient and his or her illness, concomitant physical and psychological symptoms, and support network but also an assessment of the patient's home. This may require an occupational therapist or physiotherapist to advise on the need for aids and, if necessary, modifications to the home. Nevertheless end of life care, even of patients with terminal dementia can be provided at home with effective symptom control and psychiatric care. Hospice and palliative care providers differ a lot across countries, but they are often not used effectively in particular in non cancer elderly patients. Similar to the barriers that exist for hospice enrolment in the community in general, barriers exist to long term facility or nursing home as well. Providing high quality geriatric and palliative care for older adults requires time, effort, regular communication, discussions about goals of care across all the different settings or health care systems.

414. RELATIONSHIPS BETWEEN CORTISOL, MUSCLE MASS AND MUSCLE STRENGTH IN OLDER PERSONS

G.M.E.E. Peeters¹, N.M. Schoor van¹, M. Visser², D.L. Knol³, E.M.W. Eekhoff³, P. Lips³ (¹VU University Medical Center, EMGO Institute; ²VU University, Dept. of Nutrition and Health; ³VU University Medical Center, Amsterdam, the Netherlands; g.peeters@vumc.nl)

Objective. Cortisol levels increase with age and hypercortisolism is associated with muscle weakness. A previous study showed that high levels of cortisol were negatively associated with physical performance in older persons. This study examines the relationship between cortisol, muscle mass and muscle strength in older persons. *Design/Patients.* The study was conducted within the Longitudinal Aging Study Amsterdam (LASA), an ongoing cohort study in a population-based sample of healthy older persons in The Netherlands. Data from the second (1995/1996) and fourth (2001/2002) cycle were used containing 1197 (65-88 yr) and 971 (65-94 yr) men and women, respectively. *Measurements.* Appendicular skeletal muscle mass (ASMM) was assessed using dual-energy x-ray absorptiometry. Leg extension strength was measured using a hand held dynamometer (MicroFET), and grip strength was measured using a strain-gauged dynamometer. Regression analysis (stratified for sex, adjusted for age, body mass index, height, waist circumference, alcohol use, smoking, physical activity, region, depression, mini-mental state examination, creatinine, 25-hydroxyvitamin D, a1-antichymotrypsin (ACT) and albumin) was conducted to examine the cross-sectional relationship between cortisol and the outcome measures. *Results.* Women with higher serum total cortisol had 5% lower ASMM (b=-856 in the highest versus the lowest quartile, SE=309, p=0.006).

Men with higher evening salivary cortisol had lower grip strength ($b=-2.15$ in the highest versus the lowest quartile, $SE=1.04$, $p=0.04$). No relationships were found between cortisol and leg extension strength. *Conclusion.* High levels of cortisol are negatively associated with muscle mass in older women. There is a trend towards a negative association between cortisol and grip strength in older men.

415. AGEING AND TUMOUR: ANALYSIS OF THE IMMUNE SYSTEM OF THE OLD POPULATION

L. Pelucchi¹, A. Ceretti¹, S. Terrevazzi¹, F. Scaglione², L. Re³ (¹Assisted Sanitary Residence R.S.A. «S. Pertini» — ASL PROV. di MILANO n° 1 — Garbagnate Milanese (MI); ²University of the Studies of Milan; ³Hospital »G. Salvini», Garbagnate Milanese (MI); dottlorispelucchi@hotmail.com)

The old population is hit from neoplastic and infectious diseases more frequently of the young people and such pathologies can be correlated to the work decline of the immune system. The study has been proposed to estimate the existence of a quantitative alteration of the under populations of lymphocytes; to such scope we have analyzed 95 ultra-seventy-years ago patients sheltered near the R.S.A. «S. Pertini» of the A.S.L. Provincia of Milan n° 1. From the total number 36 old subjects are suffering from tumours in advanced phase, while 59 persons (control group) have been selected in agreement with «Senior Protocol» approved of «Eurage». The medium age is of 82.83 ± 8.2 for the neoplastic patients, while 87.89 ± 4.53 for the control group. AntiCD3 monoclonal antibodies (T-lymphocytes), antiCD2 (B-lymphocytes), antiCD4 (suppressor/cytotoxic T- lymphocytes) and antiCD16 (Natural Killer) have been used (table).

		Oncologic (n. 36)	Control (n. 59)
W.C.		8530.55±3080.61	8133.99±2193.37
Tot Lymph.	n.	2200.66±1480.10	1823.91±941.85
	%	27.71±18.24	23.64±11.68
CD 20	n.	202.62±286.65	141.64±116.67
	%	8.25±5.19	7.67±5.34
CD 3	n.	1467.72±1209.06	1139.74±664.91
	%	64.72±13.60	62.96±12.61
CD 4	n.	810.86±773.57	678.88±366.31
	%	35.38±12.39	51.91±73.02
CD 8	n.	938.38±1208.36	568.15±639.44
	%	29.19±12.40	30.83±35.55
CD 16	n.	326.82±246.35	391.53±345.91
	%	17.82±10.81	19.65±10.16
CD 4\CD 8		1.51±0.96	1.74±1.35

The emerged data in our job do not show statistically meaningful differences for oncologic old patients and for control group, even if the first show one tendency to the reduction of the percentage of the circulating CD4 ($35,38\pm 12,39$ against $51,91\pm 73,02$). This value makes to think that the responsible alterations of the reduced antineoplastic immuno-surveillance are from leading back rather to work aspects of the T-lymphocytes.

416. THE NEED FOR ESTABLISHING REFERENCE INDICATORS OF HEMATOLOGICAL, BIOCHEMICAL AND IMMUNOLOGICAL DETERMINATIONS FOR ELDERLY PEOPLE

C.M. Pena, I. Dumitrescu, I. Raducanu (*Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; penacata@yahoo.com*)

Taking into account the fact that the number of elderly people has dramatically increased over the past years, there is a strong need for establishing reference indicators for this category of the population in the case of hematological, biochemical and lymphocytes subsections, both for identifying specific ailments and for subsequent treatment. For the selection of subjects we have used the biochemical and clinical criteria of the Senieur protocol, as proposed by Ligthart in 1984 — protocol that is used in the immunosenescence studies, helping us to avoid the confusions between ageing and diseases associated with age. We have added supplementary criteria to those mentioned above in such a manner that only healthy subjects were selected, from an immunologic point of view and without degenerative neuro-psychic diseases that could have hampered the cooperation during the study. An observation sheet was filled for each selected subject in order to be included in the study groups. The subjects have been selected among those present in the clinical sections of the National Institute of Gerontology and Geriatrics «Ana Aslan». All the values have been presented as an arithmetic mean +/- the standard deviation. The differences obtained between the arithmetic means were analyzed through the «t» Student test — using the Microsoft Excel software. «P» values smaller than 0.005 have been considered as statistically relevant. The results were represented through graphics, using the same software. The results we obtained have partially confirmed reference values from other studies; however they indicated a value drop in the case of haemoglobin, haematocrit as well as the sedimentation speed of red blood cells in the case of elderly women. In the case of biochemical determinations, we registered higher values for healthy old subjects in the following tests: glycemia, total cholesterol, triglycerides, HDL and LDL cholesterol fractions in the case of adults. These higher values were not registered in the case of total proteins, calcemia and magnesaemia. The values (within the normal limits) of some of the humoral immunity are, in general, lower in the case of elderly people as compared to the sample group, with the exception of the G type immunoglobulins, which are higher for the old subjects suffering of systemic atherosclerosis. The results of subsets of lymphocytes for healthy old subjects did not coincide with those from other studies since there is no established standard procedure for such determinations. Hence, in the future, more vertical studies of the elderly populations are needed in order to set reference values for ageing persons.

417. CHARACTERISTICS IN PATIENTS EVALUATED BY AN INTERDISCIPLINARY FUNCTIONAL TEAM SPECIALIZED IN GERIATRICS ON DIFFERENT SETTINGS

M. Pi-Figueras¹, I. Pineda¹, E. Hernandez¹, A.M. Cervera², O. Sabartes¹ (¹Servicio de Geriatria del IMAS. Hospital del Mar. Instituto de Atenciyn Geriatrica y Sociosanitaria (IAGS); ²Servicio de Geriatria del IMAS. Hospital del Mar. Centro Forum. Hospital de la Esperanza. Instituto de Atenciyn Geriatrica y Sociosanitaria (IAGS); 93607@imas.imim.es)

Aim: To analyse the functional status, cognitive status, pressure ulcers risk (PUR) and social situation on the different settings (previous admission, acute care hospital

(AH), intermediate care (IC)). *Methods:* Patients evaluated by an interdisciplinary functional team specialized in geriatrics in a retrospective study during 2006. The parameters analysed included: sex, age, interconsultant clinical department, diagnostic categories, functional status measured by Barthel index (previous (PB), acute care (AB), discharge from IC (DB)) and Lawton index, cognitive status measured by shortened Mini-mental (Folstein) score and PUR measured by Norton scale. Social data evaluated were: marital status, the coexistents, architectural barriers at home, previous contact to Social department (SD), coordinating and/or guiding to SD, destination after IC discharge. *Results:* 245 patients were analysed. Mean age was 77.3 ± 11.7 , 61.2% were women and 38.8% men. Interconsultant clinical departments were: Traumatology 41.2%, Neurology 14.3%, Vascular 8.6%, acute care in the elderly 8.2%, Surgery 7.3%, Internal medicine 7.3% and others 12.9%. Diagnostic categories were: fractures/orthopaedics 43.7%, neurologic 14.3%, vascular 9%, infections 8.6%, respiratory 6.9% and others 17.5%. Statistical differences were found between PB 83.3 ± 20.1 and DB 71.2 ± 29.4 ($p < 0.01$), and between AB 22.8 ± 17.5 and DB ($p < 0.0001$). Patients were previously independent for the activities of daily living (84.5%) and without previous cognitive impairment (77.6%). Pressure ulcers risk in AH and at IC discharge were significantly different ($p < 0.0001$). The social data's description was: widower 35.8%, married 35.1%. The coexistents was: partner 34.7%, alone 34.3%. There were architectural barriers at home in 43.3%. There wasn't previous contact to SD, coordinating 50.2% patients from hospital. Most prevalent destination at discharge from IC were: home 62.4%, death 13.1%, admission to long term care 11.4%, nursing home 4.9% and still at IC 5.7%. *Conclusions:* 1. Functional status differences were found in the different clinical settings. 2. Most patients were functionally independent and without cognitive impairment previous to admission. 3. Low PUR was found on the different settings. 4. In IC most patients were discharged at home.

418. DEMENTIA IN AN OUTPATIENT GERIATRIC DEPARTMENT

M. Pi-Figueras, O. Sabartes, I. Pineda, E. Hernondez, A.M. Cervera, M. Garreta (*Geriatric Acute Care Unit, Hospital del Mar, Institut d'Atencio Geriatrica i Sociosanitaria (IAGS), Institut Municipal d'Assistencia Sanitaria (IMAS), Barcelona, Spain; 93607@imas.imim.es*)

Aim: To analyze characteristics of geriatric outpatient with dementia. *Methods:* analyze retrospective dementia in the outpatients geriatric department. The characteristics evaluated were: age; sex; environment; social data: marital status, the coexistence, nursing type, and social risk measured by shortened Gijón score (SGS), mental status: MiniMental Folstein (MMSE), type of dementia and specific treatment cholinesterase inhibitors; functional status measured by Barthel Index (BI) and Lawton Index (LI) and the comorbidity associated by Charlson Index (ICh), global numbers of medicines, and antecedents of hypertension (HTA), diabetes (DM), hypercholesterolaemia (CH), cardiac disease (CD), pulmonary obstructive chronic disease (POD) and neoplastic. *Results:* 60 patients were analyzed, 81.67% women and 18.33% men. Mean age was 82.22 ± 5.5 . The 41.67% were married, 41.67% widower, 10.63% single. The 10% lived alone with supervision, 35% with partner, 26.67% by progenitor, 21.6% in nurs-

ing home, 1.67% rotatory and 5% others. Mean previous IB was 65.4 ± 25.1 , IL 1.75 ± 2.3 and mean MMSE score was 17.68 ± 5.2 . Main types of dementia were: 40% Alzheimer's disease, 15% vascular dementia, 26.67% mixed dementia. Attending to cholinesterase inhibitors: 6.67% donezepil, 48.3% galantamine, 5% rivastigmine, 1.67% memantine, 38.33% mixed treatment and 58.33% with neuroleptic. Polipharmacy 56(93.33%). Mean ICh was 1.83 ± 1.1 . Regarding to antecedents and vascular risk factors: 53.33% HTA, 28.33% DM, 31.67% CH, 20% CD, 35% POD and 10% with neoplasia. Among patients analyzed by Global Dementia Staging (GDS), GDS 4-5 (71.6%) had more prevalence than GDS 6-7 (18.3%) ($p < 0.001$). Patients with dementia moderate-severe (GDS 4-5) had a good correlation with high age, polipharmacy and institutionalization risk (SGS) ($r = 0.9$ $p < 0.001$). *Conclusions.* 1. Geriatric outpatients needed from a nursemaid. 2. Patients had high comorbidity associated to the worse GDS stage. 3. Vascular risk factors, polipharmacy, and worse previous functional status were frequently associated. 4. Moderate-severe dementia presented high social risk of institutionalization. 5. Most dementias were moderate-severe GDS 4-5.

419. BUILDING AN UNIQUE STUDY ON HEALTHY AGEING: THE DOETINCHEM COHORT STUDY

H.S.J. Picavet, H.A. Smit, W.M.M. Verschuren
(*National Institute of Public health and the Environment, The Netherlands; susan.picavet@rivm.nl*)

Health at old age is the result of the lifelong exposure to and interplay of genetics, lifestyle factors, biological risk factors and environmental factors. In order to study determinants of healthy ageing, cohort studies are needed with the following characteristics: 1. large and representative, 2. inclusion from a relative young age, 3. long term follow-up measurements, 4. measurements on all relevant parameters: life style (e.g. diet, physical activity), risk factors (e.g. obesity, blood pressure, cholesterol), disability, chronic diseases, and health care use. The Doetinchem Cohort Study presents 20 years of data collection among a population cohort of originally 20-59 years of age, and is becoming a unique source for scientists to study the determinants of old age. The study started in 1987-1991 and every 5 years participants were measured, with the current fourth round of measurements ending this year (2007) with full measurement of 5000 participants. A fifth round (2008-2012) is planned and will include additional measurements related to old age. At the congress a complete overview will be given on the Doetinchem Cohort Study, its challenges and its future perspectives.

420. COMPREHENSIVE GERIATRIC ASSESSMENT IN THE OLDER PATIENT WITH METABOLIC SYNDROME

A. Pilotto (*San Giovanni Rotondo, Italy; alberto.pilotto@operapadrepio.it*)

A comprehensive geriatric assessment is particularly important in managing older patients with chronic disorders, since these patients are likely to have multiple interacting problems that interfere with their daily function and complicate their treatments. Due to the multidimensional impairment of the elderly patient, the clinical geriatric approach to the patient with metabolic syndrome includes a comprehensive geriatric assessment focused on identifying functional problems and disabilities of patients. Data from hospitalized patients with diabetes ($n = 440$, mean

age=76.3±6.4 years, F=240, M=200), obesity (n=318, mean age=75.6±6.1 years, F=203, M=115) and/or hypertension (n=680, mean age=77.6±6.4 years, F=365, M=315) demonstrated a high prevalence of dysfunctions in the ADL and IADL (diabetes: disability in ADL=47.3% and IADL=69.8%; obesity: disability in ADL=36.7% and IADL=57.7%; hypertension: disability in ADL=34.2% and IADL=59.1%) and/or in cognitive functions (SPMSQ>3: diabetes=27%, obesity: 19.6%, hypertension=18.2%) and risk of depression (GDS-SG>2: diabetes=39.5%, obesity=42.7%, hypertension=37.5%). From data of a CGA it was possible to obtain a multidimensional prognostic index (MPI) in older patients hospitalized that was significantly associated with a high risk of 2-year mortality. The application of the MPI in subjects with diabetes, obesity liver failure and hypertension has documented that higher MPI grades were significantly associated with progressively higher mortality: diabetes MPI1=13.9%, MPI2=38.1%, MPI3=45.7%; obesity: MPI1=9.0%, MPI2=26.5%, MPI3=72.7%; hypertension: MPI1=9.8%, MPI2=23.1%, MPI3=37.1%. Adjusting for age and sex, the prognostic efficacy of MPI for defining the risk of mortality was confirmed diabetes: OR=2.16, 95% CI 1.46–3.23, p=0.0001; obesity: OR=4.37, 95% CI 2.27–8.39, p=0.0001; hypertension: OR=2.14, 95% CI 1.42–3.23, p=0.0001.

421. MANAGEMENT OF THE ACID-RELATED DISORDERS IN THE ELDERLY

A. Pilotto (San Giovanni Rotondo, Italy; alberto.pilotto@operapadrepio.it)

Epidemiological studies suggest that, in subjects aged 65 years and over, GI disorders are the third cause of consultation by primary care general practitioners (GP), the diseases of the esophagus and the stomach representing over 40% of the total GI disorders. The prevalence of gastro-esophageal reflux disease (GERD) increases with advancing age. Proton pump inhibitors (PPI) resulted more effective than H₂-blockers in healing esophagitis as well as reducing the long-term relapses of GERD in elderly patients. Roughly 50 to 70% of gastric and duodenal ulcers are associated with the infection of H pylori in the elderly. The cure of H pylori infection in elderly peptic ulcer patients significantly improve symptoms and reduce the relapse rates of peptic ulcer. One week PPI-based triple therapies are effective and safety in the elderly; however caution need to be observed as regards the dosages of drugs, i.e. PPI and clarithromycin. Almost 40% of gastric and 25% of duodenal ulcers of elderly patients are associated with NSAID and/or aspirin use; the risk is high both in acute and in chronic NSAID users. The strategies to reduce the risk of gastroduodenal damage due to NSAID and/or aspirin in the elderly include: reduce the dosages of NSAID, use the less damaging NSAID, gastroprotection with PPI, eradication of H pylori infection and educational programs addressed to patients, their relatives and/or care givers, nurses and physicians.

422. ALL PATIENT REFINED-DIAGNOSIS RELATED GROUPS (APR-DRG) IS BETTER THAN MEDICARE-DIAGNOSIS RELATED GROUPS (MC-DRG) IN EVALUATING MULTIDIMENSIONAL IMPAIRMENT OF HOSPITALIZED ELDERLY PATIENTS: A MULTICENTRE, PROSPECTIVE STUDY

A. Pilotto¹, A. Greco¹, L. Lorenzoni², M. Franceschi¹, F. Rengo³, R. Bernabei⁴, and Firi-Sigg Study Group⁵

¹Casa Sollievo della Sofferenza, IRCCS, San Giovanni Rotondo (Foggia); ²M Health Information System, Milan; ³University «Federico II», Napoli; ⁴Universita Cattolica del Sacro Cuore, Rome; ⁵FIRI (Fondazione Italiana per la Ricerca sull'Invecchiamento) and SIGG (Societa Italiana di Gerontologia e Geriatria), Italy; alberto.pilotto@libero.it

Background. Health resource consumption in hospitalized elderly patients is related to a multidimensional impairment of the subject. Preliminary results have shown that All Patient Refined-Diagnostic Related Groups (APR-DRG) are good predictors of the multidimensional impairment in elderly hospitalized patients. **Aims:** 1) to confirm in a large multicentre study whether APR-DRG system is significantly associated with multidimensional impairment of elderly inpatients; 2) to compare APR-DRG system as predictor of resource consumption with the actually world-wide running DRG system, i.e. Medicare Diagnosis Related Groups (MC-DRG). **Materials and Methods.** The Discharge Abstract (DA) of elderly patients discharged from 20 Geriatric acute wards in Italy were grouped by the MC-DRG version 19 and by the APR-DRG grouper version 20. A Comprehensive Geriatric Assessment (CGA) was performed by using the Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), Short Portable Mental Status Questionnaire (SPMSQ), Comorbidity Index Rating Scale (CIRS) and Mini Nutritional Assessment (MNA). Number of drugs prescribed at discharge (DPD) and the length of stay (LOS) were also recorded. MC-DRG and APR-DRG relative weights (RW) were computed in order to compare patients with the same clinical severity grouped at different APR-DRG. All patients were divided into three subgroups according to the cut off suggested by APR-DRG RW quartiles distribution. **Results.** 1197 (526 males, 671 females, mean age 81.2±7.3 years, range=65–101 years) patients were included in the study. The most frequent diseases ranked by APR-DRG were: heart failure (APR-DRG=194, patients=146, 12.2%), chronic obstructive pulmonary disease (APR-DRG=140, patients=103, 8.6%), respiratory failure (APR-DRG=133, patients=49, 4.1%), degenerative central nervous system diseases (APR-DRG=42, patients=47, 3.9%), transitory ischemic attack (APR-DRG=47, patients=41, 3.4%), pneumonia, (APR-DRG=139, patients=41, 3.4%). A significant differences in functional impairment (ADL p<0.001, IADL p<0.001), cognitive impairment (SPMSQ p<0.05), comorbidity (CIRS p<0.0001), malnutrition (MNA p<0.001), depression (GDS p<0.001), number of drug prescriptions (p<0.05) and LOS (p<0.0001) between the three APR-DRG RW subgroups were observed. Multivariable analysis demonstrated that APR-DRG RW was significantly associated with ADL (p<0.01), IADL (p<0.01), SPMSQ (p<0.001) and LOS while MC-RW was not associated with any of the CGA items as well as the number of prescribed drugs and LOS. **Conclusions.** APR-DRG is an administrative tool able to evaluate multidimensional impairment of elderly hospitalized patients significantly better than MC-DRG.

423. VALIDATION OF A NEW QUESTIONNAIRE FOR THE EVALUATION OF UPPER GASTROINTESTINAL SYMPTOMS IN THE ELDERLY (UGISQUE)

A. Pilotto¹, S. Maggi², G.C. Parisi³, M. Franceschi¹, M. Noale², G. Crepaldi² ¹IRCCS «Casa Sollievo della

Sofferenza», San Giovanni Rotondo (FG), Italy; ²Aging Section, National Research Council, Padova, Italy; ³Abano Terme, General Hospital, Padova, Italy; alberto.pilotto@libero.it)

Introduction: Questionnaires are widely used instruments to evaluate gastrointestinal (GI) symptoms. None of these questionnaires, however, has been yet validated in elderly subjects. **Aim:** To test feasibility, reliability and validity of a questionnaire exploring Upper Gastrointestinal Symptoms in Elderly patients (UGISQUE) as compared to endoscopic diagnoses in older subjects. **Materials and Methods.** We studied 206 consecutive symptomatic subjects over 60 years of age (M=89, F=117, mean age=76.2 years, range=62–96 years) who underwent an upper GI endoscopy. In all patients a questionnaire to evaluate symptoms of upper GI disease was administered. The questionnaire was created on the basis of literature data and clinical experiences. The Questionnaire included a total of 15 items divided into five symptom clusters: A) abdominal pain syndrome: 1) stomach ache or pain; 2) hunger pains in the stomach; B) reflux syndrome: 3) heartburn; 4) acid reflux; C) indigestion syndrome: 5) nausea; 6) rumbling in the stomach, 7) bloated stomach, 8) burping; D) upper GI bleeding: 9) haematemesis, 10) melena, 11) anaemia, i.e. a loss of ≥ 3 g. of haemoglobin during the last 3 months; E) non-specific symptoms: 12) anorexia; 13) weight loss; 14) vomiting; 15) dysphagia. Statistical analysis was performed by means of exact Fisher test, binomial logistic regression and K index to assess sensitivity, specificity and the strength of agreement with endoscopic diagnoses. **Results:** At baseline endoscopy 32 patients were affected by esophagitis (ESO), 54 patients by peptic ulcer (PU), 51 patients by erosive gastritis (EG) and 69 patients had not organic lesions (NLO). In patients with ESO, a significant association with abdominal pain syndrome ($p=0.002$), reflux syndrome ($p<0.0001$), indigestion syndrome ($p=0.0004$) and non-specific symptoms ($p<0.0001$) was observed; in patients with PU, a significant association with abdominal pain syndrome ($p=0.02$), upper GI bleeding ($p<0.0001$) and non-specific symptoms ($p<0.0001$) was observed; in patients with EG, a significant association with abdominal pain syndrome ($p=0.02$), and non-specific symptoms ($p=0.004$) was observed. By logistic regression analysis, a significant association was found between ESO and abdominal pain syndrome (OR=6.9, 95% CI=2.0–23.8), reflux syndrome (OR=15.3, 95% CI=3.2–72.4) and non-specific symptoms (OR=12.2, 95% CI=3.3–45.1) and between PU and abdominal pain syndrome (OR=18.8, 95% CI=4.0–88.2), upper GI bleeding (OR=50.3, 95% CI=9.8–259.0) and non-specific symptoms (OR=28.1, 95% CI=5.8–135.4). Using a p threshold value=0.50, the statistical model correctly identified 76.2% of subjects with ESO (sensitivity=37.5%, specificity=94.2%), 69.9% of patients with PU (sensitivity=63%, specificity=75.4%) and 65.8% of patients with EG (sensitivity=84.3%, specificity=52.2%). **Conclusion:** UGISQUE is a feasible and reliable instrument for evaluating upper GI symptoms in the elderly, particularly useful in patients with esophagitis and peptic ulcer disease.

424. PHYSICAL ACTIVITY AND RISK OF INCIDENT MILD COGNITIVE IMPAIRMENT IN AN ITALIAN ELDERLY COHORT

N. Pisacane, P. Forti, A. Lucicesare, E. Rietti, F. Montesi, D. Cucinotta, G. Ravaglia (University Hospital S. Orsola-

Malpighi, 40138 Bologna, Italy; nicolettapisacane@yahoo.it)

Objective: to study the influence of physical activity on risk of development of mild cognitive impairment (MCI). **Methods:** The authors examined the relationship between basal level of physical activity and risk of MCI in a prospective cohort of 569 community-residing subjects aged 65 years and older, initially free of dementia and mild cognitive impairment (MCI) using logistic regression analysis adjusted for age, sex, education, apolipoprotein E genotype, baseline Mini Mental State Examination (MMSE) score, body mass index (BMI), serum cholesterol, hyperhomocysteinemia (defined as plasma total homocysteine >15 $\mu\text{mol/L}$), presence of ≥ 1 difficulties in basic (BADL) and instrumental activities of daily living (IADL), and presence of comorbidity. Physical activity was measured using the Paffenbarger Questionnaire, in which trained interviewees asked the subject to report the frequency and duration of their participation per week during the past year in any type of physical activity. The kilocalories (energy) expended per week in walking, climbing stairs, performing vigorous activity (Metabolic Equivalent >6), performing moderate activity (Metabolic Equivalent 3 to 6), and the sum of the kilocalories expended in all the previous listed activities were calculated. MCI, was diagnosed according to international criteria. **Results:** Over an average follow-up of 3.9 ± 0.7 years, 162 subjects had developed MCI. MCI cases were generally less educated and with a lower baseline MMSE than subjects maintaining a normal cognitive function whereas they did not differ in any other possible confounder. No association was found between physical activity and risk of MCI, either at univariate and multivariate logistic analysis. **Conclusions:** In this elderly cohort, physical activity was not associated with risk of developing MCI.

425. ROLE OF THE DEPRESSION ON THE FUNCTIONAL DISABILITY OF THE ELDERLY PATIENTS WITH AND WITHOUT DEMENTIA

G. Placentino, L. Cascavilla, G. D Onofrio, F. Paris, M. Franceschi, D. Seripa, M.G. Matera, A. Pilotto (IRCCS «Casa Sollievo della Sofferenza», San Giovanni Rotondo (FG), Italy; alberto.pilotto@operapadrepio.it)

Introduction. Recent studies have demonstrated that the depression is one important cause of disability in old age. However, it is not still defined if differences between depression and dementia in influencing exist the degree of disability in the elderly patients. **Aim of the study.** To estimate the role of the depression on the degree of disability in elderly patients with and without dementia. **Materials and methods.** This study has evaluated 392 elderly patients (M=170, F=222, mean age=78.08 \pm 7.0 years, range 60–100 years, of which 114 health controls, 28 affected of depression, 76 patients with dementia (Alzheimer, vascular and mixed dementia) and depression and 174 with dementia without depression. The dementia and depression diagnosis has been placed during the admission to hospital or to surgery, by means of appraisal of the clinical history, objective examination, psychometric tests (MMSE e GDS), clinical psychological talk and at least an examination of neuroimaging morphologic (TAC o RMN). For the appraisal of the disability they have been used the scales ADL (Activity Daily Living) and IADL (Instrumental Activity Daily Living). **Results.** A significantly difference is in the ADL

(4.0 ± 1.9 vs 4.6 ± 1.8 , $p=0.003$) that in the IADL (3.2 ± 3.1 vs 4.4 ± 3.0 , $p=0.001$) between the patients with depression versus the patients without depression were found. In patients with dementia a depression state influences the disability only in the IADL (2.3 ± 2.6 vs 2.8 ± 2.6 , $p=0.034$) but not in the ADL (3.8 ± 1.9 vs 4.1 ± 2.0 , $p=0.034$). In patients without cognitive impairment, patients with depression are significantly more disabled than patients without depression both in the ADL (4.8 ± 1.7 vs 5.5 ± 1.1 , $p=0.026$), and IADL (5.8 ± 2.7 vs 6.8 ± 2.9 , $p=0.032$). Regression logistic analysis demonstrated that the depression increased the risk of disability in patients without cognitive impairment (OR=8.0, 95% CI=2.02-31.66, $p=0.003$), but not in patients with dementia (OR=1.12, 95% CI=0.607-2.098, $p=0.702$). *Conclusion.* Depression state is an important factor in increasing the disability in elderly patients without dementia.

426. ENTEROVIRUS AND ACUTE PHASE OF MYOCARDIAL INFARCTION (MI) IN ELDERLY PATIENTS

V.Y. Plotkin, V.L. Varonel, V.F. Pavlovskii, E.A. Murina, Z.A. Zaripova (St. Petersburg State University, Russia; plotkin38@inbox.ru)

The aim was to evaluate a possible role of enterovirus (EV) infections (Coxsackie, ESNO, Entero) in an acute phase of the myocardial infarctions (MI). Detections of the enterovirus antigens (EVA) and relative quantity of EVA were examined in blood of patients suffering from uncomplicated (33 patients) myocardial infarction (MI) and MI patients complicated (60 patients) with pulmonary oedema (16 patients) cardiogenic shock (14 patients) heart rupture (21 patients) arrhythmia (9 patients), and 35 postmortem heart tissues samples of patients dying from cardiogenic shock and/or heart rupture. EVA were detected in blood of 12,8% uncomplicated MI patients and 34,4% complicated MI patients. Relative quantity of EVA were significantly higher in the group of patents complicated with cardiogenic shock and heart rupture ($0,46 \pm 0,13$ units) than in uncomplicated MI patients ($0,32 \pm 0,10$ units) and MI patients complicated with pulmonary oedema ($0,33 \pm 0,07$ units). Relative quantity of EVA in necrosis zones of the heart samples patients dying from cardiogenic shock ($0,65 \pm 0,13$ units) and/or heart rupture ($0,52 \pm 0,14$ units) were significantly higher than relative quantity of EVA in their normal heart tissues ($0,44 \pm 0,08$ и $0,30 \pm 0,10$ units). Thus enterovirus infections can take part in pathogenesis of MI and promote cardiogenic shock and heart rupture in elderly patients

427. THERAPY AND REHABILITATION OF THE ELDERLY PATIENTS WITH OSTEOPOROSIS

V.V. Povoroznyuk (Institute of Gerontology AMS Ukraine, Kiev; roksolan@zeos.net)

Osteoporosis is a skeletal disease characterised by low bone mass and microarchitectural deterioration with resulting increase in bone fragility and hence susceptibility to fracture. The reduced bone density ultimately leads to fractures, the most common sites being the distal radius (Colles' fractures), the thoracic and lumbar vertebrae, and the proximal femur. The fractures, which occur in the spine with no trauma or, in the case of the radius and femur, with less trauma than expected to cause fractures, lead to the principal clinical manifestations of osteoporosis, pain and

deformity. Osteoporosis is widely recognized as a major public health concern. Worldwide, elderly people represent the fastest growing age-group, and the yearly number of fractures is likely to rise substantially with continued ageing of the population. Thus, even if age-adjusted incidence rates for hip fracture remain stable, the estimated number of hip fractures worldwide will rise from 1,7 million in 1990 to 6,3 million in 2050. The ultimate therapeutic goal is to prevent fractures. Primary prevention is obtained by the lifelong maintenance of BMD above the fracture threshold. In this regard, a rational, albeit unproven, preventive program would include lifelong adequate calcium intake, continued physical activity, avoidance of smoking, moderate alcohol intake and hormone replacement therapy. While attempts to prevent further bone loss and conservative measures such as the prevention of falls are clearly indicated, they may not be sufficient to prevent fractures in individuals with established osteoporosis. These patients require agents that will increase BMD to a point above the fracture threshold with normal bone. Exercises or a physical therapy program with an emphasis on impact loading (e.g., walking rather than swimming or passive movement) and upper body exercise (e.g., moderate weightlifting) should be encouraged. Immobilization should be avoided, and when a patient is obligatorily immobilized, an attempt should be made to simulate load bearing as soon as possible in a physical therapy program. Since most fractures happen as a result of falls, attention to reducing the risk of falls seems important. Although no studies are available that show that strategies to reduce the rate of falls will reduce fractures, the use of hip protectors to reduce the impact of falls has proven effective in high-risk individuals, although compliance remains an issue. At a mechanistic level, drugs can be considered in terms of whether they act mainly on bone resorption (antiresorptive agents) or on bone formation (anabolic agents). With this classification, antiresorptive treatments include calcium, vitamin D, hormone therapy, bisphosphonates, selective estrogen-receptor modulators, and calcitonin. Calcium deficiency due to low calcium intake or reduced calcium absorption causes bone loss and is relatively common in geriatric patients. Low vitamin D status has been associated with reduced bone mineral density, high bone turnover, and increased risk of falls and of hip fracture in elderly people, but differences in baseline vitamin D concentrations make comparisons between trials difficult. Even though calcium alone may not increase BMD, it will help prevent further bone loss in such patients. Calcium therapy does not stimulate new bone formation but reduces PTH mediated bone resorption. In osteoporotic patients it is recommended that calcium intake should be increased to 1500 mg per day either by the use of dairy products or by calcium supplements. Two issues are important to the choice of a calcium supplement. First, some reports suggest that calcium citrate may be preferable to calcium carbonate in the elderly, since it may be more readily soluble and thus more bioavailable in the presence of hypochlorhydria or other causes of decreased efficiency of calcium absorption. Second, some commercial calcium preparations do not dissolve rapidly even at low pH, and thus calcium is not available for absorption in the small intestine. Vitamin D and its more active metabolites increase calcium absorption and, like calcium alone, appear to stabilize the skeleton rather than promote an increase in BMD. The major indication for the use of vitamin D in osteoporosis

sis is as replacement in patients with nutritional or drug-induced deficiency of vitamin D. A meta-analysis concluded that vitamin D reduced the risk of hip fracture by 26% and non-vertebral fracture by 23% in a dose-dependent manner in individuals with vitamin D deficiency. Calcitonin has been widely used in the treatment of osteoporosis for relieving back pain caused by the bone resorption, vertebral fractures, and bone deformities. Research shows positive effect of 200 IU of intranasal salmon calcitonin for 28 days on patients with vertebral fractures. There occurred a significant pain decrease in the group using calcitonin and an improvement in the mobility of the patients. During the last two decades, several medications have been granted a marketing authorization, for the management of osteoporosis. Bisphosphonates are the most widely prescribed drugs in this area, worldwide. New developments in this class include intravenous administration of ibandronate or zoledronate, once every three months or once yearly. Selective estrogen-receptor modulators represent a chemically diverse set of compounds that do not have the steroid structure of estrogen, but have a tertiary structure that allows binding to the estrogen receptor to exert selective agonist or antagonist effects on different estrogen target tissues. Raloxifene, a selective estrogen receptor modulator, reduces spine fractures and non-spine fractures in high risk subjects. The peptides from the parathyroid hormone family are potent stimulators of bone formation. Teriparatide (1-34 amino acid fragment of the parathyroid hormone) reduces spine and non-spine fractures. Strontium ranelate is the first medication to uncouple bone formation from bone resorption. It has shown anti-fracture efficacy at all sites in a large number of postmenopausal women. In view of its effectiveness against vertebral and non-spine fractures, strontium ranelate could be an important alternative to bisphosphonates in the treatment of postmenopausal osteoporosis.

428. EVALUATION OF VALIDITY OF IOF'S ONE-MINUTE OSTEOPOROSIS RISK TEST FOR POSTMENOPAUSAL WOMEN

V.V. Povoroznyuk, N.I. Dzerovich (Institute of Gerontology AMS Ukraine, Kiev; roksolan@zeos.net)

Background. This research was aimed at proving validity of IOF's One-Minute Osteoporosis Risk Test and evaluating the relation between structural-functional state of bone according to the ultrasound densitometry and results of IOF's One-Minute Osteoporosis Risk Test for postmenopausal women. *Materials and methods.* We've examined 147 postmenopausal women aged 50-69 years (mean age 59,8±0,7). Structural-functional state of bone was evaluated by means of an ultrasound bone densitometer («Achilles+»). The speed of sound (SOS, m/s), broadband ultrasound attenuation (BUA, dB/MHz) and a calculated «Stiffness» index (SI,%), T and Z-range were measured. IOF's One-Minute Osteoporosis Risk Test was translated into Ukrainian. *Results.* Significant correlation was found between positive answer to question 2 («Have you broken a bone after a minor bump or fall?») and SOS (r=-0,17; p=0,042), BUA (r=-0,28; p=0,0005), SI (r=- 0,25; p=0,002), Z- range (r=-0,26; p=0,015); between positive answer to question 3 («Have you taken corticosteroid tablets for more than 3 month») and SOS (r=-0,16; p=0,047), BUA (r=-0,29; p=0,0003), SI (r=-0,21; p<0,000001), and between positive answer

to question 4 («Have you lost more than 3 cm (just over 1 inch) in height?») and the following indexes of structural-functional state of bone: SOS (r=-0,32; p<0,00001), BUA (r=-0,27; p=0,00096), SI (r=- 0,36; p<0,000001), Z- range (r=-0,27; p=0,0015). *Conclusion.* Application of IOF's One-Minute Osteoporosis Risk Test gives an opportunity to determine structural-functional changes of bone. Among the test questions, the most reliable and informative as for postmenopausal women proved to be questions 2 («Have you broken a bone after a minor bump or fall»), 3 («Have you taken corticosteroid tablets for more than 3 month») and 4 («Have you lost more than 3 cm (just over 1 inch) in height?»).

429. AGE PECULIARITIES OF BONE LOSS IN WOMEN WITH RHEUMATOID ARTHRITIS

V.V. Povoroznyuk, T.A. Karasevskaya (Institute of Gerontology AMS Ukraine, Kiev; roksolan@zeos.net)

The course of rheumatoid arthritis is aggravated by decrease of mineral bone density parameters connected with bone remodeling disorders because of chronic inflammatory process and receiving glucocorticoids. The research is aimed at studying structural-functional bone tissue state in women with rheumatoid arthritis and determining age peculiarities of bone loss in the course of this disease. 82 women aged 30-69 years with rheumatoid arthritis were examined. BMD was measured by means of X-ray absorptiometry (lumbar spine, femoral neck, forearm and total body). BMD parameters in connection with age are given in the table.

Parameters	30-39 yrs	40-49 yrs	50-59 yrs	60-69 yrs
n	13	25	18	25
Age	31,6±1,4	45,2±2,7	55,1±2,1	67,5±3,2
Weight, kg	67,1±10,8	72,3±15,2	68,8±16,3	67,9±11,1
BMD Total body	1,12±0,01	1,11±0,02	1,04±0,03	0,98±0,02
BMD Radius UD	0,35±0,02	0,37±0,02	0,30±0,03	0,29±0,01
BMD Radius 33%	0,70±0,01	0,69±0,02	0,56±0,04	0,53±0,02
BMD Radius total	0,53±0,02	0,53±0,01	0,43±0,03	0,41±0,02
BMD Hip	1,01±0,03	0,97±0,03	0,87±0,04	0,78±0,04
BMD Spine	1,17±0,03	1,05±0,04	0,99±0,005	0,92±0,03

Conclusions. Age of women with rheumatoid arthritis influences bone loss of lumbar spine, hip bone and total skeleton. BMD decrease of radius must be mainly associated with peculiarities of the disease's course.

430. AGE-DEPENDENT FEATURES OF BONE TISSUE STATE IN MEN

V.V. Povoroznyuk, E.A. Kreslov (Institute of Gerontology AMS Ukraine, Kiev; roksolan@zeos.net)

This research was aimed at studying the age-dependent peculiarities of bone mineral density and bone mineral consent in men. The total of 210 men 20-89 years old (54,6±1,2) were examined and divided into the age-dependen-

Parameters	20–29 yrs	30–39 yrs	40–49 yrs	50–59 yrs	60–69 yrs	70–79 yrs	80–89 yrs
n	20	24	44	38	36	27	21
Age	24,1±0,6	34,7±0,4	44,6±0,5	55,2±0,4	65,6±0,5	75,1±0,5	82,9±0,6
BMD spine	1,19±0,04	1,16±0,04	1,18±0,03	1,15±0,03	1,21±0,05	1,17±0,05	1,30±0,06
BMC spine	74,7±3,3	71,7±3,1	76,7±2,7	74,1±2,7	80,9±4,2	77,4±4,1	83,2±3,9
BMD hip	1,08±0,05	1,01±0,04	1,04±0,02	0,99±0,03	1,04±0,03	0,95±0,05	1,0±0,05
BMC hip	39,8±2,1	38,1±1,4	40,0±1,1	38,8±1,2	41,3±1,1	36,6±1,5	38,7±1,8

dent groups. Research methods: The mineral density and mineral consent of bone was determined using dual X-ray densitometry by means of «Prodigy» apparatus. Research results: Mineral density and mineral consent of lumbar spine and hip in dependence on age are presented in the table.

The analysis of variation did not expose any reliable influence of age on the BMD and BMC indexes of lumbar spine. Bone mineral density was significantly higher in the group of 80–89 year-olds in comparison with other groups that may indicate some «selectivity» of this group. Hip BMD in the group of 70–79 year-olds was significantly lower in comparison with other groups. The osteoporosis of lumbar spine was observed by X-ray densitometry in 4,3% of patients in group of 40–49 years, in 7,9% — group of 50–59 years, in 7,5% — group of 60–69 years, in 19,2% — group of 70–79 years, in 9,1% — group of 80–89 years; hip osteoporosis in 2,3%, 5,3%, 2,8%, 7,6% of patients respectively. *Conclusions:* Age in men has a substantial influence on hip BMD: the lowest indexes were observed in group of 70–79 year-olds. The osteoporosis of lumbar spine was observed in 19,2%, hip osteoporosis in 7,6% of patients in this group.

431. AGE AND SEX PECULIARITIES OF SPINAL BONE STATE ACCORDING TO X-RAY MORPHOMETRY INDEXES

V.V. Povoroznyuk, T.V. Orlyk (Institute of Gerontology AMS Ukraine, Kiev; roksolan@zeos.net)

The aim of our study was to determine the state of bone in patients of different age and sex. 185 women and 140 men aged 20–89 yrs were examined. X-ray of thoracic and lumbar spine and morphometry of vertebrae were

used. *Results.* Significant decrease of thoracic vertebral height was determined in women after 50 yrs and lumbar vertebral — after 70 yrs. The areas of significant reduction of vertebral dimensions alternate with relatively well-kept vertebrae. Few changes were observed in Th7 and Th10. From 20 to 89 yrs, women lose about 5–8% of height of vertebral bodies. Two periods of vertebral reduction were determined: from 30 to 40 yrs — a period of slow change, and after 40 yrs — a period of fast change that coincides with postmenopausal period. Significant decrease of thoracic vertebral height was revealed in men after 60 yrs, while in case of lumbar vertebrae — after 50 yrs. In men, in comparison with women, significant change was observed in vertebral indexes. *Conclusions:* The change of vertebral dimensions, their configurations in men and women arise in different periods of life and differ in terms of quickness of their development and localization caused by different physical and static loading of spine during the lifetime.

432. BONE MINERAL DENSITY IN UKRAINIAN POPULATION OF DIFFERENT AGE AND SEX

V.V. Povoroznyuk, N.V. Grygoryeva, E.A. Kreslov, N.I. Dzerovich, I.A. Ozerov, V.M. Vayda (Institute of Gerontology AMS Ukraine, Kiev; roksolan@zeos.net)

Aim was to study the mineral density of bone in the population of Ukraine depending on age and sex. Subjects: 1145 persons aged 20–89 years (210 men and 936 women) divided into the following age-dependent groups: 20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85–89 years. Basic inspected parameters presented in the table (results represented as M±m).

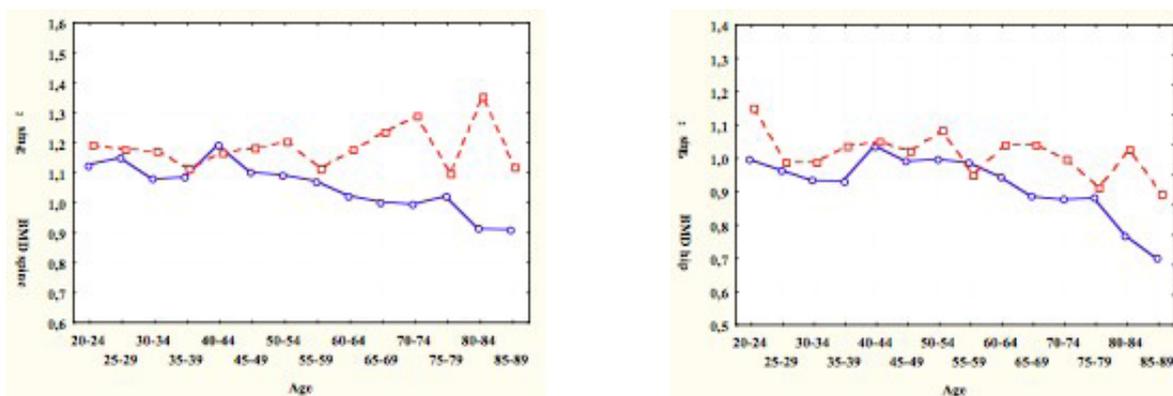


Fig 1. BMD of the representatives of Ukrainian population depending on age and sex: on the left - lumbar spine; on the right - hip.

Age, anthropometric characteristics, indexes of bone mineral density of examined patients depending on sex

Sex	Age, years	Height, m	Weight, kg	BMI	BMD spine, g/sm ²	BMD hip, g/sm ²
Men	54,6±1,2	1,62±0,002	82,1±1,0	26,7±0,3	1,19±0,02	1,19±0,02

Research methods: the mineral density of bone (BMD) was determined using dual-energy x-ray absorptiometry («Prodigy» unit). *Research results:* the indexes of BMD of lumbar spine and hip are presented in Fig. (the indexes of women are represented by a circular marker, men — by square marker).

Conclusions: Sexual distinctions in the indexes of BMD become the most expressed after 60 years: BMD spine and BMD hip in women are significantly lower. The substantial decrease of BMD (spine and hip) in men is observed in age-dependent groups 55–59, 75–79 and 85–89 years. Women have two periods of decrease of bone mineral density — 60–69 years and 80–89 years.

433. EFFECT OF PEPTIDE REGULATORS ON STRUCTURAL AND FUNCTIONAL STATUS OF OSSEOUS TISSUE IN AGEING

V.V. Povoroznyuk¹, V.Kh. Khavinson², A.V. Makogonchuk¹, G.A. Ryzhak², E.A. Kreslov¹, I.V. Gopkalova³ (¹Research Institute of Gerontology of Ukraine AMS, Ukraine; ²St. Petersburg Institute of Bioregulation and Gerontology, Russia; ³V.Ya. Danilevsky Institute of Endocrine Pathology of Ukraine AMS, Ukraine; galina@gerontology.ru)

Post-menopausal osteoporosis is one of the key issues of public healthcare in the developed countries. Medico-social significance of postmenopausal osteoporosis is stipulated by its complications, first of all collum femoris and spinal fractures, which infringe the quality of life and drastically increase the death rate. Hence, the search for new effective means of treatment of system osteoporosis is a burning issue of gerontology. Our study was aimed at evaluating the effect of peptide bioregulators on the structural and functional status of osseous tissue in a post-ovariectomy osteoporosis model in rats. 100 mature female Wistar rats aged 4–6 months with body weight of 200–230 g were randomly subdivided into 8 groups, each consisting of 10 rats, and received the studied substances intramuscularly in different doses, the control being made up of 2 groups of 10 rats — ovariectomized animals not treated with substances, and non-operated animals injected with physiological NaCl solution. The following peptide bioregulators were used in the study: substance extracted from cartilages of young calves, in the dose of 1 mg and 0,03 mg per rat, and peptide medication T-31 (H-Ala-Glu-Asp-OH) in the dose of 10 µg and 0,3 µg per rat. To model the post-menopausal osteoporosis, bilateral ovariectomy was performed. Mineral density of the osseous tissue (MDOT) was evaluated using a two-photon X-ray densitometer «PRODIGY». Study results pointed out the reliable efficacy of cartilages extract and T-31 peptide in maximum dosages in case of their administration from the 30th day since ovariectomy operation. The strongest effect was observed in case of cartilages extract administration in the maximum dosage (1 mg per rat): after a month of observation MDOT was reliably increased, remaining on the same level after 2 months since the beginning of the experiment. The administration of T-31 in the maximum dose beginning immediately after ovariectomy caused a reliable increase in MDOT after 30 days. However, in a month after the completion of the medication course (2 months after the surgery) MDOT was reliably reduced as compared to the initial level. Thus, peptide bioregulators show good prospects as a means of prevention and treatment of post-menopausal osteoporosis.

434. HEALTH, PERSONALITY AND SOCIO-CULTURAL TRENDS FOR AN ELDERLY POPULATION IN TRANSITION IN ROMANIA

G.I. Prada, I.G. Fita (*Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; giprada@gmail.com*)

Since 1990 entire population in Romania faced several transformations and challenges. First of all, there was a constant increase in the percentage of elderly in general population reaching 14.7% in 2006. Number of retired people increased dramatically at the beginning of this period. This was due to some economical reasons and posed a new burden on the working section of population. Another characteristic is the high proportion of rural population, almost half of the people in Romania live in the countryside, a situation completely different from other countries in European Union. Demographic situation and future trends are analyzed. On the other hand, several aspects regarding medical services for elderly in Romania are presented. Health problems of old people in Romania are discussed taking into account some typical features, including the low life expectancy as compared to the other countries in European Community. A historical perspective of the problems is presented since this could shed a better light over the roots of the particular situation in Romania. Each country has distinctive circumstances and they should be taken into account when tailoring the efforts for integration in a larger community with a different, democratic experience.

435. NON-INVASIVE VELOCITY-BASED ASSESSMENT OF PERIPHERAL ARTERIAL STATUS IN THE ELDERLY

G.I. Prada, I.G. Fita, S.P. Prada, V. Ochiana (*Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; giprada@gmail.com*)

Diagnosis of peripheral obstructive arterial disease (POAD) is currently made by Ankle-Brachial Index (ABI) represented by ratio between lower limb and ipsilateral upper limb pressures. But the value of arterial pressure is very much influenced by vessels wall rigidity. This is seen especially in patients with diabetes mellitus (DM) who have extensive arterial calcifications. Especially in these elderly patients Classical ABI gives frequently false. We developed a new approach to assessment of peripheral arterial status in elderly using direct arterial velocity measurement instead of pressures. Using Doppler velocity measurements we investigated 1433 consecutive patients admitted to «Ana Aslan» National Institute of Gerontology and Geriatrics between 1995–2006. Both ABI and velocity at posterior tibial artery, dorsalis pedis artery and popliteal and femoral arteries have been determined. Gender distribution was 61% women and 39% men. Age range: 60 to 105 years (mean 82,5 yrs). We calculated ABI, an Ischemic A/W Index described in previous papers (ratio between systolic velocity at posterior tibial artery and brachial artery). An Ischemic A/W Index equal or lesser than 0,71 was always correlated with the presence of POAD. We have noticed that a systolic velocity at posterior tibial artery lower than 25 cm/s was correlated with POAD diagnosed by the other 2 non-invasive methods (Pearson's correlation coefficient Pearson $r=+0,57$, at a level of significance 0,01). Correlation coefficient was improved ($r=+0,96$) when we used all available methods for diagnosis (clinical, classic oscilometry, ABI, Ischemic A/W Index and angiography) because we diagnosed also patients with arterial calcifications and false negative results. Patients with DM older

than 10 years and POAD who had intermittent claudication and an ABI close to unit (61% of our patients) have been correctly diagnosed as having POAD by direct velocimetry and Ischemic A/W Index. Using chi-square test we noticed a strong association between certain range values of velocity and Leriche-Fontaine clinical stadialization of POAD (significance level $p < 0,001$ — confidence level 99%, $df=9$). In conclusion, for diagnosing POAD at least in the elderly it is enough to use directly measured systolic arterial velocity that gives reliable results even in DM patients.

436. THE QUANTITATIVE AND QUALITATIVE ANALYSIS OF DRUG CONSUMPTION IN ELDERLY SUBJECTS IN POLAND — THE STUDY BASED ON QUESTIONNAIRE

A. Rajska-Neumann (K. Marcinkowski University of Medical Sciences, Poznan, Poland; arn@eranet.pl)

Recently, there has been a great increase in the number of reports from all over the world about excessive pharmacotherapy in elderly individuals. As far as we know, there is no data characterizing the phenomenon of drug consumption by the elderly subjects in Poland. So, the purpose of the study was quantitative and qualitative analysis of pharmacotherapy in elderly individuals in a city of Poznań. The study involved 680 individuals (including 438 women and 242 men) aged 65 years and more (mean age: $72,6 \pm 6,5$) residing in Poznań. They were patients of pharmacists, members of inmates of the Social Welfare House, members of the Mutual Aid Society Associations of Senior Generation 'Vis Vitalis', as well as people taking part in Senior's Clubs activities. The administered questionnaire consisted of questions that characterize respondents and those referred to quantitative and qualitative aspects of pharmacotherapy. In order to make possible analysis of medications taken by studied subjects each of 4654 drugs taken by them was given an individual code based on a system of Anatomic-Therapeutic-Chemical Classification of Preparations (ATC system) according to The World Health Organization. The analyzed subjects took more than 6 drugs on average, including more than 5 prescription drugs ($6,9 \pm 3,2$) and more than 1 over the counter drugs ($1,6 \pm 1,5$). The majority (98,2% subjects) used at least one drug. The most common groups of drugs taken by the studied subjects were: cardiovascular drugs (angiotensin-converting enzyme inhibitors and nitrates) [35.9% of the all taken drugs], gastrointestinal drugs (vitamins, potassium supplements and antagonists of H₂ receptor for peptic ulcers) [27.0%], central nervous system drugs (psychostimulating and nootropic drugs, benzodiazepine tranquilizer and anilides from the group of analgesics and antipyretics) [13,6%] as well as muscular-skeleton system drugs (derivatives of acetic and propionic acid from the group of nonsteroidal anti-inflammatory drugs and biphosphonians) [8.8%]. Adverse drug reactions after drugs were mostly caused by cardiovascular drugs (angiotensin-converting enzyme inhibitors and nitrates) [24,1% of the people taking a certain group of drugs], muscular-skeleton system drugs (derivatives of acetic acid from the group of nonsteroidal anti-inflammatory drugs) [19,2%], central nervous system drugs (pirasolon and salicylic acid and its derivatives) [18,6%] and antimicrobial drugs (penicillin sensitive to β -lactamase) [18,6%]. In conclusion, polytherapy and adverse drug reactions are common in studied subjects. These phenomena increase the risk of disability in elderly and may be danger for their functional independence.

437. THE ANALYSIS OF THE DUPLICATE USE OF ANGIOTENSIN-CONVERTING INHIBITORS IN THE THERAPY OF THE ELDERLY SUBJECTS IN POLAND

A. Rajska-Neumann (K. Marcinkowski University of Medical Sciences, Poznan, Poland; arn@eranet.pl)

Excessive pharmacotherapy and the potential inappropriateness of treatment in the elderly are the big challenge for today's geriatrics. In this study we present and characterize the phenomenon of the multiplicative use of angiotensin-converting enzyme inhibitors (I-ACE) in the therapy of the elderly subjects in Poland. As far as we know this phenomenon has never been presented in any analysis concerning the inappropriateness of treatment of elderly. The analyzed group consisted of 50 elderly subjects (average age: $73,1 \pm 6,4$ [range: 65-88 yrs], who consumed concomitantly two or more I-ACE in their daily schemes of treatment. The quantitative and qualitative aspects of those schemes were analyzed. Analyzed subjects used $8,4 \pm 2,8$ on average and 88% of them (44 subjects) used more than 5 preparations daily. The most commonly used group of drugs were cardiovascular drugs (53.5% of all used drugs), gastrointestinal tract drugs (23.1%) and central nervous system drugs (10.8%). The average number of physicians consultation in the analyzed group was $1,6 \pm 0,8$ (range 0-6 consultations) — most of the analyzed subjects declared to be consulted by the cardiologist (17 persons, 51.5% of subjects consulted by a specialist). The detailed characteristic of the combinations of I-ACE used in the analyzed group showed that one fourth of all subjects used the combinations of perindopril and enalapril (12 persons, 24% of all). Other often used combinations of I-ACE were: enalapril + captopril (10 subjects, 20%) and perindopril + quinapril (7 subjects, 14%). The results of the our analysis may suggest that the polypharmacy, poor patient's compliance and the lack of doctor-doctor and patient-doctor communication can be the potential reasons of the phenomenon of multiplicative use of I-ACE. There is a need of more detailed characteristic of the analyzed phenomenon the future.

438. ONE-YEAR ANALYSIS OF MORTALITY IN AN ACUTE GERIATRIC UNIT

M. Ramos-Cortes, E. Romero-Pisonero, J. Mora-Fernandez, L.J. Silveira-Guijarro, J.M. Ribera Casado (Servicio Geriatria, H. Clinico S. Carlos, Madrid, Spain; miroracor@hotmail.com)

Objectives: 1) To study the mortality rates of elderly admitted to an AGU. 2) To analyse the influence of different clinic and functional factors on one-year mortality. *Methods:* Patients admitted from emergency department during a 6-month period were included. Clinical, functional and mental evaluation (Barthel and Katz indexes, mobility, activities of daily living (ADL) and presence of dementia). Data of admission: mortality, complications, functional impact of admission. One-year follow up by telephone contact: crude mortality, comorbidity (Charlson index, ICh). We compared the influence of the basal and admission data in the survival. Statistical analysis: comparison of mean and proportions by Chi square, t Student and ANOVA. Cox regression. Confidence interval 95%. SPSS 12.0. *Results:* n=336 patients, (mean age 85.6 y.o.; DE 6.9), 59.2% women. Main GRD 541 (respiratory infection and lung diseases). Basal data: moderate or severe

dementia 39.3%, dependence for ≥ 3 ADL 45.4%, mobility problems 48.2%, incontinence 29.9%. Admission data: new functional impact 19.5%, nosocomial infection 47.6%. In-hospital mortality 22.9%. One-year follow up: Lost cases 5.1%. 107 patients died during this period, (total mortality 54.8%). Median survival was 59 days. Comorbidity ICh >2 : 47.6%. Causes of death: respiratory 37.5%, circulatory 31.0%. Mortality related factors: male gender ($p=0.029$), dementia ($p=0.002$), functional dependence ($p<0.001$), respiratory nosocomial infection ($p=0.026$), ICh >2 ($p=0.015$). Age and other demographic or clinic factors were no related ($p>0.05$). Cox regression analyse showed that gender ($p=0.021$) and functional dependence ($p<0.001$) were independent factors to predict death. *Conclusions*: 1) We observed a very high mortality during the first 2 months after admission, especially for respiration and cardiovascular disturbances. 2) Even though gender is clearly associated with mortality, the most determinant variable is the functional status of the patients.

439. IDENTIFICATION OF THE SEVERITY OF BLOOD CIRCULATION DISORDER IN OLDER PATIENTS

M.I. Razumovsky, A.M. Razumovskaya, Yu.A. Korovyansky (St. Petersburg Institute of Post-Graduate Training of Medical Experts, Russia; Spb_ipde@freemail.ru)

The severity of blood circulation disorder (BCD) of the visual organs (VO) in older persons is one of the main criteria for clinical and social prognoses in case of some diseases, entailing a pronounced disorder of visual functions, disablement and blindness. However, until now the estimation of this criterion in case of most eye diseases, for which BCD is either a cause or a consequence, is not performed. Besides that, BCD identification using existing instrumental methods is complicated and hardly accessible in wide medical practice (especially in outpatient treatment and at home). We have developed an algorithm for identifying the extent of compensation of BCD in visual organs. Our work was based on correlation statistical analysis of the data available in medical reports and case histories of 617 patients of this profile being older than 60 years. We made up a table of diagnostic significance values of different clinical physiological manifestations with their gradations, and made up a special diagnostic formula for identifying the extent of compensation of eye blood circulation. The extent of compensation of the eye blood circulation disorder was identified according to the classification of M.I. Razumovsky (1996) as compensated, remittent with occurring ischemia, not compensated and decompensated (acute blood circulation disorder). Threshold value of diagnostic capabilities of the formula was expressed in the form of the mathematic total of the points, this total reflecting the extent of compensation of the disordered blood circulation. Acute period of the blood circulation disorder was not taken into consideration in this algorithm, since it may be identified basing on well known typical clinical symptoms. The proposed method of evaluating the severity of the blood circulation disorder in the visual organs is simple and easy to use by this category of patients.

440. LIPOPROTEINS AND APOE AND MORTALITY OUTCOMES IN BELFAST ELDERLY LONGITUDINAL FREE LIVING AGEING STUDY (BELFAST)

I.M. Rea¹, I. Young¹, N. Shields², F. Cambien³, A.E. Evans¹ (¹Queens University Belfast; ²Belfast City Hospital;

³Inserm, Paris; i.rea@qub.ac.uk)

Elevated serum cholesterol, low density lipoprotein (LDL) and triglycerides (TG) are associated with increased cardiovascular risk while high density lipoproteins (LDL) may be protective. Coronary heart disease remains a leading cause of death in the elderly but there is very little information about cholesterol and lipoproteins in the very old or their relationship to APOE genotypes which influence cholesterol metabolism. In the Belfast Elderly Longitudinal Free-living Aging Study (BELFAST) we measured cholesterol, HDL, LDL and TG in 289 subjects (65-100+ years) who were independent, mentally alert and self-reporting as well. Cholesterol levels were significantly higher in female compared to male subjects and fell with age in this cross-sectional study. Triglycerides and LDL also fell with age but HDL remained unchanged. There was an increase in cholesterol across APO E2, E3 and E4 genotypes with some attrition in E4 frequency with conversely a slight increase in E2 genotype frequency in nonagenarians. Kaplan Meier survival curves showed no differences to time to death for subjects categorised for cholesterol above and below 5.2 or 5.8 umol/l or for APOE genotypes. This study suggests that lower cholesterol, LDL and triglyceride levels and unchanged HDL are present in nonagenarian subjects, who achieve good healthspan. There is a trend for the APOE gene, which influences cholesterol, to show attrition of E4 genotypes in BELFAST nonagenarians. These results may provide some evidence of protection from premature cardiovascular disease in those persons who reach very lengthy healthspan.

441. INCIDENCE OF PRESSURE SORES IN A SECOND LEVEL, ACUTE CARE HOSPITAL, IN SPAIN

L. Reig¹, D. Lozano¹, A. Rodriguez², N. Maiz² (¹UFIS Geriatria, Hospital Sociosanitari de Hospitalet, Hospitalet de Llobregat, Spain; ²Hospital General de Hospitalet, Hospitalet de Llobregat, Barcelona, Spain; Lluis.Reig@Sanitatintegral.org)

Introduction. Pressure sores (PS) are a frequent problem in bedridden elderly patients, by the high number, burden in sanitary costs, an effect on quality of life of patients and careers. *Objective:* Know the incidence of PS in a medium level, Acute Care Hospital. *Material and Method:* In our Centre, all PS are included in one registry since 2001 before today. In that registry, we analysed the all PS include since 2001 until 2005. For each PS we collect: sex, age, localization; origin (intra or extrahospital). *Depth Stage* (Stage 1: redness; stage 2: vesicle, no break skin; stage 3: subcutaneous tissue exposed; stage 4: muscle or bone exposed) and *tisular stage* (Stage 2: epitelization; stage 3: granulation; stage 4: necrosis) at registry moment and at discharge. Achievement of microbiological culture or not. Treatment and stay (in days) since registry moment until discharge. *Results:* 1823 PS registered. Median Age 81±10.93 years (<65 yrs: 8.2%, 65–75 yrs: 13.4%, 76–85 yrs: 41.2%, >86 yrs: 37.2%). Distribution by sex: 37.7% men, 62.3% women. More frequent localization: sacral region 31.9%, heel: 35.8%, Trocanter:7.0%, Back and Superior extremities: 6.30%, Inferior extremities: 6.6%. Origin: 46.5% before admission, 53.4% during admission. Stratification by depth stage at registry moment and at discharge:

	Stage1	Stage 2	Stage 3	Stage 4
Registry	35,4%	50,1%	9,5%	4,7%

Discharge | 18,6% | 38,9% | 8,9% | 3,5%

Stratification by ticular stage at registry moment and at discharge:

	Stage 2	Stage 3	Stage 4
Registry	11,3%	23,3%	25,1%
Alta	12,2%	24,1%	14,3%

30.1% closed at discharge. Microbiological culture: yes 5.5%, not 94.2%. The treatments more frequent are: Iodine 22.8%, Hydrocellular dressing: 35%, Hydrocolloids: 6.4%, Debridants: 8,6%, Others 17,2%. Median stay since registry until discharge: 12,383±12,393 days. *Conclusions:* There is an elevated number of PS during these years. The median age in patients with PS is high. There are closing in 30% of PS in spite of short duration of admission. Hydrocellular (Allevyn®, Smith&Nephew) are the more using treatments.

442. OPTIMIZATION OF RESOURCES MANAGEMENT, IN DAILY HOSPITAL.PLANNING A REHABILITATION CIRCUIT

L. Reig¹, E. Martinez², P. Ayuso², M. Lora², P. Sanchez-Ferrin², M. Fernandez² (¹UFIS Geriatria, Hospital Sociosanitari de Hospitalet, Hospitalet de Llobregat, Spain; ²Hospital Sociosanitari de Hospitalet, Hospitalet de Llobregat, Barcelona, Spain; Mercedes.Fernandez@Sanitatintegral.org)

Introduction: The Daily Hospital is a unit where patients receive functional rehabilitation three times a week. Bearing in mind the fragility and pathologies the elder normally suffer, we noticed the need of a holistic rehabilitation making the most of the resources we've got at our disposal. *Objective:* Design and development of a holistic rehabilitation circuit in Daily Hospital (Hospital Sociosanitario in Hospitalet, Barcelona-Spain). *Development:* The patients are divided into four groups depending on their level of autonomy. The circuit includes: (1) Exercises in parallel bars: 1. Pre-warming up exercise: walking around parallel bars; 2. Warming-up exercises; 3. Holding onto a bar a) flexion/extension of arms and pectorals, b) flexion of hips, lifting legs, c) flexion of hips, bending knees, d) lifting up the tip of the foot, e) leaning the heel on the floor to train calves and abductors, f) swinging hips to exercise body balance. (2) Memory and attention exercises. Patients are sitting in a circle. They pass the ball to each other following a instruction given by the professional. For example, saying the name of the closest patient, the number previously assigned to each patient, passing the ball in different directions. (3) Respiratory rehabilitation exercises. Patients are given the instruction to put a thin piece of paper inside a pot, inhaling through a straw and to pass a ball of polyspan through a marked way by blowing. (4) Coordination exercises. These are recreational exercises as this is the end of the circuit. In pairs, the patients pass a balloon over a string and underneath it, (exercising the extension and flexion). They also play bowling (exercising transfers of position from sitting to standing) and walking short distances. Each station lasts for fifteen minutes and all of them are guided by a monitor. Activities change from time to time so that they don't become monotonous. *Results:* From 54 patients discharged from hospital during 2006, the average age was 77 years old, 95% per cent of them maintain or improve their Barthel index. The average stay was 183

days and 73% of them were discharged to their residences. A higher level of satisfaction by the patient, families and staff is noticed and likely to be registered in further studies. *Conclusions:* A higher level of fulfilment of geriatric patients' expectatives when coming to Daily Hospital is perceived as well as a holistic rehabilitation (physical, psychological and cognitive).

443. COGNITIVE FUNCTIONS IN OLD AGE

G. Reis¹, Z. Barreto², M. Freitas², J. Jesus³ (¹University of Madeira; ²SRS, EPE Hospital Central do Funchal; ³Clinica da Su; greis@uma.pt)

Introduction: Cognitive impairment is progressive but normally occurs late in life and is shorter than we believe (Berryman et al., 2001). So, Berger (1995) believes that almost old age people still maintain good levels of cognitive performance. Well exercised cognitive function declines slower and later than those that aren't. Denney (1982 by Fonseca & Paúl, 2001) said that losses can be control and avoid if stimulate. However cognitive efficacy to continue into old age at comparable levels of performance, need more cognitive support and training (Baltes, Staudinger, Lindenberger, 1999). *Aim:* The purpose of this study was to evaluate cognitive functions of people with 60 years and over, living in community, and identify the factors that influence it. *Methodology:* It's a correlate study. We studied a stratified sample of 100 old people aged 60 years and over, living in a community, 1581 corresponded the age we were studying. Considering the inclusion criteria: to be able to communicate and without mental impairment. *Instruments:* We used the following scales: Short Portable Mental Status Questionnaire (Pfeiffer, 1975), Functional Activities Questionnaire (Pfeiffer, 1982), Mini Mental State Exam (Folstein, 1975). *Results:* Mean age 71 years sd 7.9; Women were 70%; Married 52% Widow 38%, Single 8%; With basic education 41%; without education 25%; satisfied with family's support 84%. 88% were independent in personal care and 86% in instrumental activities; 90% had no professional activity in the moment; 83% had a pension. Cognitive functions: 88% had no Cognitive impairment. Cognitive Impairment appears over age 79 (p 0,001). Cognitive functions decreased in those who were widows (p 0,006); had low academic levels (p0,0001); had no professional activity (0,001) were women (p0,05) and had limitations by chronic diseases (p 0,002). *Conclusions:* Age seems to be an important factor in Cognitive Impairment development. Data show that Cognitive impairment is very frequent as people get older and health professionals ought to detect it earlier. Our goal is to promote well being by optimizing contextual and personal factors. Nursing appointment is an important way to achieved professional interventions. *References:* Baltes, P.; Staudinger, U.; Lindenberger, U. (1999). Lifespan psychology: Theory and application to intellectual functioning. Annual Review of Psychology, 50, 471–507. Berger, L. (1995). Aspectos biológicos do envelhecimento. In Berger, L.; Mailloux — Poirier, D. (Eds.) Pessoas idosas: Uma abordagem geral. (pp. 123–153). Lisboa: Lusodidacta. Berryman, J.; Horgreaves, D.; Herbert, M.; Taylor, A. (2001). Psicologia do desenvolvimento humano. Lisboa: Instituto Piaget. Fonseca, A.; Paul, C. (2001). Psicossociologia da saúde. Lisboa: Climepsi Editores.

444. FACTORS ASSOCIATED WITH PRESSURE ULCERS IN OLD PEOPLE IN MADEIRA

G. Reis, H. Jardim, T. Espirito Santo, L. Santos, D. Silva
(University of Madeira; greis@uma.pt)

Introduction: Pressure ulcers (PU) are a health problem that affects people in every aspect of their daily lives. Physical, psychological and social problems can be identified in individuals who have this problem and the consequences affect the quality of life of those people. Factors like age, incontinence, kind of care, devices for prevention and postural changes are very important in PU development. Calculate risk for UP (Braden scale) is another tool for UP prevención. **Aim:** The purpose of this study was to determine risk for PU and other associated factors. **Methodology:** It's an analytic study. Stratified sample considering seniors 's location (Hospital, Community and Nursing homes) of 333 old people aged 65 years and over. We used the EPUAP instrument to measure PU prevalence including Braden scale. **Ethic aspects:** Respecting the precepts of Nuremberg Code. **Results:** Mean age 80 years sd $\pm 7,3$; women were 61,9%; from community 66,3%, the prevalence of PU 24%; 79,7,% had PU grade 3 and 4; location were sacrum 36,3%; followed hip 17,5%; 74,7% of the sores began at community. **Factors:** Risk level 41,7% had high and medium risk; other factors 46,5% had some type of incontinence, 89,2% needed chronic care.

Had postural changes is related to risk level ($p < 0,001$), had preventive bed devices is related to risk level ($p < 0,001$); had preventive chair devices is related to risk level ($p < 0,001$); the risk level is related to incontinence ($p < 0,001$); the postural changes in chair weren't related to risk level and to the kind of care. **Conclusions:** The results suggest that prevalence is high; it is a population on risk, there are many associated factors on PU that must be modify such as postural changes on chair and implementation of a standard provision of pressure relieving and pressure reducing. Risk assessment should be done by nurses and an ongoing part of daily holistic care for old people and families.

445. PHYSICAL TRAINING A NON PHARMACOLOGICAL METHOD IN MANAGEMENT OF OSTEOPOROSIS IN ELDELRY FEMALE

F. Revnic¹, N. Teleki², C.R. Revnic², C. Paraskivascu²
(¹Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, ²UMF Carol Davila, Bucharest, Romania; frevnic@hotmail.com)

The aim of study:was concerned with evaluation of moderate levels of physical exercise upon: depression, endocrine factors, BMD and muscle strength in elderly female with osteoporosis. Material and methods: Patient selection: 24 female patients aged 64-78 years old admitted in Rehabilitation Clinique for osteoporosis associated with Depression have been taken in our study, divided into two groups of 12 patient each: A.) control active patients and B.) sedentary with osteoporosis and depression. Physical training program applied for 24 weeks consisted of 15 minutes exercise program (Geriatrics..). Evaluation of strength training has been performed with a Swarter-Picker EMG 2000, at the level of biceps and triceps brahii, before and after training program. BMD has been measured by dual X Ray energy absorbtimeter (DEXA) at the spine, hip and radius bone. HGH, HTSH and Cortisol have been evaluated before and after training with

DELFA Research spectrofluorimeter using Eu+ labeled kits purchased from Pharmacial LKB. Evaluation of depression using GDS and Zung well being questionnaire before and after training. Evaluation of equilibrium disturbances by Tinetti test, under 19 the risk for falls being significant. Results: After 24 weeks physical training, the groups exhibited statistically and clinically significant decrease in GDS and ZWBQ scores. These findings correlates with an improvement in mental health, followed by an increase in muscle strength and BMD concomitant with an increase in HGH secretion and a decrease in Cortisol secretion. There is an improvement in muscle force and amplitude following training as well as an improvement in static and dynamic equilibrium as our results have shown. Pain score has shown a difference between the two groups being decreased in patients following training, especially due to an increase in paravertebral muscle force. **Conclusions:** Physical training may help control a number of physical and psychological problems in elderly such as osteoporosis and depression. Physical exercise is a naturally antidepressant by increasing the levels of neurotransmitters that are available in the brain, being an adjuvant of osteoporotic therapy, decreasing the risk of falls and improving bone metabolism and DMO as DEXA measurement have shown. There is a definite relationship between exercise and improved mental health, being related not only with the relief of symptoms of depression and anxiety, but also seem to be beneficial in enhancing self esteem, producing more restfull sleep and helping elderly to recover from psychological stress.

446. A COMPARISON OF TWO APPROACHES TO MEASURING FRAILITY IN ELDERLY PEOPLE

K. Rockwood, M.K. Andrew, A.B. Mitnitski (Dalhousie University, Halifax, Canada; Kenneth.Rockwood@dal.ca)

Background & Objectives. Many definitions of frailty exist, but few have been directly compared. We compared the relationship between a definition of frailty based on a specific phenotype with one based on an index of deficit accumulation. **Methods.** The data come from all 2305 people aged 70 years and older who comprised the clinical examination cohort of the second wave of the Canadian Study of Health and Aging. We tested convergent validity by correlating the measures with each other and with other health status measures, and analyzed cumulative index distributions in relation to phenotype. To test criterion validity, we evaluated survival (institutionalization and all-cause mortality) by frailty index (FI) score, stratified by the phenotypic definitions as «robust», «pre-frail» and «frail». **Results & Discussion.** The measures correlated with each other ($R=0.65$) and with measures of function (phenotypic definition $R=0.66$; FI, $R=0.73$) but less well with cognition ($R=-0.35$; FI $R=-0.58$). Median FI scores increased from 0.12 for the robust to 0.30 for the pre-frail and 0.44 for the frail. Survival was less with increasing frailty, and institutionalization was more common, but within each phenotypic class, there were marked differences in outcomes based on the FI values — e.g. amongst robust people, the median 5-year survival for those with lower FI values was 85%, compared with 55% for those with higher FI values. In effect, the phenotypic definition privileges 5 deficits above others, but varying which items make up the frailty phenotype was less informative than

varying how many items were used. We compared grades of frailty based on the 5 original items, to graded based on items selected randomly; discrimination between frailty groups was no different between the two exercises. By contrast, as we increased the number of randomly selected variables from 5 to 10 (and modified the grading rules — e.g. 'frail' occurred with 6/10 deficits) we improved classification of the risks of death and institutionalization. In short, whatever precision the 5 phenotype-defining items add to understanding the general case is traded off against losing so-called 'mild effect' variables, which are included as more items are considered. *Conclusion.* Frailty appears to be related less to specific traits than to the aggregate (or systemic) effects of the accumulation of impairments. A measure such as the frailty index that captures these declines in the aggregate is able to capture the overall function of an individual, especially in relation to understanding the risk of adverse outcomes.

447. ACTIVITIES IN A SPANISH MEMORY UNIT

A. Rodriguez, A. Viloria, R. Yubero, L. Moron, P. Gil, J.M. Ribera (*Hospital Clinico San Carlos, Madrid, Spain; raquel_yubero@hotmail.com*)

Aims: To describe the activities of a Memory Unit in a Geriatric Department in a Spanish General Public Hospital. *Method:* Restrospective and descriptive study of a Memory Unit in the past four years. We collected data about human resources, research activities, clinical work and teaching and training activities. The patients came from different clinical levels: primary care and medical specialties (most of them from the Geriatrics), to assess cognitive impairment. *Results:* 995 patients have been seen in our Memory Unit in the last 4 years, 9 of them were exits. During 2006, 2378 visits were made (included Neuropsychological and Medical visits). Sample mean age: 79,1±6.3. Sample mean education level 10±5. 74% of the patients were women. The most frequent diagnosis in our sample was Alzheimer's Disease Dementia (45%). Our team is formed by: geriatricians, geriatricians in training, neuropsychologists, nurses, occupational therapists, social worker. We have collaborations with the following Departments: Neuroradiology, Magnetoencephalography Unit, Pharmacy Neurology and Psychiatry. We are included in the EADC. Nowadays we are involved in some international clinical trials and we are developing some post-graduate works. *Conclusions:* The cognitive impairment rapprochement has been made with an interdisciplinary team. Even when the Alzheimer's Disease is the most frequent, we have found a big heterogeneity in the diagnoses. In our Memory Unit not only the clinical work is relevant but also the research and the teaching activities.

448. UNIVERSITY PROGRAM FOR THE ELDERLY IN A FRAGMENTED TERRITORY OF THE ATLANTIC AREA

B.C. Rodriguez¹, M.A. Gonzalez¹, J.M. Mayon², R. Chacyn¹, J.F. Jimenez¹, F.J. Hernandez¹ (*¹Las Palmas de Gran Canaria University, Canary Islands, Spain; ²Santiago de Compostela University, Spain; jjimenez@denf.ulpgc.es*)

Introduction: University programs designed for the elderly constitute a social reality which is well established in developed countries. They contribute to the social welfare of populations and, in fact, constitute an element of governmental and educational policies. *Objective:* To make

known the programme for the elderly which the University of Las Palmas de Gran Canaria (ULPGC) is developing at the moment and additionally to implement the programme in other islands of the Canarian archipelago and later, through different collaborations, to also make the project known in other Atlantic territories. *Material and Methodology:* In 1998, the ULPGC initiated the program for the elderly called Peritia et Doctrina. In this way, our university is contributing to social awareness and solidarity for the elderly who have found a new way of meeting and socializing in the classrooms, where they supply their own experiences (*pericia*) at the same time as acquiring new knowledge (*doctrina*). This programme constitutes a high level of university training in the elderly. It consists of three academic years with a distribution of topics that comprises social and humanistic sciences, technical sciences and the sciences of health with a total of 20 credits for course. The students of the mentioned project attend theoretical lectures two days per week and they develop practical skills on the days in between (this consists of cultural visits, half-way environmental journeys, sports activities, etc.). As regards the islands Fuerteventura and Lanzarote, the lessons are developed over two days and combine with the teaching staff's efforts which results in saving economic costs. The course will take the same shape in El Hierro. When students complete the course, they receive a diploma. *Results:* The success of this program encouraged the ULPGC to expand it to different islands, in 2003 in Fuerteventura and in Lanzarote in 2004. There are plans also to introduce the project EL Hierro in the next academic year 2007-08. More than five hundred students have enrolled in this program over the last few years. *Conclusions:* We can see a significant increase in the number of students who enrol every year as the program is expanded throughout the other islands. At the moment we are working on the possibility of collaborating with other archipelagos in order to develop this project in their Universities (Azores, Madeira, Cabo Verde, etc).

449. ANEMIA AND GERIATRIC ASSESSMENT IN PATIENTS IN AN INTERMEDIATE CARE HOSPITALIZATION UNIT

C. Roqueta¹, R. Miralles¹, M.J. Robles¹, I. Llorach¹, C.A. Villavicencio¹, A. Renom¹, A.M. Cervera² (*¹Hospital de la Esperanza, Instituto de Atencion Geriatrica y Sociosanitaria (IAGS), Barcelona, Spain; ²Centro Forum del Hospital del Mar. Instituto de Atencion Geriatrica y Sociosanitaria (IAGS), Barcelona, Spain; 36792crg@comb.es*)

Introduction: anemia is very common in elderly people with disabilities. *Aim:* evaluate the relation between anemia and parameters of geriatric assessment in patients in an intermediate care unit, after an acute illness. *Patients and methods:* a geriatric assessment was made to 57 patients (35 women/22 men): age, previous Barthel index (PBI), inpatient Barthel index (IBI), Lawton index (LI), mini-mental of Folstein (MMSE), Norton (N), Charlson comorbidity index (ChCI), nutritional status with weight, body mass index (BMI), brachial circumference (BC), albumin and cholesterol. Main diagnostics in groups, geriatric syndroms and prevalence of anemia (Hb<12g/dl) has been registered. *Results:* mean of variables studied in 41(71,9%) patients with anemia were: age 77,4±11,4; PBI 91,0±14,4; LI 4,6±2,9; IBI 40,90±21,0; MMSE 23,5±5,4; N 15,5±2,3; ICCh 2,0±2,3; weight 66,1±11,1; BMI 26,7±6,8; BC 27,3±3,2; albumin 3,2±0,4; cholesterol 176,0±42,3. In

the 16 patients without anemia were: $76,5 \pm 8,3$; $90,4 \pm 22,9$; $4,0 \pm 2,9$; $32,2 \pm 28,2$; $22,6 \pm 6,6$; $15,3 \pm 3,0$; $1,9 \pm 1,3$; $64,7 \pm 15,3$; $26,5 \pm 5,6$; $27,3 \pm 4,5$; $3,2 \pm 0,4$ y $154,8 \pm 45,2$ respectively ($p=ns$). Main diagnostics of 57 patients studied were: 22 fracture-injury [20 with anemia (35,1%)]; 12 neurological [8 with anemia (14,1%)]; 7 general surgery and vascular [5 with anemia (8,8%)]; 6 cardiorespiratory [2 with anemia (3,5%)] and 10 others [6 with anemia (10,5%)] ($\chi^2=13,986$; $p=0,02$). Twenty-nine patients have had falls (43,8% with anemia) and 51 have had walking disability (68,4% with anemia), whereas in the rest, the proportions of anemia were 28,0% ($\chi^2=5,95$, $p=0,01$) and 3,5% ($\chi^2=4,94$, $p=0,02$) without a disorder respectively. **Conclusions:** 1. The relation between anemia and main diagnostic of fracture-injury, falls and walking disability was statistical significance. 2. There was not relation between anemia and the rest of the parameters studied.

450. CARDIAC TOXICITY FOR ESTRAMUSTINA

C. Rosado, M. Araujo, C. Yera, R. Paz, R. Daimiel,
M.A. Carbonell (Hospital Virgen del Valle, Toledo, Spain;
mangelcarbonell@telefonica.net)

Introduction: The dilated cardiomyopathy (MCD) could be considered as a clinic and physiopathological syndrome characterized by systolic dysfunction and dilatation of the left ventricle or of both ventricles with inappropriate hypertrophy. Although the most frequent cause is the idiopathic, other causes exist that they could lead to this situation, like the ischemic myocardic, infections, infiltrated illnesses, toxic, etc. We propose the case of a patient with dilated cardiomyopathy developed during the treatment with estramustine that was solved after de treatment. **Clinic case:** A man of 76 years old diagnosed of prostate adenocarcinoma in stadium 2–3 of Gleason's scale in treatment with estramustine by due to a classical hormonal treatment that is admitted to our hospital by heart failure with poor answer to the treatment. The echocardiogram demonstrated a left ventricle hypertrophy with systolic function severely depressed in a global way ($FE < 25\%$), moderate mitral insufficiency, light aortic insufficiency, moderated tricuspid insufficiency, high lung pressure and biauriculate dilatation. The treatment was over in the face of dilated secondary cardiomyopathy to estramustine, substituting for a classic hormonal treatment with a progressive improvement. After five months the hypertrophy ventricle stayed so the systolic function became normalised ($FE 68\%$), and the dilatation disappeared. **Conclusion:** Actually, the mortality of the MCD is about 20% after five years. That's why is so important the identification of the etiology causes to avoid the complications. In this case the withdrawal of the treatment was the causes of the functional recovery with a systolic function normalised and disappearance of the symptoms. Finally, we can conclude that in the patients with estramustine treatment the echocardiogram is one of the tests that must be done in the monitoring on the illness.

451. PROMOTING FUNCTIONAL CAPACITY OF OLDER PEOPLE USING GERONTOLOGICAL REHABILITATION NURSING MODEL

P.E. Routasalo (Dept. of Nursing Science, University of Tartu, Estonia; pirkko.routasalo@utu.fi)

Functional capacity does not decline as a result of ageing in and of itself; difficulties in living independently in

the home result primarily from the diseases that follow with ageing and from the lack of application of remaining functional capacities. When the ageing individual's functional capacity is suddenly reduced, the situation can be addressed quite effectively by means of active physiotherapy. This kind of nursing is mainly clinical and professionally oriented, with professional staff applying their special skills to improve the patient's functional capacity. When the loss of functional capacity happens more slowly, the interventions to restore that capacity will also take more time. The Gerontological Rehabilitation Nursing Model, as developed and tested by the author, describes the main elements of nursing oriented to the aged individual. The model helps nurses assess the ageing individual's situation, plan interventions, implement the plan and evaluate their own efforts to promote the person's functional capacity. In the model, nursing is an interactive process between the nurse, the aged individual and his/her next of kin. The role and resources of the spouse or other family member living with the individual or helping him/her at home are central to rehabilitation nursing. The starting-point is the individual's functional impairment and at the same time his/her remaining resources. Nurses have to be aware both of their own attitudes towards the aged individual's possibilities in rehabilitation as well as of the individual's and his/her next of kin's values, hopes and aims. Functional capacity targets are set together with the individual and his/her next of kin and if necessary in a multidisciplinary team. When everyone accepts the targets set, they will also be committed to promoting the individual's own efforts to achieving a realistic functional capacity. Nurses use their own decision-making in nursing interventions and systematically evaluate the attainment of the targets set with the person, his/her next of kin and the whole team. The model has been tested with different nursing professionals and in different nursing settings. It provides a clear foundation for assessing the aged individual's resources and helps in planning nursing interventions from the aged individual's point of view. It also clarifies the important and independent role of nurses in the aged individual's rehabilitation nursing. Furthermore, it helps nurses in their efforts to prevent functional impairment in older people.

452. EFFECTIVENESS OF PSYCHOSOCIAL GROUP REHABILITATION IN RELIEVING LONELINESS OF OLDER PEOPLE

P.E. Routasalo¹, N. Savikko², R.S. Tilvis³, K.H. Pitkälä⁴
(¹University of Tartu, Estonia; ²University of Turku, Finland;
³Clinics of General Internal Medicine and Geriatrics,
Helsinki University Central Hospital, Finland; ⁴University of
Helsinki, Finland; pirkko.routasalo@utu.fi)

Background: Loneliness is a common problem among older people, and it may lead to decreased quality of life, cognitive decline, and increased use of health services, early institutionalization and increased mortality. Interventions aiming at alleviating older people's loneliness and to socially activate them have been developed but their effectiveness has been quite modeSt. **Aim:** The aim of the research was to determine the effects of new group psychosocial group rehabilitation on psychological well-being, cognition, subjective health, use of health services, and mortality of lonely older individuals. **Design:** The research was a randomized, controlled trial, which was implemented in six communities and in seven rehabilitation centres providing day care in Finland. **Participants:** The

participants were 235 older people (>74 years) suffering from loneliness. Intervention: The interventions happened in 15 groups comprising 7–8 participants and two professional group leaders. The groups met once a week for 3 months 12 times in total. The group meetings aimed to empower the older participants, and to promote their social integration, and were based on the effects of closed group dynamics. The voluntary lonely participants were divided according to their interests into groups with following activities: 1) therapeutic writing and group psychotherapy, 2) group exercise and discussions, and 3) art and inspiring activities. The group leaders received through training and mentoring. *Measures:* The participants responded to a postal questionnaire before the randomization and one year after the baseline. Their psychological well-being, cognition, subjective health, use and costs of health services and mortality were measured. *Results:* Results show that psychological well-being and cognition improved significantly in the intervention group compared to the control group. At two years, survival was 97% in the intervention group and 90% in the control group ($p=0.047$, log rank test). The intervention group showed a significant improvement in subjective health, thus resulting in significantly lower health costs in the 1.5-year follow-up ($p=0.039$). In addition the rehabilitation activated the intervention group participants socially: 40% of the participants continued the group meetings independently one year after the intervention. A significantly larger proportion of the participants in the intervention groups had got new friends during the last year compared to the control group ($p=0.048$). *Conclusion:* Carefully planned psychosocial group rehabilitation for lonely older people socially activated and empowered them. Psychosocial group rehabilitation improved lonely older people's health, psychological well-being, cognition, and reduced their mortality and use of health services.

453. METABOLIC PROFILE, INSULIN RESISTANCE AND OXIDATIVE METABOLIC STATUS IN ELDERLY WOMEN WITH AND WITHOUT TYPE 2 DIABETES

C. Rusu, D. Gradinaru, C. Borsa, C. Ionescu, G. Constantin (Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; nelirusu@hotmail.com)

Insulin resistance (IR) or impaired sensitivity to insulin in hepatic, muscle and adipose tissue can lead to type 2 diabetes mellitus, multiple metabolic abnormalities and cardiovascular disease. In the elderly, both β -cell dysfunction and insulin resistance can develop gradually, as part of the natural aging process. *Aim:* To evaluate the eventual relationship between several metabolic variables and factors related to insulin resistance and oxidative stress markers in two study groups: normoglycemic (NGT), controls (32 elderly women, age 69 ± 8 years, BMI 24 ± 4 kg/m²) and type 2 diabetes-mellitus (T2DM) (32 elderly women, age 69 ± 7 years, BMI 28 ± 4 kg/m²). *Methods:* We measured systolic (SBP) and diastolic blood pressure (DBP), serum lipids and lipoproteins (total cholesterol-TC, triglycerides-TG, LDL-C, HDL-C, apoB), basal glucose and insulin, insulin-resistance (IR) using the homeostasis model assessment (HOMA), serum autoantibodies against oxidized LDL (IgoxLDL), total serum antioxidant capacity (TAOC) and LDL susceptibility to lipid peroxidation (LDLox). *Results:* The T2DM subjects had significantly higher fasting serum glucose, TG, TC, LDL-C, apo B, IR index and lower values of HDL-C and TAOC than in the control group.

The levels of LDLox are higher ($P<0.05$) and the titers of IgoxLDL are lower ($P<0.05$) in diabetic patients compared with the control group. HOMA-IR is positively correlated with IgoxLDL ($P<0.05$), SBP ($P<0.001$), DBP ($P<0.03$) in T2DM patients. TAOC correlated negatively with serum IgoxLDL titer ($P<0.05$) and positively with TG ($P<0.001$) in the T2DM patients. *Conclusions:* 1. TAOC could modulate serum TG level and immune response to LDLox. 2. The IgoxLDL could be a part of the insulin resistance syndrome.

454. VILON APPLICATION IN THE TREATMENT OF CHRONIC GENERALIZED PARODONTITIS IN OLD AND VERY OLD PATIENTS

G.A. Ryzhak¹, S.K. Boyarova² (¹St. Petersburg Institute of Bioregulation and Gerontology; ²Tarkhov Military Sanatorium, Ministry of Defense of the Russian Federation; galina@gerontology.ru)

Chronic generalized parodontitis has 95–100% occurrence in old and very old patients. It is known, that in all age groups older than 50 years this pathology is the main cause of the patients' losing their teeth, which infringes the quality of their life and adversely affects their social adaptation. Thus, improving the therapy for chronic generalized hepatitis in the patients of older age groups is an important task of gerontological dental aid service. 172 patients with chronic generalized parodontitis were treated using two different methods: control patients received a conventional treatment, while the experimental group received Vilon in the dose of 10 μ g submucosally for 5 days. It was found, that the administration of Vilon to old and very old patients with chronic generalized parodontitis reduced the period of time necessary for the treatment by means of decreasing the depth of parodontal pockets, which was manifested in the reduction of parodontal indices. For example, the Ramfjord index was reliably reduced by 1,2 points in patients treated with Vilon (and by 0,3 points in the control); PMA index in the main group was reduced by more than 10 times (by 2,4 times in the control). Besides that, the mathematic model reflecting the course of the pathologic process in parodontal tissues showed a stabilizing effect of the treatment with Vilon, which was manifested in the characteristic signs of convalescence, while the control group showed a gradual worsening of parodontium tissues status. Thus, the treatment of patients with generalized parodontitis must be performed with respect to the characteristics of the development, character and spatial spreading of the pathologic process in the parodontium. For the complex treatment of chronic generalized parodontitis in old and very old patients, it would be advisable to use peptide bioregulator Vilon for diminishing the inflammations in the parodontium, as well as for improving the results and reducing the duration of the treatment.

455. COMPLEX ADMINISTRATION OF PEPTIDE GEROPROTECTORS FOR THE PREVENTION OF AGE-RELATED PATHOLOGY

G.A. Ryzhak, V.N. Rutkovskaya (St. Petersburg Institute of Bioregulation and Gerontology, Russia; galina@gerontology.ru)

Demographic tendencies of the recent years point out the increase in the proportion of older and very old persons in the population of economically developed countries. Thus, one of the most important objectives of gerontology is the prevention of age-related pathology and restoration

of organism functions, which are disordered with age. For this purpose the principles of bioregulation therapy, based on pathogenetic administration of peptide bioregulators in different diseases, pathologies and ageing, are actively used. The study of small peptides consisting of 3 amino acids enabled the design of a new class of geroprotectors, which demonstrate the efficacy exceeding that of extract-based medications and being noticeable in minimal doses. Experimental studies showed, that the composition and amino acid sequence of a tripeptide molecule determine its biological properties. The new class of peptide geroprotectors, known under the common name of «Cytogens®», includes 6 medications intended for prophylaxis and correction of the main functions of the organism. Clinical studies showed, that complex administration of Cytogens produces the strongest effects. So, the efficacy of Pinealon in the restoration and maintenance of brain functions in older and very old persons is significantly higher if Vesugen, which is intended for improving the functional activity of vessels, is also included into the treatment scheme. Combined administration of Cartalax, restoring the functions of joints and the spine, of Vesugen, normalizing blood microcirculation, and Crystagen, stimulating the functions of the immune system, significantly improves the functional status of the locomotor apparatus. Chonluten, intended for normalizing bronchial mucous coat functions, and Crystagen immunomodulator are good at correcting and maintaining respiratory system functions. Inclusion of Ovagen, normalizing the metabolism in liver cells, together with Vesugen into the complex treatment scheme optimizes the functions of digestive system in older patients. Thus, complex administration of Cytogens, i.e. geroprotectors based on small peptides, enables to correct and maintain the functions of different organism systems in older and very old persons.

456. THE EMOTIONAL EXPERIENCES OF ELDERLY PEOPLE LIVING IN NURSING HOMES

S. Salarvand, A. Heidarali (shsalarvand@yahoo.com)

Introduction: The promotion of health and economic status in all over the world resulted in increasing the older population. It's expected, at least 40% of the population over 75 years, need extensive health care services in the last parts of their lives. The rate of transferring the elderly to the nursing home is increasing in Iran too. Understanding elder's emotional experiences is important for living in nursing home and understanding why this relocation causes that elder views it as «final sign of failure» is important, because this perceptions and fears have negative effects on elder's adaptation in countering with this challenge. This study aimed to describe emotional experiences of elders living in nursing homes. *Materials and method:* The qualitative phenomenological approach and purposive sampling amongst elderly residents in private and governmental nursing homes in Esfahan city was applied. Sampling continued till data saturation and resulting sample size became 10 participants. The data was collected with in-depth interviews and field notes. Colaizzi's method was used for data analysis and the rigor was based on transferability and credibility. *Findings:* Three themes were extracted from the data (structural components of experience), including: 1 — Residents' emotional experiences in nursing home life 2 — Resident's emotional ex-

periences at the entrance in nursing home. 3 — Feeling of powerlessness. *Discussion and conclusion:* In this study, older people have shown various emotions to relocation and residence in nursing homes. Every elder, with different context and different history in life, described its uniqueness experiences. In addition, pay attention to social, financial, health supports and mental, spiritual and physical needs of elders should be met through whole care, because only attention to physical needs of them, denies hopeful, meaningful and purposive life in nursing homes.

457. COMORBIDITY AND ANTIEPILEPTIC TREATMENT OF ELDERLY EPILEPTIC PATIENTS IN SPAIN

J. Salas-Puig¹, G. Garcia-Ribas², C. Bas³, D. Sanchez³, R. Yubero⁴ (¹Hospital General de Oviedo, Asturias; ²Hospital Ramon y Cajal, Madrid; ³Departamento Medico. Janssen-Cilag, Madrid; ⁴Hospital Clinico San Carlos, Madrid, Spain; evra@lundbeck.com)

Objectives. To evaluate the comorbidity, describe the antiepileptic drug treatment provided and to assess the impact of illness on the quality of life of elderly epileptic patients. *Material and Methods.* Crossover epidemiological study of the clinical practice conditions in Spain. The total number of patients who attended to the Neurological services in 62 centres were registered during 5 days. For those patients diagnosed with epilepsy or that presented with a first seizure at 65 years of age or older, information related to demographic characteristics, family history, comorbidity and treatment were collected for their assessment. *Results.* A total of 3085 patients >65 years old were registered initially. 177 of them met the necessary selection criteria to participate in the study. 81,9% of selected patients presented with a concomitant illness, the most frequent being high blood pressure (40,7%), acute stroke (35%), high cholesterol serum levels (24,3%), diabetes (21,5%), ischemic cardiopathy (14,1%), digestive pathology (9,6%) and dementia (7,9%). Drugs for prevention of acute stroke, ischemic cardiopathy, hypertension and high cholesterol serum levels were most frequently used as concomitant medication within the study population. 75% of patients had received antiepileptic therapy prior their participation in the study. Monotherapy was the most frequent therapeutic regimen provided to the patients (70%) followed by 12% of evaluated patients that received multi-therapy regimen. The drugs most frequently used as monotherapy after the study visit were: Topiramate (19,8%) followed by lamotrigine (14,7%). An important decrease in the quality of life of the recruited patients was observed through the questionnaire SF-12, especially in both, the physical (40,37) and mental (46,11) components of the teSt. *Conclusions.* The most frequent pathologic comorbidities found in epileptic elderly patients were: Hypertension, acute stroke, high cholesterol serum levels and diabetes. 75% of assessed patients had received antiepileptic drugs prior to the study visit. Monotherapy was the most common type of regimen used. Topiramate was the most commonly used antiepileptic drug as monotherapy as part of the regimen for this study population. The quality of life of the patients assessed by SF-12 was worse than in the general population, specifically in the physical domain.

458. EPILEPSY AND EPILEPTIC SEIZURES IN SPANISH ELDERLY PATIENTS

J. Salas-Puig¹, G. Garcia-Ribas², C. Bas³, D. Sanchez³,

R. Yubero⁴, P. Gil⁴ (¹Hospital General de Oviedo. Asturias, Spain; ²Hospital Ramon y Cajal. Madrid, Spain; ³Departamento Medico. Janssen-Cilag. Madrid, Spain; ⁴Hospital Clinico San Carlos, Madrid, Spain; evra@lundbeck.com)

Objectives. To assess the incidence of epileptic seizures, the prevalence of epilepsy and to determine the most frequent reasons for consultation to neurology services under clinical practice conditions by the elderly population in Spain. **Material and Methods.** Crossover epidemiological study of the clinical practice conditions in Spain. All patients who attended to the Neurological services in 62 Centres were registered during 5 days. For those patients diagnosed with Epilepsy or who consulted due to a first seizure at 65 years old or more, information related to demographic characteristics, family history, comorbidity and treatment were collected for their assessment. **Results.** 3085 patients >65 yrs attended in the Neurology clinics were included in the study. The most frequent clinics attended were: Hospitalary: 48%, Outpatient: 38,0% and specific for epilepsy: 9,2%. 758 patients from the total population consulted due to epilepsy (27,6%) with a prevalence of epilepsy in the group >65 yrs of 9,9%. The incidence of epileptic seizures within the study period and in the study group was approximately 1,8%. The diagnosis of epilepsy was made in 249 patients (8,1%). The median of age for epilepsy diagnosis was 71 years old. The median number of seizures was 5. Approximately 4,5% of patients studied had family history of epilepsy. 59,3% were males and 40,7% females. The main reasons for consultation were as follows: Dementia (18,7%), CVA (16,8%) and Parkinson's disease (14,0%). 60,5% and 32,2% of patients presented focal symptomatic epilepsy and focal Cryptogenic epilepsy respectively. Accordingly to the type of crisis, 42,4% presented partial seizures with secondary generalization followed by single partial seizures (28,8%), complex partial seizures (26,6%) and generalized tonic-clonic seizures (16,9%). **Conclusions.** The incidence and prevalence of epilepsy in the studied population (>65 yrs) were 1,8% and 9,9% respectively. The prevalence of late onset epilepsy was approximately 8,1%. The most important places for consultation were the hospital and outpatient clinics. Epilepsy was the main reason for neurological consultation in patients >65, followed by dementia, CVA and Parkinson's disease. The most frequent types of epilepsy in the study population were focal symptomatic and focal cryptogenic. Secondary generalized seizures were the most frequent types of seizures

459. EFFECT OF SPORT-RELATED TRAUMAS ON THE ADAPTIVE CAPACITIES OF OLD AND VERY OLD PERSONS

S.A. Salehov¹, O.M. Ivko² (¹«On Clinic» Institute of Modern Medicine, Almaty, Kazakhstan; ²St. Petersburg Institute of Bioregulation and Gerontology, Russia; ssalehov@mail.ru)

Adaptation to physical loads is a reaction of the whole organism, but heavy physical loads and specific alterations in different organs may provoke diseases. Some researchers consider professional sports to disrupt the homeostatic balance of the organism. This is especially true for «big-time» sports, being characterized by extensive and intensive training (2–4 workouts a day) for several years. In this case excessive loads and stress play the role of etiologic and complicating factors for the damage of tissues

and development of diseases. All this is even more aggravated in the process of ageing and infringes the adaptive capacities of the organism. Our work was aimed at estimating the capability of ex-sportsmen to adapt to their conditions of life. The experimental group consisted of 56 persons aged 59–84 years, who were professional sportsmen in their young years and attained the rank of a Master of Sports. The control group was made up of 61 person aged 62–87 years, who were never engaged in any sports. To estimate the quality of life (QL) of ex-sportsmen, we used our own questionnaire, containing some questions reflecting the extent of their adaptation to the conditions of their life. The questionnaire was made up basing on the common test form «SF-36 Health Status Survey» and special test form «VF-14 — Visual Function». The comparison of test results showed a reduced quality of life in both groups, but the self-estimation of health status of ex-sportsmen was lower, than of their equals in age from the control group. So, 82,1% of the main group participants regarded their quality of life as significantly or sharply reduced, while the control group had only 44,3% of respondents with significantly reduced or sharply reduced QL index. Low QL self-estimation of ex-sportsmen was related mainly to the inability of the patients to engage in significant physical activities. Multiple diseases of the locomotor apparatus, as well as neurological and vision disorders affected their physical activity, making them to stay indoors for the greater part of time. Lack of movement was the main cause of their changing of the active way of life, and, as a consequence, of their poor state of health. The obtained data prompt a conclusion that disease severity and adaptive capacities of the patients' organism do not correspond with each other.

460. QUALITY OF LIFE OPTIMIZATION IN OLD AND VERY OLD PATIENTS WITH ERECTILE DYSFUNCTION

S.A. Salehov¹, O.M. Ivko² (¹«On Clinic» Institute of Modern Medicine, Almaty, Kazakhstan; ²St. Petersburg Institute of Bioregulation and Gerontology, Russia; ssalehov@mail.ru)

The influence of sexual disorders on the quality of life of men is beyond any doubts. Sexual activity is inevitably reduced against the background of hormonal transformations of the organism and development of accompanying pathologies in old and very old age. Our study was aimed at estimating the effect of restored erectile function on the quality of life in old and very old men. We analyzed the data of an anonymous volunteer poll conducted with 268 patients of the «On clinic» Institute of Modern Medicine, aged 59–84, who complained of erectile dysfunction. It was found, that the subjective conception of sexual disorders is frequently regarded as a condition, adversely affecting the quality of life to a much higher extent, than somatic pathology, which is accompanied by drastically reduced working capacity and lack of movement. Dopplerography of penis vessels showed 40,5–86,3% blood circulation deficiency. During tests with vasoactive medications 212 patients showed only functional disorders of the blood circulation, while in 56 patients these disorders were related to a combination of organic and functional disorders. After 2 months of complex, individually planned therapy 127 patients reported spontaneous erections, 47 more patients — after 3 months, and 32 more patients — after 4 months of treatment, only 39 patients more having sponta-

neous erections after longer terms of treatment. In the rest of cases erections were observed only after intracavernous injection therapy. Positive dynamics were reported by all patients. Spontaneous erections occurring not only during treatment, but also after the completion of therapy courses provided for the subjective comfort in the conception of the patients' own sexual potency, improved the quality of life of patients and increased their social activity. Thus, restored erection in old and very old men exerted a positive effect on their quality of life.

461. NUTRITIONAL STATUS FOR AMBULATORY DEMENTIA PATIENTS AND ITS MAIN CORRELATION WITH CAREGIVERS PSYCHOSOCIAL VARIABLES: THE NUTRIALZ STUDY

A. Salva¹, E. Fernandez¹, S. Andrieu², E. Schiffrin³, B. Vellas², and the Nutrialz Group⁴ (¹Aging Institute, Universitat Autònoma de Barcelona; ²Service de Gerontologie Clinique, Hospital Pourpan, Caselardit, Toulouse; ³Nestlé Nutrition, Vevey, Switzerland; ⁴Nutrialz Group; antoni.salva@uab.es)

«Nutriactiv» is a socio-educative and nutritional intervention program to prevent weight loss and loss of function in dementia patients. To validate this program a prospective, cluster randomised, study was carried (Nutrialz study) in 946 people with dementia living at home. *Objective:* The general purpose of this communication is to present the data at baseline focusing on the correlation between the nutritional and the psychosocial parameters. *Methodology:* 11 Hospitals had been involved in the study. Patients were recruited from ambulatory diagnostic unit and day hospital care. Total of 946 patients were included. The baseline interview include: sociodemographic and socioeconomic variables (age, gender, educational level, marital status); diagnostic, treatments, MMS, a list of comorbid conditions; activities of daily living (ADL, IADL), Zarit Scale, brief-NPI, and nutritional status as measured by the Mini Nutritional Assessment. All participants or their family signed the inform consent form. *Results.* Mean age was 78,99 (SD 7,27), 68,1% were women; 44,9% lives with their partner; 74,2% has a dementia type Alzheimer, and it has been 5,25 years since symptoms of dementia and 2,78 years since the diagnostic; mean MMSE score was 15,41 (SD 6,18); mean weight was 64,31 (SD12,52) kg; mean BMI was 26,96 (SD4,53) (<19: 2,8; 19–21:5,4; 21–23: 9,9; ≥23:81,9). Mean ADL without difficulties was 3,24/6 (SD 2,09).; mean IADL without difficulties was 0,71/8 (SD 1,56); mean number of symptoms in the NPI was 4,43 (2,59) severity score 7,87 (SD 5,94) and distress score 11,33 (9,01); mean Zarit scale was 27,41 (SD15,50); mean MNA was 23, 19 (SD 3,49). >17: 5,2%, 17–23: 31,6%, ≥23: 63,2%. *Conclusions.* An important percentage of patients with Dementia are at risk of malnutrition. Many factors could contribute to that and between those psychosocial variables as caregiver burden or compartmental troubles are relevant.

462. NUTRITIONAL STATUS AMONG ELDERLY PEOPLE LIVING IN THE COMMUNITY

A. Salva, R. Lucas, J. March (Aging Institute. Universitat Autònoma de Barcelona; antoni.salva@uab.es)

Objective. Our aim is to investigate sociodemographic and health variables associated with risk of malnutrition in a community sample of 2.000 elderly people. *Methods:* This is a cross sectional study on a random sample of 2.000

elderly people (65 and older) living in the community in Catalonia (Spain). Participants completed a face-to-face interview which contained the following information: sociodemographic and socioeconomic variables (age, gender, educational level, marital status); perception of health, a list of comorbid conditions; activities of daily living (ADL, IADL) and nutritional status as measured by the Nutritional Status Assessment. All participants signed the inform consent form. *Results:* Mean age was 74.4 y.o., 58.4% were women; 59% had primary school and 18.8% reported not having studies but they knew how to read and write; 71% were retired. One quarter of the sample were living alone, with higher percentage (31%) among women (0.001). In relation to health perception, 61% reported their health as good/very good/excellent, being worst among women than men (0.001) and as age increases. Mean number of comorbidities was 4.3. More prevalent comorbid conditions were: musculoskeletal, cardiovascular and hypertension. The majority of elderly (92.7%) had a good nutritional status whereas 7.3 were at risk of malnutrition. Women compared to men had higher risk of malnutrition (10.6% vs 3.8%). Also, the risk increased with increasing age. On the multiple regression analyses, risk of malnutrition was associated with gender (female), being older and having depressive symptoms. *Conclusions.* These preliminary results indicate the need to know these variables when caring for elderly, in order to make the most satisfactory intervention.

463. DEVELOPMENT AND VALIDATION OF A CHRONIC DISABILITY MEASUREMENT INSTRUMENT IN SPAIN

A. Salva, T. Rivero, M. Roquu (Aging Institute, Universitat Autònoma de Barcelona; antoni.salva@uab.es)

Cross-sectional validation study for the «Instrumento de Valoración de la Dependencia» (IVD), a questionnaire built to measure chronic disability in people over 3 years old which will be used in Spain under the policy of a new Dependency law. Through a face-to-face interview, the instrument analyzes the difficulties and need of external help in performing a set of daily living activities, selected from the International Classification of Functioning, Disability and Health. The activities considered are eating and drinking, continence and toileting, washing, other body care, dressing, health maintenance, body transferences, and getting around both inside and outside. IVD ranges from 0 to 100, with 0 corresponding to a fully autonomous individual and 100 corresponding to a completely dependent one. The study has been carried out in a convenience sample of 2416 Spanish disabled individuals, both institutionalized and noninstitutionalized. The sample was stratified on age group (3–17, 18–64 and over 65 years) and primary disability (mental delay, neuromuscular, osteoarticular, developmental disorders, other mental problems, internal organs and skin disorders, visual impairment, cognitive disorders, other). There were 1156 cases with mental disease or intellectual disability (MDID) and 1260 with exclusively physical disability (nonMDID). Participants were administered the IVD, the Barthel Index (BI) and an adapted version of Mini Mental State Examination. IVD generated a broad distribution of scores (mean 37.97, standard deviation 33.10), with no signs of ceiling effect. IVD shows high internal consistency (reliability), with Cronbach's alpha values of 0.947 for the global sample, and 0.941 and 0.950 for the MDID and nonMDID subgroups, re-

spectively. Construct validity of IVD is shown by its high and significant correlation to BI, both in the whole sample (Pearson's rho -93.9, $p < 0.001$), as well as in the MDID (rho -94.2) and non MDID subgroups (rho -93.8). IVD is able to discriminate between levels of chronic disability, and its mean values significantly decrease as the level of dependency measured with BI decreases (t-test, $p < 0.001$). Mean IVD in the group of individuals with BI 0-15 is 89.3, in the BI 20-35 group is 70.0, in the BI 40-55 group is 50.2, in the BI 60-90 group is 24.3 and in the BI 95-100 group is 4.6. We conclude that IVD is a reliable and valid tool to measure chronic disability. This instrument collects specific information regarding intellectual limitations to perform daily living activities, and is able to discriminate the physical and mental aspects of chronic disability.

464. FACTORS ASSOCIATED WITH FUNCTIONAL DECLINE ONE MONTH AFTER HOSPITALIZATION FOR ACUTE ILLNESS

E. Sanchez-Garcia, B. Montero, A. Martinez de la Casa, J. Ortiz, J.A. Serra, M. Vidan (*Hospital General Universitario Gregorio Maranon, Madrid, Spain; elisabet_sanchez@hotmail.com*)

Objective: To study factors associated with functional decline one month after hospitalization for an acute disease. **Design:** Prospective, observational study of consecutive patients aged 70 years or older, hospitalized during 6 months. Exclusion criteria: severe dementia, severe disability or hospitalization in last three months. **Setting:** Geriatric Acute Care Unit of a University Hospital. **Methods:** Demographic characteristics, comorbidity (Charlson Index), cause of admission, time in Emergency Department, severity of illness (APACHE II), in-hospital delirium incidence, procedures, and mortality were analyzed. Pre-admission, discharge and one-month functional status was evaluated. Functional decline was defined as the loss of at least one of the basic activities of daily living (bADL) respect to preadmission status. **Results:** 141 patients were included (age 85 ± 7.3 yrs). Only 24% were independent to perform all bADL and 66% any instrumental activity. The 40% were independent outdoors and 38% participated in social activities. The main reasons of hospital admission were infectious diseases in 35% and cardiovascular diseases in 23.5%. In-hospital mortality was 6.4% and length of stay 9.2 days. One month mortality rate was 17% and functional decline was observed in 46% of survivors, 60% of them had impaired their functional status during hospitalization. Factors associated with one month functional decline were in-hospital delirium (65 vs 35%, $p = 0.015$), bed rest >48 hours, urinary catheter, and intravenous fluid therapy. Patients with better functional baseline status had higher deterioration risk. Multivariate analysis revealed delirium during hospitalization and functional baseline status as the main independent factors associated with one month functional decline. **Conclusions:** Hospitalization for an acute illness causes a functional decline that continues after discharge and it is observed in patients with different functional status. Several modifiable procedures during hospitalization, are associated with this deterioration. In-hospital delirium is one of the main factors contributing to a persistent loss of autonomy.

465. CORONARY ARTERY BYPASS GRAFTING IN ELDERLY PATIENTS

Y.A. Schneider, A.V. Krasikov, C.V. Kuznetsov (*Medical Academy of Postgraduate Studies, St. Petersburg, Russia; alexkrasikov@mail.ru*)

Objective. The aim of this study is a comparative analysis of operative results of the patients of two age groups — younger than 60 years old and older than 60 yrs. **Methods.** From October 2000 till December 2006, 690 patients undergone isolated coronary artery bypass grafting. 254 (36,8%) patients (1 group) were older than 60 yrs. 436 (43,2%) patients were younger than 60 yrs (2 group). In 1 group 63,2% of the patients were of 60-65 yrs old, 31,1% of the patients were 66-70 yrs old and 5,7% of the patients were 71-75 yrs old. Mean age was 64,9 yrs. In 2 group the age varied from 33 yrs to 59 yrs, the mean age was 50,2 yrs. 83,3% of the patients in the 1 group were male and in 2 group — 90,6% ($p < 0,05$). In the 1 group angina of the III class was in 64% of the patients and of IV class — в 22%. In 2 group — 57,7% and 11,9% ($p < 0,05$) accordingly. Unstable angina was in 7,54% of the patients of the 1 group and 4,2% in 2 group ($p < 0,05$). Acute myocardial infarction was in 38,67% of the patients of 1 group and in 40,6% of 2 group ($p > 0,05$). **Results.** In 1 group only mammary artery was used only in 4,7% of the patients and in 14,1% of the patients of 2 group. In 24,5% и in 33,9% of the patients of 1 and 2 groups accordingly autoarterial grafting was performed, in 70,8% и 63,0% of the patients — autoarterial and autovenous and in 4,7% и 3,1% — only autovenous. 61,3% of the operations in 1 group и 51,0% in 2 group were performed on-pump, 35,8% и 45,3% — off-pump and in 2,9% и 3,1% of the cases there was a conversion from off-pump to on-pump. 1 distal anastomosis was performed in 2,8% and 13,0% ($p < 0,05$) of the patients accordingly, 2 — in 22,6% and 24,5% ($p < 0,05$) of the cases, 3 — in 42,4% and 35,4%, 4 — in 26,6% and 22,9% ($p < 0,05$), 5 — in 2,8% and 1,6% ($p > 0,05$), 6 and 7 distal anastomoses were performed in 1,9% and 2,6% ($p > 0,05$) of the cases. The mean number of distal anastomoses in 1 group was 3,2, in 2 group — 2,9 ($p < 0,05$). In the patients of the 1 group radial artery was used in 74,2% of the cases. 28% of them were sequential. In 2 group radial artery was used in 79,8% of the patients. 21,8% were sequential. Left internal mammary artery was used in 86,8% and 81,8% of the patients of both groups. In 9,4% и 12,5% ($p < 0,05$) of the patients endarterectomy from coronary arteries was done. Diffuse lesion of all coronary arteries was found in 12,3% and 23,4% ($p < 0,05$) of the patients. Mean time of aorta cross clamping in the patients of both groups was 70 minutes and 68 minutes ($p > 0,05$). Mean bypass time was 116 minutes and 123 minutes ($p < 0,05$). Mean hospital stay time was 17,2 and 16,4 days in both groups. In postoperative period 2 patients died in each group. Total mortality was 1,96% and 1,6% ($p > 0,05$). **Conclusions.** CABG in patients older 60 yrs could be successfully provided with good immediate results using all modern surgical technique without significant difference comparing with the patients of younger age.

466. RISK OF ENDOVASCULAR TREATMENT IN ASYMPTOMATIC PATIENTS: DOES AGE MAKE A DIFFERENCE?

J. Schofer¹, E.V. Sedova², K.L. Kozlov³ (¹Hamburg University Cardiovascular Center, Hamburg, Germany; ²Cardiologic, St.Petersburg, Russia; ³St.Petersburg Institute of Bioregulation und Gerontology, St. Peterburg;

katya_sedova@mail.ru)

Recently carotid artery stenting (CAS) has emerged as an alternative to carotid endarterectomy (CEA). The goal of both procedures is to prevent strokes due to embolism of parts of the carotid artery plaque into the brain [Sterpetti A.V. et al., 1991; Geroulakos G. et al., 1994; Van Damme H. et al., 1992]. Randomized trials have shown that carotid artery stenting has short- and long-term outcomes comparable to CEA in terms of stroke and death. [CAVATAS Investigators: a randomized trial. 2001; Yadav J, et al. 2004]. Compared to younger patients, the prevalence of carotid artery stenosis is higher in elderly patients: 0.5% among 60 years old patients versus 10% among patients older than 80 years [Ricci S, et al. 1991; Kronmal RA 1992]. Elderly patients, however, are at higher risk of developing complications during CEA. Endovascular treatment of these patients, who often present with a significant co-morbidity, might be a reasonable alternative to surgery. However, also after CAS the perioperative complication rate is increasing with the age of the patients [Hobson RW 2nd, Brott T, et al. CREST 1997; Kastrup A, et al. 2004]. We also found a tendency for a higher periprocedural risk of death and stroke in patients older than 75 years (n=214) compared to younger (n=481, 5.61% vs 3.12%, not significant). In a subanalysis including age and diabetes mellitus only the diabetic patients older than 75 years had a significantly higher risk (12.5%) than younger diabetics (3.57%), as well as older non-diabetics (3.61%), and younger non-diabetics (2.98%, p=0.029). In a multivariate logistic regression analysis including all strokes and deaths and major strokes and deaths, diabetes mellitus was associated with an odds ratio of 5.2, age older than 75 years with an odds ratio of 3.6 for death and major stroke, but not death and all strokes. Thus, compared to nondiabetic patients younger than 75 years, older diabetic patients have an odds to experience a major stroke or death within 30 days of CAS by a factor of almost 20. In conclusion, the periprocedural risk of CAS is less dependent on age but mainly influenced by the combination of age older than 75 years and the presence of diabetes mellitus. Age-adjusted information on the longer-term neurological outcome of patients undergoing CAS is needed.

467. DEMENTIA AND PLASMATIC LEVEL OF HOMOCYSTEINE

R.M. Scoyni¹, I. Trani², C. Schiaffini¹, B. Felli¹, L. Aiello¹, M.T. Pacitti³, V. Camponi¹, M.R. Masin¹, D. Carratelli³, C. Morocutti⁴ (¹*Casa di Cura «Villa Grazia»*; ²*Ospedali riuniti Anzio-Nettuno ASL RM H*; ³*UOC Neurologia Ospedale S. Spirito Roma ASL RME*; ⁴*Universita di Roma «La Sapienza» Neurologia*; *rscoyni@yahoo.com*)

Vascular dementia is the second most common cause of cognitive decline, its frequency following that of Alzheimer's disease. Vascular dementia is related to the damage of brain vessels that results in reduced neuronal nutrition. The main risk factors for this disease are cardiovascular ones: hypertension, diabetes, hypercholesterolemia, obesity, smoking, age, lifestyles, familiarity and stress. Even heart disease, such as atrial fibrillation and heart failure, or atherosclerotic plaques in the carotids can be responsible of severe brain damage with dramatic consequences in the functionality of nervous structures. Many studies in the past years have focused their attention on the relation

between brain and heart diseases. Efforts have been made to find biological makers of early or subclinical cognitive decline; a lot of studies and publications on Alzheimer's disease regarded the presence or absence, as a risk factor, of apoE (apolipoprotein E) in its allelic form epsilon 4. In recent years studies have focused on the role that low level of Vitamin B12 and folate, and the often related high level of homocysteine, can play as direct or indirect risk/causing factors of neuronal dysfunction. Homocysteine is a product of the catabolism of methionine, one of the building amino acids of proteins. High level of homocysteine is a well known risk factor for indirect vascular damage. High level of homocysteine can be found in patients affected by cerebrovascular diseases who have no other known risk factors for that disease, so that Hyperhomocysteinemia can be considered an independent risk factors for vascular accidents especially in younger patients. Hyperhomocysteinemia can be easily treated by the administration of folate and, in some cases, vitamin B12 and B6. Several studies have demonstrated the correlation existing between high level of homocysteine and a higher risk of developing dementia and/or Alzheimer's disease. «Villa Grazia», on the territory of ASL RM E, is a clinic that works in the field of cognitive rehabilitation for dementia and behavioural disturbances. «Villa Grazia» deals with patients affected by moderate to severe cognitive decline who cannot be easily managed at home. National and international guidelines recognise as effective pharmacological therapy drugs such as donepezil, rivastigmine, galantamine, memantine and as adjuvant therapy supplies of foline, vitamin B12 and tocoferol (Vit. E). Recommended treatment schedules are adopted in «Villa Grazia». Specific drugs are used to treat behavioural disturbances. Non pharmacological or rehabilitation therapies (informal/formal ROT, psychosensorial stimulation, occupational therapy, motor stimulation) are used to manage patients with cognitive decline. Patients who are admitted to our structure are affected by moderate to severe vascular or mixed forms of dementia and they undergo a complete evaluation of risk factors for dementia among which we include blood level of homocysteine. Despite the fact that Hyperhomocysteinemia is a well recognized risk factor for vascular disease, little attention is given to the damage it can cause on a cerebrovascular level. We describe data from 20 patients admitted to «Villa Grazia» in October-November 2006. Of these 20 patients 11 were females (mean age 73.4±7.4) and 9 were males (mean age 76.2±5.6), the mean MMSE (Mini Mental Examination Score) score was 7.85 (DS 5.3), half of them had neuroimaging positive for vascular damage, three had atrial fibrillation and five anamnestic ischemic heart disease. At admittance routine blood tests were made and in all of them homocysteine (in an external laboratory, using a HPLC method, normal range 6-15 mcmmol/l), vitamin B12 (normal range 179-1162 pg/ml), folic acid (normal range 3-17 ng/ml) were also tested. All patients showed high level of homocysteine (mean 23.2 mcmmol/l; DS 12.45). In female the higher level was 29 mcmmol/l, the lower 14 mcmmol/l, while in males the maximum was 54 mcmmol/l and the minimum 14 mcmmol/l. Vitamin B12 and folic acid values were normal: mean 316.55pg/ml — DS 168.08 for Vitamin B12 and mean 4.6ng/ml — Ds 3.15 for folic acid. Using blood test for homocysteine we were

able to detect in all of the evaluated patients an additional risk factor for vascular disease which has already caused brain dysfunction, and had not been previously detected and treated. Although there are no studies that prove the positive effect of homocysteine normalization on brain function, we believe that, especially in subclinical or early phases of vascular dementia, the limitation of vascular damage can reduce brain dysfunction. Testing homocysteine we were able to start a specific therapy using folic acid and vitamin B12 that we wouldn't have started according to normal levels of vitamin B12 and folic acid.

468. MOLECULAR-GENETIC MECHANISMS OF RESISTANCE TO THE STRESS IMPACT IN HUMAN AGEING AND ACTIVE LONGEVITY

V.F. Semenov¹, A.M. Sapoznikov² (¹Research institute of Gerontology; ²Institute of Bioorganic Chemistry; gerinfo@mail.ru)

Resistance of the organism's cells to various stresses is directly correlated with the life span of individuals. Ageing is accompanied with accumulation of abnormal serum proteins in human. For the prophylaxes of pathology development induced by stress impact on the organism it is important to take in consideration the basal regulation mechanisms of oxygen active forms (OAF) production of cells. We have studied the effect of function of heat shock (HS) gene and its protein (HSP) family 70 on production OAF by neutrophils of peripheral blood of patients from 16 to 95 years old using the method of luminol dependent chemiluminescence. Expression HSP 70 on cells was determined by flow cytometry using monoclonal antibodies to HSP 70. Chemiluminescence of neutrophils was induced by opsonized zymosan or autologous serum. Addition HSP 70 to neutrophils has suppressed production of OAF. The level of HSP 70 expression on neutrophils has been the reverse relation to synthesis of OAF. Alteration of protein structure in serum was obtained by heating on water bath or treatment of ultraviolet rays (200-280 nanometers) before their interaction with neutrophils. Autologous serum of different age patients after heating and aggregation of proteins has stimulated synthesis OAF in less degree than normal autologous serum. Decreasing of stimulatory activity of autologous serum on production of OAF by neutrophils was observed also after treatment by ultraviolet rays of serum. These data may be demonstrated influence of changed autologous proteins phagocytosis on function HS gene and decreasing the level of OAF by HSP 70. We suppose the existence of serum mechanism of ageing as result of action of stress factors immediately on structure serum proteins which changes function HS gene and synthesis HSP 70 — the major regulator of production of OAF by phagocytes.

469. NEEDS ASSESSMENT OF THE ELDERLY CITIZENS IN BELGRADE: AGED CARE AND POLITICAL TRANSITION

G. Sevo¹, M. Tasic¹, L. Kozarevic¹, B. Tomasek¹, S. Jankelic¹, L. Pokrajac² (Institute of gerontology, Belgrade, Serbia; sevo1984@yubc.net)

Introduction: Elderly persons represent particularly vulnerable population segment. Given their rapid increase in the number and in proportion, aged care is increasingly gaining importance in the political agenda of health planners. At present, very little is known on the extent and profile of needs and services that are required for the elderly citizens of Belgrade. Political transition and consequent reform of

health and social welfare sectors place it in a particularly sensitive context. *Methods:* This work relies on two cross sectional studies carried out from 2004-2006. Home administered questionnaire assessed the needs for wide range of aged care services on two representative samples of elderly citizens from ten municipalities of Belgrade City. The first sample included age segment 65-79 years, while the second one included «oldest old» i.e. those aged 80 years and older. *Results:* questionnaire assessed following domains of health and social wellbeing: (1) general socio-demographic information (2) social activity and social integration (3) nutrition and health risks, (4) health state, based on self reported morbidity and presence of 24 signs and symptoms (5) functional status assessment based on participants' self-reported ability to perform various activities of daily living and instrumental activities of daily living (6) utilization and availability of various health services (7) assessment of needs for various specialized aged care services and (8) SF-36. This both quantitative and qualitative information was aimed to providing framework for aged care planning, as well as pertinent information for all other interested parties involved in the aged care agenda. Interestingly, while results of this research were presented on the 7th National Congress of Gerontology, they attracted little attention (if any). This lack of interest is very hard to explain given the rapid political and economic transition which impose fundamental reforms of the health and social welfare sector, and consequently also of aged care. *Conclusions:* While missing local comparison context renders interpretation or present results quite difficult, one general conclusion that can be drawn from this dataset is that current extent of needs significantly exceeds available resources and capacities in the area of aged care. Integrative solutions and systematic planning are therefore needed in the future development of aged care services in Serbia. No matter of the political context, in order to make accurate planning, it is an absolute prerequisite to have a clear understanding of the actual needs for the population segment in question.

470. STRESS-REACTIVITY INDEXES IN ELDERLY WOMEN WITH A HIGH CARDIOVASCULAR RISK

A.V. Shabalin¹, I.V. Gerasimova², N.A. Toropchina³ (¹State Medical University, Novosibirsk; ²Municipal Hospital No2, Kemerovo; ³Kemerovo State Medical Academy, Kemerovo, Russia; shabalin@soramn.ru)

The aim of the study was to investigate the stress-reactivity features of cardio-vascular system in elderly and old women with essential arterial hypertension (HBP — high blood pressure) with a high cardiovascular risk. The group under observation was presented by 26 females with HBP stage II, risk 3 at the mean age of 67.4±6.8 years old. The European Recommendations (2003) were taken into account in making the diagnosis of HBP. 24-hour ECG monitoring with the heart rate variability and stress-ECHO with psycho-emotional exertion test of mathematical count were conducted for all the patients. The comparison group was composed of 22 females with HBP at the age of 42.3±3.4 years old. It has been found that elderly women with a high cardiovascular risk differ from the comparison group by authentic (P<0,05) limitation of cardiovascular stress-reactivity with the reduction of increase rate in systolic arterial pressure (SAP), minute circulation blood volume (MCBV), and decrease of cardiac output (CO) at the test peak. Both in the comparison group and in the elderly women under examination psycho-emotional exertion test

was associated with the development or increase of the left ventricle diastolic dysfunction rate. The correlation-regressive analysis showed that the examined patients' age, total spectrum of heart rate variability in accordance with 24-hour ECG monitoring as well as the weight index of left ventricle myocardium produce an independent impact on the cardiovascular reactivity limitation in elderly women with a high cardiovascular risk. Thus, to reveal the phenomenon of the cardiovascular stress-reactivity limitation with a modeled psycho-emotional stress may be helpful in assessment of clinical condition and cardiovascular risk stratification in elderly and old people.

471. OPPORTUNITIES OF HEART RATE TURBULENCE ANALYSIS IN ASSESSMENT OF CLINICO-FUNCTIONAL STATUS IN ELDERLY MEN WITH A HIGH CARDIOVASCULAR RISK

A.V. Shabalin¹, A.A. Konovalova², E.N. Guliaeva³, E.B. Solomatina³ (¹State Medical University, Novosibirsk; ²M.A. Podgorbunskiy Municipal Hospital No3, Kemerovo; ³Kemerovo State Medical Academy, Kemerovo, Russia; shabalin@soramm.ru)

The aim of the study was to investigate the heart rate turbulence indexes in elderly male patients with essential arterial hypertension (HBP — high blood pressure) with a high cardiovascular risk on the basis of 24-hour ECG monitoring. The group under observation had 55 males with HBP stage III, risk 4 at the mean age of 68.4±2.3 years old. The European Recommendations (2003) were taken into account in making the diagnosis of HBP. The life quality (LQ) was established due to SF-36 assessment scale, the level of depression — with the Beck's questionnaire, the degree of reactive and personal anxiety was determined by the Ch.Spilberg and Yu.Khanina scale for all patients. The test with a 6-minutes walk, study of a biologic age by the V.P.Voitenko method as well as ECG, ECHO and 24-hour ECG monitoring with the assessment of heart rate variability were also conducted. Besides, the heart rate turbulence with the turbulence onset assessment (TA) and the turbulence slope (TS) were studied on the basis of 24-hour ECG monitoring. The comparison group had 25 males with HBP at the age of 46.3±3.8. It has been found that elderly patients with high cardiovascular risk differed from the comparison group in TA indexes increase and TS decrease ($P<0.05$). Later elderly men split into two subgroups due to TA value at night time. It was found that pathologic values of TA at night are associated with authentic ($P<0.05$) increase of body weight index (BWI) and 24-hours mean heart rate (HBR), decrease of circadian index, reduction of power in low- and high-rate element of heart rate variability spectrum, lengthening of QT on the basis of standard ECG, the increase of minute circulation blood volume (MCBV) and index of left ventricle myocardium weight (iLVMW). The correlation analysis method showed the reliable reverse correlation associations of TA at night with patients' biological age, the level of systolic arterial blood pressure, circadian index of HBR. Turbulence slope of cardiac rhythm was directly associated with all spectral indications of 24-hour heart rate variability and reversely — with the level of people's personal anxiety and their biological age. The equation of multifactor regression analysis containing 12 parameters of clinico-functional status of elderly people as independent variables showed that the weight index of the left ventricle myocardium produces independent effect on the decrease of TA at night. *Conclusion:* Heart rate turbulence analysis in elderly patients with HBP can specify the degree of their clinical status severity and may be helpful

in stratification of the cardiovascular risk.

472. ON THE ASSESSMENT OF OPERATIONAL RISK IN OPHTHALMOSURGICAL PATIENTS OF ELDERLY AND SENILE AGE

A.V. Shabalin¹, E.G. Onizhenko², A.L. Onizhenko² (¹State Medical University, Novosibirsk, Russia; ²State Institute for Postgraduate Medicine, Novokuznetsk, Russia; shabalin@soramm.ru)

Purpose: to assess the degree of operational risk in ophthalmosurgical patients of elderly and senile age. *Materials and Method.* Retrospective analysis of 973 case records of patients with age cataract. The rate of arterial hypertension cases in patients of elderly and senile age has been studied. Patients with arterial hypertension (107 cases) and with normal AP level (30 cases) have been under AP monitoring (before the operation, during the process of cataract extraction, and early post operational period). Patients with arterial hypertension have been divided into 3 subgroups depending on combinations of antihypertensive medical drugs (the 1st group had analapril and hydrochlorothiazide, the 2nd — analapril and niphedipin forte, the 3^d — analapril, hydrochlorothiazide, and niphedipin forte). *Results.* In 81, 3% of cases cataract extraction has been done to the patients of elderly and senile age. Arterial hypertension has been observed in 85, 4% of cases (average age 74,7±0,3). Hypertrophy of the left ventricle has been registered by echocardiography in 80, 6% of cases, associated clinical states have been observed in 71, 1% of patients. The analysis of the degrees of AH risk showed that all patients with AH had high and very high risk of cardiovascular complications. During the operation the majority of elderly and senile patients with normal AP (73, 3%) had hypertensive reaction. The patients of group 3, being administrated the combination of three antihypertensive medical drugs, had lower basic, average and maximum indexes of SAP, DAP, PAP, AP, and the degree of operational SAP and PAP gain, SAP and PAP modifications as compared to the patients from groups 1 and 2 ($p<0.05$). Thus, the effective antihypertensive therapy of ophthalmosurgical elderly and senile patients with AH allows for decreasing the pressure during ophthalmosurgery and reducing the risk of cardiovascular complications in such category of patients.

473. ARTERIAL HYPERTENSION IN ELDERLY AND OLD PEOPLE: THE ROLE OF SYMPATHETIC ACTIVATION IN QUALITY LIFE ASSESSMET

A.V. Shabalin¹, E.B. Solomatina², A.A. Konovalova², O.B. Zalessova², E.N. Guliaeva³ (¹State Medical University, Novosibirsk; ²M.A. Podgorbunskiy Municipal Hospital No3, Kemerovo; ³Kemerovo State Medical Academy, Kemerovo, Russia; shabalin@soramm.ru)

It is known that sympathetic hyperactivation in patients with essential arterial hypertension (AH) is a paramount factor associated with the degree of a disease severity and can affect the level of their physical and psychoemotional activity. It has even greater significance in elderly and old patients due to age limitations of the life quality level and decrease of baroreceptors sensitivity. The aim of the study was to investigate the associations of indexes characterizing the sympathetic link of the heart function vegetative regulation with the quality life indications in elderly patients with AH. 55 male patients with AH stage III, risk IV at the mean age of 68.7±3.4 have been exam-

ined. The European Recommendations (2003) were taken into account in making the diagnosis (AH). The patients had ischemic heart disease (IHD) as an associated condition and were free from postinfarction atherosclerosis. All the patients underwent 24-hour ECG monitoring with the heart rate variability assessment by a temporal and spectral method as well as the life quality (LQ) assessment by SF-36 scale. 18 patients with HBP at the age of 48.5 ± 5.8 who had a high cardiovascular risk composed a comparison group. All the patients had a standard hypotensive therapy: b-blockers, ACE inhibitors, diuretics. The method of multifactor linear regressive analysis showed that the level of sympathetic activity under the assessment of 24-hour heart rate variability was independently associated with the age, stage of the disease and life quality of the elderly patients by the scales of physical functioning, physical pains and activity, the index of the spectrum total power (Tp) and the power of high frequency (HF) spectrum having the greatest informative value. The decrease of systolic arterial blood pressure (SABP) in the process of antihypertensive therapy was associated with the increase of the total power of 24-hour heart rate variability spectrum, power of its low- and high-frequency components and was followed by reliable ($p < 0.05$) improvement of life quality indications due to the scales of physical functioning, health status perception and activity. Thus, the study of heart rate variability in elderly patients with a very high cardiovascular risk may be considered as an advanced assessment method and their clinico-functional status and it can correlate with the indexes of people's life quality.

474. THE FEATURES OF CLINICO-FUNCTIONAL STATUS IN ELDERLY WOMEN WITH A HIGH CARDIOVASCULAR RISK

A.V. Shabalin¹, N.A. Toropchina², I.V. Gerasimova³, E.N. Guliaeva³ (¹State Medical University, Novosibirsk; ²Municipal Hospital No2, Kemerovo; ³Kemerovo State Medical Academy, Kemerovo, Russia; shabalin@soramm.ru)

The aim of the study was to investigate features of clinico-functional status in elderly women with essential arterial hypertension (HBP — high blood pressure) with a high cardiovascular risk. The group under observation was presented by 28 females with HBP stage II, risk 3 at the mean age of 66.7 ± 3.9 years old. The European Recommendations (2003) were taken into account in making the diagnosis of HBP. The level of reactive and personal anxiety (PA) was determined for all the patients in accordance with the Ch.Spilberg and Yu.L.Khanina scale. The assessment of hospital anxiety and depression scale, the study of life quality (LQ) by SF-36 assessment scale, the test with a 6-minutes walk, the study of a biologic age by the V.P.Voitenko method as well as ECG, ECHO and 24-hour ECG monitoring with the assessment of heart rate variability were also conducted. The comparison group was composed of 22 females with HBP at the age of 42.3 ± 3.4 years old. It has been found that elderly women with a high cardiovascular risk differ from the comparison group by authentic ($P < 0.05$) decrease of body weight index (BWI), rise of general cholesterol and cholesterol of low density lipoproteins (LDL) in blood serum as well as the reduction of heart rate variability indexes based on the data of 24-hour ECG monitoring. Psychosomatic status analysis showed in elderly people the PA level rise and anxiety-depressive features by the hospital scale. The cor-

relation analysis showed reliable correlation-regression associations of the sympathicotonia level during 24-hour ECG monitoring with marked anxiety-depressive features ($P < 0.05$), and LDL value in the blood serum. The multifactor regression analysis method was used to obtain the independent effect of the age of the women under examination on the evidence of anxiety-depression features and low-rate component of 24-hour heart rate variability. Thus, elderly age of women with a high cardiovascular risk is an independent factor capable to affect the severity of their clinico-functional status and the degree of psychosomatic disorders evidence.

475. GASTROINTESTINAL ASPECTS OF HEALTHY AGEING

K.A. Shemerovsky (Institute of Experimental medicine, St. Petersburg, Russia; iem@iem.spb.ru)

Purpose: In St. Petersburg, colorectal cancer occupies the leading position in oncological morbidity and female oncological mortality. The aim of this study was to compare the risk of constipation and colorectal cancer in persons of different age from 20 to 80 years old. *Material and methods.* Chronoenterography — chronometry of the circadian bowel rhythm was carried out on 2501 persons (20–80 y.o.). The incidence of colorectal cancer in St. Petersburg of the same age was calculated. There were formed 6 groups for healthy and sick persons: I — 20–29, II — 30–39, III — 40–49, IV — 50–59, V — 60–69, VI — 70–80 y.o. *Results.* It was shown that 56% of the healthy persons have regular circadian bowel rhythm, but 44% (1102 from 2501) of them have irregular bowel rhythm. I stage of bowel irregularity (5–6 times a week) have 27%, II stage — (3–4 times a week) have 13%, and III stage — 4% of subjects. Bowel bradyarrhythmia incidence for 6 healthy groups was: I — 20%, II — 21%, III — 30%, IV — 25%, V — 7%, VI — 3%. Colorectal cancer incidence was: I — 0%, II — 3%, III — 9%, IV — 25%, V — 28%, VI — 35%. Minimal incidence of functional colorectal bradyarrhythmia was diagnosed for the youngest group (20–29 y.o.) but minimal incidence of the colorectal cancer — for second group (30–39 y. o.). Functional colorectal pathology begins about 10 years early than organic colorectal cancer. Maximal incidence for functional colorectal bradyarrhythmia was diagnosed at age 40–49 y.o., but for colorectal cancer — at age 70–80 y.o.. Organic colorectal pathology have maximal incidence about 30 years later than functional one. *Conclusion:* Circadian bowel regularity is fundamental rhythm of healthy ageing because it prevents colorectal bradyarrhythmia as colorectal cancer risk factor.

476. CARDIORENAL RELATIONS PECULIARITIES IN ELDERLY PATIENTS WITH ARTERIAL HYPERTENSION

T.G. Sherbakova, M.E. Statsenko (College for Dentistry and Pediatrics, Volgograd state medical university; djf@as.ru)

Objective is to study cardiorenal relations peculiarities in elderly patients with arterial hypertension (AH). *Material and methods* included the study of 132 patients, which were divided into 2 groups. The first one was composed of 30 middle-aged patients (average age 46.2 ± 1.5 years) and the second one was composed of 102 elderly patients (average age 66.9 ± 0.5 years). Echocardiography, serumal creatinine level, glomerular filtration rate (GFR), renal functional re-

serve (RFR), microalbuminuria (MAU), canalicular reabsorption (CR), sodium reabsorptions (R_{Na^+}) were evaluated in the study. *Results* revealed reliable increasing of the left atrium (LA) cavity to 37.3 ± 0.4 mm in the second group in comparing with 32.8 ± 0.5 mm in the first group patients and also for the left ventricle (LV). Straight correlation between size of LA and MAU ($r=0.30$) and also between LV end-systolic size and MAU ($r=0.26$) was observed in the second group. Significant increasing of the interventricular partition thickness (to 1.07 ± 0.02 in comparing with 0.97 ± 0.02 mm in the middle-aged patients), LV posterior side (1.07 ± 0.02 and 1.01 ± 0.03 mm accordingly) and index of the left ventricular myocardial mass (ILVMM) (130.6 ± 2.9 in comparing with 111.3 ± 8.3 g/m²) was determined in the elderly patients with AH. Prognostically unfavourable types of the LV geometry (concentric and eccentric hypertrophy of LV — CHLV, EHLV) more often were observed in elderly patients with GFR < 60 ml/min (80.8%) than in patients with GFR > 60 ml/min (63%), $p < 0.1$. In the second group CHLV and EHLV were determined more often to 5.5% in persons with exhausted RFR than with normal value of RFR ($p > 0.05$). In the second group patients with high level of MAU (more than 100 mg/a day) ILVMM was reliable higher — 132.5 ± 3.8 g/m² than that is in the patients with lower MAU level — 120.5 ± 4.5 g/m². Statistically significant changes of ejection fraction (EF) were not observed between the groups. Reverse correlation between EF and MAU ($r=-0.22$) was revealed in the second group. Analysis of LV diastolic function parameters in elderly patient with AH revealed decreasing of the transmitral bloodstream peaks — E/A (0.87 ± 0.03 in comparing with 1.06 ± 0.05 in the first group patients, $p < 0.05$) and increasing of the isovolumetric relaxation time — IVRT ($115.2 \pm 4.1/99.7 \pm 6.8$ ms, $p < 0.05$). Direct correlation was revealed between GFR, CR, R_{Na^+} and E/A ($r=0.40$; $r=0.34$; $r=0.41$), reverse one was revealed between GFR, CR, R_{Na^+} and IVRT ($r=-0.36$; $r=-0.22$, $r=-0.21$) in elderly patients. *Conclusion* showed that was determined the narrow relation between morphofunctional parameters of the heart and renal function in elderly patients with AH.

477. PARAMETERS OF SYSTEM OF A HEMOSTASIS AT LONG-LIVERS OF THE SAMARA AREA

M.V. Shishkova-Lavrus (Samara state medical university, Samara regional clinical hospital for veterans of wars, Russia; *marylavr@yandex.ru*)

Characteristic of health of long-livers is especially important, since they to the greatest degree come nearer to the standard of physiological ageing. It is necessary to mean, that the persons who have reached extreme old age, considerably differ among themselves to attributes of ageing and state of health. Thus special interest represents studying various parts of system of a hemostasis at long-livers. By us it has been surveyed 126 person in the age of 90-107 years (94 men and 32 women), passed inspection and treatment in the Samara regional clinical hospital for veterans of wars. Middle age surveyed has made $93,2 \pm 3,8$ year. Studying of thrombocyte aggregation as basic element platelet part of system of a hemostasis, it was carried out by means of laser aggregometer 230 LA NPF «Biol». Initial spontaneous thrombocyte aggregation, thrombocyte aggregation in reply to action agonists was investigated (as inductors were used: ADP — 5 mkmol/l, adrenaline —

5 mkg/l, collagen — 2 mg/l). At studying coagulation part of a hemostasis following parameters were investigated: time of curtailing of not stabilized blood; time recalcification plasmas with standardization of contact activation of curtailing by suspension kaolin; activated partial thromboplastin time; prothrombin index (PTI); thrombin time; definition of quantity fibrinogen, fibrinolytic activity. By results of research thrombocyte part of a hemostasis at long-livers on a background of healthy ageing of spontaneous thrombocyte aggregation has made $1,58 \pm 0,49$ and slightly differed from similar parameters of control group (distinction doubtfully $> 0,05$). Authentic increase of parameters aggregation abilities thrombocyte on adrenaline $4,53 \pm 2,76$ ($p < 0,05$) is revealed. Increase of thrombocyte aggregation on ADP and collagen doubtfully. At studying coagulation part of hemostasis the authentic increase in a level fibrinogen up to $2,87 \pm 0,97$ g/l, decrease in time recalcification plasmas up to $91,57 \pm 7,03$ s, increase fibrinolytic activity up to $189,79 \pm 21,20$ s ($p < 0,01$) is revealed. Other parameters slightly differed from similar in group of the control (distinction doubtfully). Obtained data testify that on a background of physiological ageing long-livers do not have a pathological change parameters system of hemostasis.

478. IMMUNOLOGIC MECHANISMS OF PREMATURE AGEING AFTER RADIATION EXPOSURE

*V.M. Shubik*¹, *N.V. Alishev*², *B.A. Drabkin*²

(¹*P.V. Ramzaev Scientific Research Institute of Radiation Hygiene*; ²*Scientific-medical centre of the Committee of veterans of special risk subdivisions in the Russian Federation, St. Petersburg, Russia*; *tkudr_elderly@mail.ru*)

The results of clinical examination (Колесник Ф.А. и др., 1997) and determination of biological age (Алишев Н.В. и др., 2006) testify to possible premature ageing of the veterans of special risk subdivisions (SRS). There are the data showing the important role of immunologic mechanisms in processes of ageing (Walford R.L., 1969; Петров П.В., Хаитов П.М., 1975), premature ageing of the organism exposed to ionizing radiation (Шубик В.М. и др., 1978) and ageing of the immune system after this (Аклеев А.В., 1995). Immunological examination of 248 veterans of special risk subdivisions (SRS) who had tested nuclear weapons in Novozemelsky and Semipalatinsk proving grounds, or had been involved in radiation accidents in nuclear submarines or had participated in Totsky troop training using nuclear weapons long after (20–40 years) possible radiation influence was carried out. The control group consisted of 137 people who had not been exposed to ionizing radiation. Indexes of the state of humoral and cellular non-specific and immune protection, autoimmune displacements, sickness rate were studied. The results of examination of SRS veterans showed decrease of lysozyme and complement activity, concentration of main classes antibodies in blood serum, sensitization of lymphocytes to tissue antigens and higher formation of auto-antibodies to antigens of a heart, aorta, lungs, liver, kidneys, thyroid gland. Higher content of viruses in the veterans' organisms comparing to the control group indicates to immunodeficiency.

The role of immunologic changes in health disorder was demonstrated. Combination of immunodeficiency and auto-aggressive state is the vital reason of premature age-

ing of people exposed to the combined influence of ionizing radiation and non-radiation factors (ecologic, social factors etc.). Some distinctions in immunologic changes in different groups of veterans were discovered, such as sensitization to respiratory viruses, increase of tumor necrosis factor concentration in blood in veterans who tested nuclear weapons in Novaya Zemlya.

479. A SYSTEMATIC APPROACH TO OLDER PATIENTS WITH FALLS

I. Shugaev, L. Aharony, I. Carmon, A. Magen-Iavzuri
(Clalit Healthcare Services, Haifa, Israel;
ashugaev@hotmail.co.il)

Background and Aims. Comprehensive Geriatric Assessment (CGA) is a multidimensional, interdisciplinary, diagnostic process that has become an established part of the geriatric practice. Our aim was to evaluate the results of CGA done on patients referred for evaluation due to recurring falls. **Methods.** CGA is performed in a community geriatric clinic by a team including a geriatrician, a nurse and a social worker. The assessment is done by using standardized tools to evaluate aspects of patient function, impairments and social support. CGA generates a coordinated and integrated plan for treatment and follow-up for the primary care providers. **Results.** Among the first 250 patients referred to CGA 132 (62%) experienced recurrent falls in the last year; 72% showed cognitive decline; 58% suffered from hearing and vision impairment; 70% had sleep problems, of which 46% used sleep medications; 80% suffered from urinary problems; social problems were identified in 59% of the patients. Post CGA recommendations included medication adjustment for 81% of the patients; referral to further evaluation for 70% of the patients; assessment of home safety for all patients; group or individual therapy as required. **Conclusions.** (1) Employment of structured health assessment protocols as CGA is a useful method to evaluate older patients with falls. (2) The resulting recommendations targeted to the identified problems and risk factors enable family members and primary care providers to implement interventions to prevent/reduce future falls. (3) The high prevalence of cognitive decline and urinary problems among older fallers implies further research.

480. METHOD OF FORECASTING EARLY POSTOPERATIVE ESOPHAGOGASTRODUODENAL BLEEDINGS IN GERIATRIC PRACTICE

B.V. Sidash (Samara regional hospital for veterans of wars,
Russia; hosp@smr.ru)

In a basis of work are put results of inspection and surgical treatment of 493 elderly patients, in the age of from 60 till 89 years, with prostate adenoma (PA) which have executed scheduled prostatectomy (PE). The purpose of research — to develop criteria of forecasting of risk early postoperative esophagogastroduodenal bleedings (EPEGDB) (time-urgent). At traditional methods of diagnostics and treatment at patients of elderly and senile age with PA after PE in 7% of clinical supervision meet EPEGDB. Patients from a category of scheduled urological patients pass in a category time-urgent surgical. The leading pathogenetic mechanism of development EPEGDB — acid-peptic aggression. Endoscopes parietal pH-examination was a precision method in selective definition acidodepending conditions at patients of elderly and

senile age with PA. The method allows to allocate group of patients of high risk EPEGDB on pre-surgical stage. Data parietal pH-examination with hyperacidity in a body of a stomach and subcompensated or decompensate alkalized in antrum are noted at 30% of patients. In this group of patients purposeful preventive maintenance inhibitors a proton pump and antacid with controllable hypoacid or anacid is spent. The developed method of forecasting of risk EPEGDB allows to realize a principle of the differentiated approach to effective their preoperative preventive maintenance at patients of elderly and senile age with PA. Complex preoperative preparation with application adequate antisecretory therapies at patients of elderly and senile age with PA, having risk of development EPEGDB, promotes their significant decrease (about 7% up to 0,6%).

481. CARDIOVASCULAR STATUS AND PLASMA ENDOTHELIN CONCENTRATION IN ELDERLY HYPERTENSIVE PATIENTS

A. Skalska, T. Grodzicki (Jagiellonian University Medical
College, Cracow, Poland; anskal@su.krakow.pl)

Introduction: The endothelin is a potent vasoconstrictor and mitogenic endothelium-derived peptide and potential contributor to the development of the atherosclerosis. **Objective:** To evaluate a relationship between plasma concentration of endothelin and presence of cardiovascular complications in elderly subjects. **Design and Methods:** 88 hypertensive patients aged 42-92 years (mean 67.74 ± 10.57) were examined. In all patients history was obtained and physical examination was performed. Plasma endothelin concentration was determined by ELISA. Ejection fraction (EF) was measured by echocardiography, carotid intima-media thickness (CIMT) by ultrasound examination, pulse pressure (PP) was calculated from ambulatory blood pressure monitoring. **Results:** In the examined group 46 subjects (52.3%) had diabetes, 44 (50%) coronary heart disease, 14 (15.9%) had clinical features of heart failure (CHF), 10 patients (11.4%) had stroke and also 10 (11.4%) had myocardial infarction in the history. The concentration of endothelin was higher in subjects aged 65 y. or older (1.26 ± 0.491 vs 1.05 ± 0.46 pg/mL; $p=0.045$), in patients with diabetes mellitus (1.31 ± 0.50 vs 1.08 ± 0.45 ; $p=0.02$), in persons with uncontrolled hypertension (1.28 ± 0.5 vs 1.06 ± 0.45 ; $p=0.03$) in subjects with CHF (1.54 ± 0.47 vs 1.12 ± 0.46 ; $p=0.003$), and after stroke (1.48 ± 0.47 vs 1.15 ± 0.48 ; $p=0.04$). After dividing examined patients into two groups according to the median value of endothelin concentration (1.13 pg/mL), subjects with higher endothelin level had higher CIMT (1.001 ± 0.19 vs 0.885 ± 0.16 ; $p=0.003$), higher pulse pressure (58.39 ± 12.43 vs 51.50 ± 9.50 , $p=0.004$) and lower EF (54.83 ± 12.83 vs 63.71 ± 11.35 ; $p=0.004$). The correlation between ET concentration and age ($r=0.3$, $p=0.005$), EF ($r=-0.41$, $p=0.0005$), CIMT ($r=0.36$, $p=0.0008$) and PP ($r=0.24$, $p=0.01$) was found. In multiple regression analysis the relationship between plasma endothelin concentration and EF was significant ($\beta=-0.47$, $p=0.007$). **Conclusions:** (1) Higher plasma endothelin concentration is related to advanced age, presence of diabetes, uncontrolled hypertension and more advanced functional and morphological cardiovascular changes, also to more advanced cardiovascular diseases. (2) Endothelin may promote the development of cardiovascular dysfunction.

482. EFFECTS OF A SHORT PROGRAM OF AEROBIC PHYSICAL ACTIVITY IN INSTITUTIONALIZED OLDER PATIENTS COMPLAINING OF DYSPNEA

A. Sona, M. Astengo, A. Brescianini, E. Quagliotti, M. Comba, M. Bo (ASO S. Giovanni Battista, Torino, Italia; mario.bo@unito.it)

We aimed to evaluate the effects of a program of regular physical activity on dyspnea and on ability to walk in a sample of older nursing-home residents without evidence of cardiac and pulmonary disease. Eighty-six eligible from a sample of 145 patients (free from cognitive impairment, anemia, hepatic and kidney disease) were evaluated for the presence of dyspnea using the Baseline Dyspnea Index (BDI, score range: 0–12, 0=most limitations from dyspnea, 12=no limitations). Seventy-one subjects reporting dyspnea (BDI < 12) underwent a careful medical and instrumental (12-lead ECG, chest X-ray, echocardiography and spirometry) evaluation; 22 subjects (16 women, mean age 79.4±1.9 years) without evidence of cardiac or pulmonary disease were enrolled and allocated in two sex-matched groups (intervention vs control). The intervention group received 4-week period of exercise training on a treadmill and stationary bicycle aimed to achieve 30 minutes of training per session. Dyspnea was assessed using the Visual Analogic Scale (VAS, 300 mm line, bottom end: no breathlessness, top end: greatest breathlessness) at rest and at the end of a 6-Minute-Walking Distance (6MWD) test. Dyspnea associated with daily activities was measured using the BDI at baseline, and the Transitional Dyspnea Index (TDI, score range: — 9, greatest increase in limitation from dyspnea to +9, greatest decrease in limitation from dyspnea) at the end of the period of observation. Results are presented in the following Table.

	Intervention group	p value vs baseline	Control group	p value vs baseline
VAS dyspnea, at rest (mm)	-3.0±0.7	0.49	2±0.4	0.38
VAS dyspnea, after 6MWD (mm)	-48±9	<0.01	3±0.7	0.29
6MWD (m)	52±19	<0.01	-17±13	0.33
TDI (U)	2.1±0.4	<0.01	-0.3±0.1	0.48

Intervention resulted in a significant improvement of dyspnea and endurance to walking. In these individuals a short period of exercise training has favourable effects on dyspnea and ability to walk.

483. PREVALENCE OF SOME COMPONENTS OF A METABOLIC SYNDROME AMONG PERSONS OF ELDERLY POPULATION OF YAKUTSK

K.K. Sozonova, Y.N. Neustroeva, E.S. Kylbanova, O.V. Tatarinova (Yakut scientific centre of RAMS and the Government of the Sakha Republic, Yakutsk, Russia; neusvn@mail.ru)

The metabolic syndrome is one of the main factors of risk of development of an atherosclerosis and its cardiovascular complications. *Purpose.* Studying of prevalence of some components of a metabolic syndrome among persons of elderly and senile age of Yakutsk. *Materials and methods.* In our work we presented the data received as a result of population research of risk factors of chronic non-infectious diseases in Yakutsk. The object of research — population sample of inhabitants of Yakutsk of both sexes

at the age of 60 years and over (387 person). Presence of a metabolic syndrome was defined according to Management Adult Treatment Panel (ATP III), 2001 year with the presence ≥3 of below the listed criteria: a waistline of men > 102 cm, a waistline of women > 88 cm; TG ≥150 mg/dl (1.7 mmol/l); AD ≥130/85 mm hg; glycemia ≥110 mg/dl (6.1 mmol/l). *Results.* In examined population sample a metabolic syndrome presents in 15.8% of people (among men — 15.1%; among women — 16.2%). The prevalence of abdominal obesity was 44.4% (among men — 27.7%; among women — 56.1%); arterial hypertension — 56.6% (among men — 59.7%; among women — 54.4%); hypertriglyceridemia — 23.3% (among men — 27%; among women — 20.6%); hyperglycemia — 12.7% of people (among men — 12%; among women — 13.2%). A metabolic syndrome with three components presents in 13.0% of examined persons; with four components — in 2.8%. In population sample of men a metabolic syndrome with three components presents in 11.3% of people; with four components — in 3.7%. In population sample of women — in 14% and 2.2% accordingly. *Conclusion.* The obtained data are preliminary results of epidemiologic researches and they show the moderate prevalence of a metabolic syndrome among inhabitants of Yakutsk at the age of 60 years and over.

484. GERIATRIC TRAINING FOR GENERAL PRACTITIONERS — FAMILY DOCTORS IN GREECE

G.C. Spatharakis¹, A. Benetos², N. Papanagiotou³, K. Volikas⁴, B.-P. Merkouris⁵ (¹Public Primary Health Care Center of Itea, Phokida, Greece; ²CHU de Nancy, Brabois Hospital, Nancy, France; ³Army Veterans Hospital, Athens, Greece; ⁴251 General Aviation Hospital, Athens, Greece; ⁵Public Primary Health Care Center of Nea Madytos, Thessaloniki, Greece; george_spatharakis@yahoo.com)

Although Greece constitutes one of the demographically oldest countries of Europe (18,5% aged over 65 years, National Statistical Service, ESYE), undergraduate training of future doctors in Geriatrics is actually present in only one out of the country's 7 Medical Faculties and official and constructed postgraduate Residency Programs are lacking from all Medical Faculties. Caring for elderly people accounts for 55-80% of the daily medical activity of General Practitioners (GPs). This difference between the relative percentage of elderly in the practices plus the complexity of the geriatric patient and the lack of relevant education-training creates the need for further Geriatric Education and Training of GPs/Family Doctors. Reacting to this unmet need the Greek Association of General Practitioners (EL.E.GE.IA.) created a structured Continuing Medical Education (CME) Program intended to sensitize the GPs to Geriatric matters, but also to provide a theoretical background and to offer skills in the approach, communication with, comprehensive geriatric assessment and management of primary health care sector's elderly clients. The course covers 4 days (from Thursday afternoon to Sunday noon) with a total of 25 teaching hours covered by classical lectures (about 25% of the total time), oriented discussions (approx. 30%), case report analysis (around 15%) and group work using brain storming, role playing and simulation techniques (30%). The number of participant doctors is strictly limited to 24 for obvious pedagogical reasons (possibility of interaction and group exchange and participation of good quality). The course expenses (but not the travel costs) are taken over

by ELEGEIA which, in turn, is sponsored by a pharmaceutical company. The total of GPs having participated to these Geriatric CME activities raises in the last 18 months to about 70 individuals for a total number of about 1200 specialized GPs. These activities, run in Greek, are highly regarded by ELEGEIA itself and are given the name of «Geriatric School». The scientific background is provided by 5 persons (4 geriatricians). The overall satisfaction rate of the participants ranging between 65-100% (mean: 84%), as measured by a structured anonymous questionnaire. The program is an invitational one in order to provide the most ample geographic coverage but also takes into account motivation and previous work in the field. It also provides a stage where younger doctors could present their good quality, original research work. The seminars are constructed on a «work hard-play hard» basis which stimulates and drives to the creation of a «network».

485. ASSESSMENT OF QUALITY OF LIFE IN PEOPLE WITH DIABETES

L. Spazzafumo¹, C. Sirolla¹, R. Rabini² (¹Statistical Centre INRCA, Ancona, Italy; ²Diabetic Unit of INRCA Hospital, Ancona, Italy; l.spazzafumo@inrca.it)

Background: The aim of the study is to evaluate the impact of diabetes on quality of life of adults, especially older people. Few studies have been performed to investigate QoL in people with diabetes in Italy and, in particular, there have been no studies on elderly patients. **Methods:** We enrolled 675 patients with diabetes from June 2005 to February 2006 when they attended the Diabetic Unit of INRCA Hospital in Ancona for their annual visit. To measure individual perceptions of the impact of diabetes on the quality of life we used the ADDQoL-19 (Audit of Diabetes Dependent QoL). The ADDQoL-19 is an individualised measure of the impact of diabetes on quality of life (QoL), allowing patients to indicate the perceived importance of each aspect of life for their QoL as well as the positive or negative impact of diabetes on those aspects of life of relevance to the individual. Average Weighted Impact (AWI) score = $\sum \text{impact} \times \text{importance ratings} / N$ of applicable items. **Results:** Respondents had an average age of 64 (SD=12.6) years and 51.8% were men. 8.5% had type 1 diabetes and 91.5% had type 2 diabetes. Overall AWI score was -1.80 (SD=1.53). Factor analysis and Cronbach's coefficient of internal consistency (0.91) confirmed that the 19 domain-specific ADDQoL items could be combined into a single scale. Significant differences between type of diabetes were found for AWI ($p=0,026$) and a single-item of impact of diabetes (Overview II, $p=0,001$) scores showing that type 1 patients reported greater negative impact of diabetes on their QoL. The patients were classified in 3 age groups: $n=82$ (12.1%) patients aged 18-49 years, $n=351$ (52.4%) aged 50-69 years and $n=237$ (35.4%) over seventy years old. The single-item measure of present QoL was statistically different across age groups ($p=0.006$) showing that older people reported better QoL than younger patients. Patients aged 18-49 years reported worse mean impact of diabetes on the domains regarding «the things I could do physically» and «my sex life» than older patients, but they also reported less negative impact of diabetes on «worries about the future». **Conclusion:** This study gives an overall picture of quality of life people with diabetes in Italy using ADDQoL-19 questionnaire that shows a good evidence for reliability

486. BOWEL CARE IN THE ELDERLY

G. Spinzi (Valduce Hospital, Como, Italy; gispinz@tin.it)

Elderly people frequently suffer from intestinal complaints, which can have a considerable impact on their quality of life. Intestinal disorders are not only frequent but involve significant morbidity, with a high cost; they are therefore a painful problem calling for prompt care and appropriate therapy. Constipation is common and the incidence rises to more than 80% among residents in homes for the old. Faecal impaction and incontinence are complications in the elderly and are probably underestimated, because many people are unwilling to report the symptoms, which obviously have devastating effects on a person's relations with others, self-esteem and quality of life in general, besides the far-reaching economic repercussions. The diagnostic workup should always start with a thorough history, detailed investigation of what medications the patient is taking and, in many cases, by a careful rectal exploration. The patient pharmacological history is fundamental, because medications are the cause of up to 40% of chronic constipation, and are often used inappropriately. The question of the best diagnostic approach is further complicated by the poor standardization of some diagnostic tests, and the fact that some patients are not collaborative. Bowel care is an indicator of quality of care for elderly people. Much current information is not evidence-based, and comes from observations or studies not conducted with the necessary rigor. The aim of this presentation is to give an up-to-date revision about some aspects of bowel care in the elderly, with particular emphasis on constipation, faecal impaction and incontinence.

487. RISK OF LOW-ACCURACY DIAGNOSIS IN ELDERLY CANCER PATIENTS

M.F. Stasi¹, R. Marinello¹, G. Michelis¹, F. Gaspari², D. Marengo², M. Molaschi¹ (¹University of Torino; ²San Giovanni Battista Hospital of Torino, Italy; mariafrancesca.stasi@unito.it)

Despite being at greater risk of cancer, elderly are often underrepresented in clinical trials of cancer treatments and are less likely to receive definitive or adequate cancer therapy. The aim of our study was to analyze which factors influenced diagnostic management of elderly cancer patients. During the last six years we analyzed 622 elderly cancer out-patients, all aged 70 and older: they received Comprehensive Geriatric Assessment and oncologic evaluation. Information was collected on demographic characteristics, educational level, nutritional, mental and functional status, presence of comorbidity. Oncological data included type of solid cancer and stage of disease, presence of istological diagnosis. The median age of the sample was 78 yr and 37% of them were 80 years or older. The majority of patients had a rather good functional and performance status and a low prevalence of cognitive impairment. Most of them had many comorbidities and about 60% were affected by 3 or more diseases. More frequent cancers were colorectal (29.9%) and lung (11.2%); about 66% of patients had a locally advanced or metastatic disease. The istological diagnosis was missed in 17.5% of patients. Among assessed items, aging represented a statistically significant risk factor to avoid invasive diagnostic practice: in our study the istological diagnosis was known in 89.3% of patients with less than 75 years versus 65.1% of the patients aged 85 years or more ($p < 0.005$). A good

performance status (evaluated by Karnofsky Performance Status scale — KPS) ($p < 0.001$) and absence of cognitive impairment (evaluated by Short Portable Mental Status Questionnaire — SPMSQ) ($p < 0.005$) were statistically associated with a presence of istological diagnosis. Type and stage of tumor had a fundamental role in the decision making. In fact an istological diagnosis was obtained in 96.5% of colorectal cancer patients versus 64.1% of lung cancer patients ($p < 0.001$). Moreover an istological diagnosis was present in 96.9% of the patients with complete remission disease after treatment versus 78.7% of patients with metastatic disease ($p < 0.001$). In conclusion, oncological parameters, age, cognitive, functional and performance status have a statistically significant impact on the diagnostic accuracy of oncological elderly patients. More research is needed to understand the age-related differences in the management of cancer in elderly and to clarify how comorbidity and frailty limit diagnostic and therapeutic choices.

488. ELECTROCARDIOGRAPHIC CHANGES DURING ENTEROCLYSIS IN ELDERLY PATIENTS

S.K. Stathopoulou¹, E. Drakonaki¹, V. Antoniou¹, L. Fragopoulou¹, N. Evlogias¹, P.J. Papadaki¹, G.M. Zavras¹, A.N. Dimitrakopoulos² (¹KAT General Hospital, Athens, Greece; ²Medical School, University of Athens, Eginition Hospital, Athens, Greece; rstathop@in.gr)

Aim: Enteroclysis (small bowel enema) involves the introduction of a large amount of fluid into the small bowel, through a tube, producing small bowel distention. A study was done to determine the incidence of any electrocardiographic changes during enteroclysis with Holter monitoring. *Materials and methods:* Continuous electrocardiographic monitoring and 12-lead electrocardiograms were performed in 30 elderly patients undergoing enteroclysis and in 30 control subjects undergoing routine chest, bone and upper gastrointestinal small bowel follow-up studies. Two channel qualitative and quantitative electrocardiographic analysis was performed by a computerized nontriggered template system. Arrhythmias, change in cardiac axis, conduction defects, pauses, ST segment changes and ectopics were sought. *Results:* Increased sympathetic tone resulting in increased heart rate and transient atrial and ventricular ectopics was frequent during enteroclysis compared with the control group. In one patient ventricular tachycardia developed and two patients had diminished heart rate but this was attributed to preexisting heart disease and concurrent medication. *Conclusion:* Transient, nonhazardous cardiac arrhythmias are encountered during enteroclysis in elderly patients. These arrhythmias may be attributed to the preexisting heart disease, fear and anxiety during intubation or increased sympathetic tone from the enteric loop distention.

489. ELECTROCARDIOGRAPHIC CHANGES DURING ERCP IN ELDERLY PATIENTS

S.K. Stathopoulou¹, E. Drakonaki¹, V. Antoniou¹, L. Fragopoulou¹, N. Evlogias¹, P.J. Papadaki¹, G.M. Zavras¹, A.N. Dimitrakopoulos² (¹KAT General Hospital, Athens, Greece; ²Medical School, University of Athens, Eginition Hospital, Athens, Greece; rstathop@in.gr)

Aim: To determine the incidence of cardiac arrhythmias, changes in oxygen saturation, heart rate and blood pressure during endoscopic retrograde cholangiopancreatogra-

phy (ERCP) via Holter monitoring in elderly patients older than 70 years of age. *Materials and methods:* Holter monitoring and 12-lead electrocardiograms were performed in 30 elderly patients undergoing ERCP and in 30 control subjects undergoing routine chest, abdomen, bone and upper gastrointestinal small bowel follow-through studies. Two channel qualitative and quantitative electrocardiographic analysis was performed by a computerized nontriggered template system. Arrhythmias, cardiac axis, conduction defects, pauses, ST segment changes, ectopic beats, oxygen desaturation and changes in blood pressure and rate-pressure product were evaluated. *Results:* Increased heart rate, ST segment changes resulting from myocardial ischemia, oxygen desaturation and transient atrial and ventricular ectopic beats were frequent during ERCP compared with the control group. In one patient, transient left bundle branch block developed and this was attributed to pre-existing hypertension with cardiomegaly. One patient developed ventricular tachycardia and one other sinus bradycardia but this was attributed to sick sinus syndrome. *Conclusion:* Transient myocardial ischemia and various cardiac arrhythmias are frequent in elderly patients undergoing ERCP. Appropriate noninvasive monitoring seems to be justified during this procedure.

490. HEMIPARESIS: EVALUATION OF BODY COMPOSITION BY DEXA IN MALE PATIENTS

S.K. Stathopoulou¹, O. Lazoura¹, E. Drakonaki¹, V. Antoniou¹, L. Fragopoulou¹, P. Kosmidis¹, G.M. Zavras¹, P.J. Papadaki¹, A.N. Dimitrakopoulos² (¹National Rehabilitation Centre, Athens; ²Medical School, University of Athens, Eginition Hospital, Athens, Greece; rstathop@in.gr)

Aim: To compare bone mineral density, fat and lean mass of the affected and unaffected lower limbs in hemiparetic patients. *Materials and methods:* Twenty-eight Greek male patients with a six-month history of hemiparesis due to stroke were included in the study. Fat and lean mass were measured at both paretic and normal limb using dual X-ray absorptiometry (DEXA) in all twenty eight patients. Eighteen of them also had a DEXA measurement of bone mineral density (BMD) at the femoral neck, trochanter and Ward's triangle at both paretic and normal limb. Patients were evaluated for the degree of spasticity and the phases of motor improvement. *Results:* Stroke patients assessed for fat and lean mass had a mean age of 63,06±9,58 (range 44–74) years, mean height of 170,8+/-6,58 (range 155–182) cm and mean weight of 71,68±10,77 (range 54–102) kg. Fat mass of the affected leg was not significantly different from the normal leg. However, the affected leg's lean mass was significantly lower compared with the normal side ($P=0,04$).

DEXA	Normal leg	Paretic leg	P value
FM (gr)	2901,27±1221,7	3151,68±1273,3	>0,05
LM (gr)	5917,9±1038,1	5354,18±990,7	0,04

Stroke patients assessed for bone mineral density had a mean age of 62,9±10,4 (range 44–74) years. BMD at the femoral neck and trochanter of the affected side was not significantly different from BMD of the normal side. However, affected side's BMD of Ward's region was significantly higher compared to the normal side ($P=0,035$).

DEXA	Normal limb	Paretic limb	P value
Femoral neck (gr/cm ²)	0,84±0,12	0,85±0,14	>0,05
Trochanter (gr/cm ²)	0,77±0,13	0,76±0,13	>0,05
Ward's triangle (gr/cm ²)	0,58±0,1	0,68±0,14	0,035

All the patients relearned to walk within the first three months after stroke. Seven patients had spasticity (25%). *Conclusion:* Lower lean mass of the paretic leg six months following stroke, reflects diminished physical activity compared to the normal leg. Higher BMD of the affected side Ward's region in hemiparetic patients may be related to spasticity and changes in walking pattern, which increase the mechanical stress loading of the Ward's region.

491. DEXA EVALUATION OF BONE LOSS OF THE FOREARM IN HEMIPLEGIC ELDERLY FEMALES

S.K. Stathopoulou¹, O. Lazoura¹, E. Drakonaki¹, C. Tsilikas¹, I. Dionysiotis¹, L. Fragopoulou¹, N. Tasiopoulos¹, P.J. Papadaki¹, A.N. Dimitrakopoulos² (¹KAT General Hospital, Athens, Greece; ²Medical School, University of Athens, Eginition Hospital, Athens, Greece; rstathop@in.gr)

Aim: To estimate the difference in bone mineral density between the normal and hemiplegic forearm and to investigate the determinants of the amount of bone loss in post-menopausal females. *Materials and methods:* 36 hemiplegic female patients (from cerebral vascular accident) were assessed for amount of bone loss in the paralysed compared to the non-paralysed forearm. Mean age of the patients was 72.8, mean post-menopausal time 23.5 years while mean length of immobilisation was 4.7 months. All patients underwent bilateral forearm bone mineral density evaluation at the proximal cortical and distal trabecular sites using dual energy X-ray absorptiometry (DEXA). *Results:* Bone mineral density (BMD) was significant lower at the affected forearm. Bone loss on the paralysed side was more significant compared to the normal side. The amount of demineralization was in direct proportion to the duration of immobilisation and in inverse proportion to the time elapsed from menopause. *Conclusion:* There is a high risk of osteoporosis in elderly females in cases of immobilisation from hemiplegia.

492. RENAL FUNCTIONAL STATUS AND THE EFFICIENCY OF TREATMENT OF CHRONIC HEART FAILURE IN ELDERLY PATIENTS

M.E. Statsenko¹, O.E. Sporova², S.V. Belenkova¹, D.A. Ivanova¹ (¹Volgograd Medical University; ²City Clinical Hospital № 3, Volgograd, Russia; statsenko@vistcom.ru)

The aim of our study is the estimation of renal functional status influence in long-term treatment of chronic heart failure (CHF) in elderly patients. Eighty patients with CHF, functional class II-III (FC), in the early period after myocardial infarction (MI) were examined; average age is equal to 68,7±0,87 years. All patients received basic CHF therapy. Follow-up period lasted for 12 months. Echocardiography was performed and heart rate variability (HRV) was assessed, quality of life (QoL) was studied by Minnesota Questionnaire, CHF FC and renal functional status were assessed initially, 12 weeks later and after the treatment. In accordance with the influence of treatment on renal function all patients were randomized into two groups. Group I (n=51) — glomerular filtration rate

(GFR) increased more than 60 ml/min/1,73m² and microalbuminuria (MA) decreased or disappeared during the treatment. Group II (n=29) — the treatment of CHF was accompanied by lowering of GFR <60 ml/min/1,73m² and it was the reason of appearance or increase of MA. One death (3,4%) occurred in group II by the end of follow-up, comparing with group I. The improvement of renal function was accompanied by significant increase in ejection fraction from 38,7% to 44,3% (p<0,05) by the end of follow-up, comparing with group II (from 39,3% to 41,0%). In group I CHF FC decreased more substantially (from 2,81±0,73 to 1,95±0,86, p<0,05 vs 2,76±0,81 to 2,24±0,81 in group II), QoL, heart diastolic function and HRV improved significantly. The improvement of renal function was associated with significant decrease of unfavourable type of heart remodeling, comparing with group II. Renal function decrement must be considered as a predictor of unfavourable forecast in CHF patients. The efficiency of the therapy in elderly patients with CHF depends on the influence of basic CHF treatment on the renal function. The lowering or disappearance of MA, normalization of GFR (>60 ml/min/1,73m²) at the end of 12 weeks may be consider as predictors of a good or satisfactory effect of CHF treatment.

493. PIRLINDOL EFFECTS ON PSYCHOSOMATIC DISORDERS AND HEART RATE VARIABILITY IN TREATMENT OF CHRONIC HEART FAILURE

M.E. Statsenko, I.A. Tishenco (Volgograd Medical University, Russia; statsenko@vistcom.ru)

The aim of our study is the estimation of Pirlindol influence on psychosomatic disorders, as well as on quality of life (QoL) and heart rate variability (HRV) in elderly chronic heart failure (CHF) patients in the early postinfarction period (third-fourth week after myocardial infarction). Fifty patients with CHF, functional class (FC) II-III, and anxiety and/or depression signs were randomized into two groups according to the principle 1–2. Group I (n=25, 13 males, 12 females), the average age 71.2±1.9 received basic CHF therapy (Bisoprolol, Lizinopril, Simvastatin, Aspirin, Nitrates, and diuretic when necessary) and Pirlindole in the average dose 37.5 mg a day for 12 weeks. Group II (n=25, 14 males, 11 females), the average age 70.3±1.4 — basic CHF therapy only. The average doses of basic preparations in both groups were the same. The therapy efficiency was evaluated by HADS and the QoL was assessed by Minnesot Questinnaire (MLHFQ). The indexes SDNN, SI, M_xDM_n of HRV were taken into account. Follow-up period lasted for 6 months. The data revealed decreasing of anxiety expression in the group I during therapy from 9.93±0.61 to 6.12±0.81 points (p<0.05) so as decreasing depression expression from 10.12±0.34 to 6.06±0.65 points (p<0.01). The level of anxiety in the group II decreased from 9.8±0.99 to 7.83±2.99 points (p>0.05), the level of depression decreased from 10.3±0.34 to 9.08±1.53 points (p>0.05). According to the data of MLHFQ the QoL became better to 23% in the group I and in the group II — to 7.7% (p<0.05). Statistically significant changes of principal ECG intervals (PQ, QT) were not observed at the background of Pirlindole. Real decreasing of straining index (SI) was noted only in the group I during valuation of HRV from 224.25±20.05 to 158.2±19.45 (Δ%=29.45%, p<0.05). And this proved the decreasing of sympathetic

part of vegetative nervous system. Such index as M_xDM_n also changed greatly in the group I ($\Delta\%=75.59\%$, $p<0.05$). SDNN elevation was revealed in the both groups: In the group I for 37.4%, and 21.2% in the group II. The conclusions showed that at the background of normalization psychosomatic status and quality of life in elderly patients taken Pirlindole also SI decreased and M_xDM_n , SDNN increased and it was the evidence of sympathetic system activity decreasing.

494. RISK AND INCIDENCE OF FALLS AMONG ELDERLY PATIENT IN REHABILITATION SETTING

D. Stirane, A. Vetra (National Rehabilitation Centre «Vaivari», Jurmala, Latvia; dace.st@navigator.lv)

Background. Stroke is a common cause of impairment and disability particularly among the elderly. The risk of falls is high among stroke patients, and falling is a major complication in stroke rehabilitation. *Aim.* The aim of this study was to identify the risk factors for falling after stroke, relation with functional deficit and the incidence of falling in rehabilitation setting. *Method and Material.* 675 stroke patients were admitted in neurological rehabilitation department 1–12 month after stroke from January 2004 to October 2005. The data collected include sex and age of the patient, type of stroke, medical profile, co-morbidities, neurological deficits (motor function, sensory impairment, cognitive dysfunction — aphasia, spatial orientation, memory problems, depression, visual impairments), FIM score at admission and discharge, use of medications and transfers aids, circumstances and consequences of falls. *Results.* Of the 611 stroke patients 64 (10.5%) experienced at least 1 fall, and almost 25% of these experienced at least 2 falls. The mean age of falling group was significantly higher (66.9 ± 8.5 ; $p<0.05$) than in non-falling group (59.9 ± 10.3 ; $p<0.05$). Fallers tended to have lower admission and discharge FIM scores (80.2 ± 20.1 and 91.8 ± 18.4) when compared with non-fallers. Patients who fell were also more likely to suffer from depression (60.9%; $p<0.01$), cognitive deficits (64.1%; $p<0.01$), aphasia (67.2%; $p<0.05$), apraxia (60.9%; $p<0.01$) and they often use gait aids (71.9%; $p<0.01$). A total of 85 falls were reported over the 2-year period. Most falls occurred during the day (70.5%) in the patient room (67.1%). Many falls happened while walking (63.5%). The other falls happened during transfers or while changing position. Injuries occurred in 29.4% of the reported falls incident. These consisted of contusions (48%) and abrasions (40%). Only 2 fractures were reported. The remaining injuries were minor and did not require the specific medical treatment and nursing attention. *Conclusion.* (1) Patients after stroke have a high risk for falling. (2) Patients who have falling incidence have more several functional deficits, speech and cognitive deficits, depression. (3) The identification the risk for falling may be the first step toward the implementation of fall-prevention programmes.

495. SLEEP APNEA IN OLDER MEN WITH SYSTOLIC HEART FAILURE

J. Sulicka, K. Krzanowska, M. Fedyk-Lukasik, J. Zyczkowska, T. Grodzicki (Jagiellonian University Medical College, Dept. of Internal Medicine and Gerontology, Cracow, Poland; asias@mp.pl)

Objective: Sleep-related breathing disorders are common in patients with systolic heart failure. Studies have re-

ported the prevalence of obstructive sleep apnea (OSA) in 5% to 32% and central sleep apnea (CSA) in 30% to 60% heart failure patients. In general population OSA is more common in men. The aim of the study was to evaluate the prevalence of OSA in older men with systolic heart failure. *Methods:* 24 male patients with LVEF<45% underwent ambulatory screening for OSA with Sleepstrip, a disposable device which consist of a flow sensor (oral and nasal thermistor) that measures the amplitude of respiration and identifies episodes of apnea and hypopnea. The final result consists of four possible outcomes: 0-3 comparable with AHI (apnea-hypopnea index — total number of episodes of apnea and hypopnea per hour of sleep). Daytime sleepiness assessment was based on Epworth Sleepiness Scale (ESS). 24-hour ambulatory heart rhythm monitoring was conducted and risk factors including snoring and obesity were determined.

Results: The prevalence of OSA was 62,5%. There was no correlation between snoring, AHI, daytime sleepiness and New York Heart Association (NYHA) class, BMI or age.

Age (years)	67±8,4
LVEF (%)	29,9±8,7
NYHA class	2,3±0,5
NYHA III (%)	37,5
Ventricular arrhythmias (%)	50
BMI (kg/m ²)	27,7±4,1
BMI>30 (%)	33
Snoring (%)	58,3
ESS (0-24)	6,6±3,2
ESS>10 (daytime sleepiness%)	12,5
SleepStrip (%)	
0 — AHI <15	37,5
1 — AHI 15-24	25
2 — AHI 25-40	25
3 — AHI >40	12,5
AHI >15 (%)	62,5

Conclusion: Unlike daytime sleepiness, obstructive sleep apnea and snoring are common in older male patients with systolic heart failure. Low prevalence of daytime sleepiness assessed by ESS might have been caused by advanced age and NYHA class, which disturb everyday activity of patients. Therefore ESS result may not be a good marker of sleep disorders in elderly patients with advanced heart failure.

496. THE MYOCARDIAL CONDITION IN ADVANCED PATIENTS WITH CHRONIC HEART FAILURE OF THE I-II FUNCTIONAL CLASSES WITH CONSERVED SYSTOLIC CARDIAC FUNCTIONAL

V.E. Sushinsky, M.S. Pristrom (Belarusian Medical Academy of Post Graduate Education; sushynskv@rambler.ru)

The clinical features of Chronic Heart Failure (CHF), are observed in 6–17% of advanced aged person. The main cause of CHF development in advanced aged patients is Ischemic Heart Disease (IHD) and Arterial Hypertension (AH). The normal systolic heart function is observed in 20–50% patients under investigation with clinical fea-

tures CHF. The *Aim*: to assess the myocardial condition in advanced aged patients with CHF of the I-II functional classes and conserved systolic cardiac functional. *Methods*: The Echocardiography investigation of 255 patients of advanced aged groups ($68,91 \pm 1,69$ years old), suffering from CHF I ($n=97$) II ($n=158$) FC NYHA was performed. The cause of developed CHF in all patients was IHD and AH. The left ventricular myocardial mass (LVMM) was investigated with the help of R.Devereux and N.Reichek (1977) formula, the heart remodeling condition was investigated using the classification, proposed by A.Ganau (1984). *Result*: The cardiac injection fraction in patients with CHF FC I was $68,42 \pm 0,83\%$; with CHF FC II — $70,0 \pm 0,69\%$. In patients with CHF I II the sizes were respectively: the thickness of interventricular septum was $12,78 \pm 0,24$ and $13,24 \pm 0,24$ mm; the thickness of back wall of left ventricular $11,61 \pm 0,22$ and $11,88 \pm 0,2$ mm; ($P > 0,05$). In detriment of left ventricular (LV) myocardial geometry in patients with FC I CHF the concentric LV hypertrophy (LVH) was revealed in 91 patients (57,6%); the eccentric LVH — in 37 (23,4%), and the concentric remodeling in 8 (5,1%), the normal myocardial structure — in 22 (13,9%) patients. Among the patients FC II CHF the concentric LVH was seen in 63 (64,9%) patients; the eccentric LVH — in 17 (17,6%); the concentric remodeling — in 10 (10,3%) patients, the normal myocardial structure — in 8 (8,2%) patients that wasn't statistically significant different from the structure modal distribution in patients with FC I CHF. *Conclusion*: in advanced aged patients with clinical CHF manifestation and conserved systolic heart function the features of diastolic myocardial dysfunction are presented, both the marked myocardial alterations and the development of its hypertrophy and different dysfunctional forms myocardial structure are observed.

497. WHO ARE THE 'FREQUENT FALLERS' — STUDY IN NURSING HOMES IN POLAND

K. Szczerbinska¹, M. Zak² (¹Jagiellonian University Medical College, Institute of Public Health, Krakow, Poland; ²Clinical Rehabilitation, University School of Physical Education, Krakow, Poland; msszczer@cyf-kr.edu.pl)

One of the tasks of EUNESE project (funded by European Public Health Program 2003-2008) was to implement registration of falls in nursing homes in Poland during a pilot project. *Purpose*: To describe NH residents who experienced more than one fall and to find differences between them and those who had an accident of fall only once. *Method*: A falls registration chart was developed to gather information about the causes, consequences, place, time and direct risk factors of falls. The chart was implemented in 7 NHs (holding 822 residents) for a period of 18 months. During that time 298 falls were observed that happened to 165 residents. Ninety two residents experienced one fall only during the study and 73 — more than one, what constituted more than two thirds of all falls observed. The following analysis was focused on finding differences between those groups. *Results*: 'The frequent fallers' (FF) suffered more often from Parkinson's disease, epilepsies, congestive heart disease and agitation. They were more frequent administered diuretics (44% vs. 32%), digoxin (15% vs. 8%), psychotropic drugs (45% vs. 36%), long active benzodiazepines (15% vs. 3%), short active benzodiazepines (11% vs. 4%), hypnotic drugs (14% vs. 5%), treatment for Parkinson's disease (14% vs. 5%) and

epilepsies (22% vs. 13%). There was no significant difference between 'frequent' and 'sporadic fallers' (SF) in taking medicines for ischaemic heart disease, diabetes, depression, theophiline and nonsteroid antinflammatory drugs. Frequent fallers were more frail which occurred in higher frequency of balance (45% vs. 21%) and gait (38% vs. 32%) impairment, while the sporadic falls happened more often as a result of syncope (3% vs. 9%) and alcohol use (1% vs. 5%). Frequent fallers had problems with raising from the floor after fall more often than sporadic ones. Most falls happened to them in the residents' rooms (53% FF vs. 48% SF) and on corridor (17% vs. 10%) and resulted with light injuries like contusion (38% vs. 50%), abrasion (16% vs. 12%), skin sore (24% vs. 12%), and rather rare with bone fracture (5% vs. 10%). The injuries concerned mostly head (46% in FF vs. 30% in SF) and legs (13% vs. 27%). Despite those differences the environmental factors causing falls did not differ significantly in both groups. *Conclusions*: The repeated falls in one person should motivate NH staff to pay more attention to better treatment of diseases and health problems that may result in frequent falling down.

498. RESULTS OF MULTIFACTORIAL FALLS PREVENTION IN NURSING HOMES IN POLAND

K. Szczerbinska¹, M. Zak², V. Kijowska¹ (¹Jagiellonian University Medical College, Institute of Public Health, Krakow, Poland; ²Clinical Rehabilitation, University School of Physical Education, Krakow, Poland; msszczer@cyf-kr.edu.pl)

One of the tasks of EUNESE project (funded by EC in European Public Health Program 2003-2008) was to implement pilot projects to prevent falls in Nursing Homes in Poland. *Purpose*: To assess the effectiveness of multifactorial preventive intervention to reduce the incidence of falls in NHs. *Method*: Controlled trial. The falls registration chart was developed and implemented in 2 NHs (holding 287 residents) during a period of 18 months. After 6 months of monitoring the incidence of falls, the 3 hour training on falls prevention was performed for NHs staff. For next 6 months the staff of NHs was supervised in the assessment of falls risk and guided in the implementation of a chart developed specially for the project. The preventive procedure was elaborated according to American Geriatric Society guidelines. It included 5 steps: checking the occurrence of falls once a year, performing the Up&Go test, Tinetti test, assessment of environmental and health related risk factors (in the range depending on gait impairment only or/and fall incident), referring to a specially ordered set of physiotherapy. During last 6 months the NHs staff have been performing the falls prevention without guidance. In the other 3 NHs (holding 441 residents), being the control group, the falls registration chart was only introduced in a period of 12 months. *Results*: The incidence of falls dropped significantly (by about half) shortly after the training. It decreased even more during the second phase, which included performing assessment of the risk of falls by the staff. This effect lasted longer in NHs where the staff was more involved in assessing the risk of falls and filling in special charts. Qualitative analysis of falls registration charts showed that «training and practice» intervention enabled a better recognition of risk factors by the NH staff. *Conclusions*: Short and simple training can result in significant reduction of the incidence of falls in NHs, es-

pecially when it is followed by practical guidance given to the staff, as it facilitates the implementation of the whole preventive procedure. The introduction of the falls registration in NHs may decrease the incidence of falls itself.

499. ASSOCIATION OF INAPPROPRIATE MEDICATIONS ON BALANCE MEASURES IN RESIDENTS OF A CONTINUOUS CARE FACILITY

P.Y. Takahashi, F. North (*Mayo Clinic; takahashi.paul@mayo.edu*)

Objective: The objective of this study was to find the association of increasing inappropriate medications including medications that effect falls with measures of balance using validated instruments. **Design:** The investigators performed a cross-sectional study in 2005. Primary analysis was linear regression using univariate analysis and multivariate analysis adjusted for age, gender and body mass index. **Settings:** Participants primarily lived in a single continuous care center in Rochester, MN. Most participants lived in senior independent apartments. **Participants:** All residents who were ambulatory were eligible for enrollment. Residents who operated from a wheelchair base or who had moderate to severe dementia were excluded. **Measurements:** All individuals underwent evaluation for balance through the following standardized instruments: Timed up and Go, Berg Balance Test, FISCIT 4, walking confidence and functional reach. In addition, all individuals provided demographic information. Primary predictors included the number of inappropriate medications (medications on the Beers list) used and inappropriate use of medications that caused falls. **Results:** 41 residents of the facility were enrolled. Average age was 71.5 years with 63% females. An increase in inappropriate medication number with attention to medications that cause falls was significantly associated with changes in instruments of balance using unadjusted analysis. Inappropriate medications as indicated on the Beers list did not influence balance. In multivariate analysis, use of medications which affect falls significantly affected FISCIT 4 scores. Other measures of balances trended toward significant. **Conclusion:** There is an association of medication number that could affect falls with a decrease in balance as measured by the FITCIT 4 after adjustment. Inappropriate medications as a broader class were not associated with a change in balance measures. This discrepancy is likely from the broader category of inappropriate medications on the Beer's list of inappropriate medications. Larger studies on the role of classes of medications to balance might provide more information.

500. DOES BEING OLD WOMEN IN SERBIA IS A RISK?

M. Tasic, S. Jankelic, G. Sevo (*Institute for Gerontology; ightc@beotel.yu*)

Background: Quality of life is personal attitude where health status and functional capacity have priority in maintaining of quality of life in the elderly. Also, social environment is predictor of mental well being that is one of the most important determinacy of quality of life. In this multidimensional approach great influence on the quality of life of elderly have all the contributing factors. **Purpose:** The main aim of the research is to estimate the quality of life of the aged 80 and more years in Belgrade by the application of the standard instrument SF-36. This research is part of the Project: «Health and social needs of elderly

in Belgrade». The results should show which dimension has the crucial role in keeping the quality of life in the investigated group. **Methodology:** The investigated group (N=547) is randomly selected persons aged 80 and more years. The method used in the selecting was by choosing event 50th person in the electoral list of the citizens of Belgrade of that age. For measurement of the subjective estimation of the health and quality of life we used standardized the SF-36 questionnaire. **Results:** The group that we interviewed (N=264) consisted of elderly average age 83.72 years, most of them is females (59.5 percent); significant number of persons is with university degree (20.8 percent). By the analyses of average values of all the eight scales, i.e. the investigated dimensions in the SF 36 questionnaire, we found lower average values in the group of the females than in the group of man. Also, scales of MCS and PCS are lower in females. We found that 33% of elderly in investigated group living alone, and we established that average values are lower in women who are living alone according the estimation of the all eight scales and MCS and PCS scales. **Conclusion:** According to our research quality of life of the women aged 80+ in Belgrade is lower than in the men. Results from many studies are different. In interpreting our results we must take into consideration cultural, socioeconomic, traditional, education and many other factors that can influence on this results.

501. DYSLIPIDEMIA AND INSULIN RESISTANCE IN THE ELDERLY POPULATION

H.V. Tereshina, T.M. Yurina, O.P. Pleteneva, L.F. Gogotova, N.Ye. Osokina (*Research Institute of Gerontology; winterel@mtu-net.ru*)

Ageing of humans often displays itself as pathologies of a certain kind. The most frequently occurred diseases of the elderly population are atherosclerosis and diabetes mellitus type 2. They develop as the consequence of age associated changes in carbohydrate and lipid metabolism. The purpose of the present study was to reveal peculiarities of these changes and search for the connection between dyslipidemia of various types and insulin resistance. The randomized investigation had been held on 886 middle aged and elderly patients (45–90 yrs old) of the institute hospital. The patients were divided into three equal groups of 45–59 yrs (I group), 60–74 yrs (II group) and 75–90 yrs (III group). In blood species the contents of triglycerides (TG), total cholesterol (TC), lipoproteins, free fatty acids (FFA), insulin, glucose were determined after the night starvation. The data base was analyzed using Microsoft Excell program. The obtained data indicated that the combined dyslipidemia (increased content of both TG and TC) predominated in all three groups (I group — 62%; II group — 68%; III group — 48%). But through the aging the ratio TG/TC decreases and the content of low density lipoproteins and FFA increases. Hyperinsulinemia (HS) is a precursor of diabetes mellitus type 2. The frequency of HS was 49% in I group, 34% in II group, 14 in III group. HS was associated with combined dyslipidemia and hypercholesterolemia in equal proportion. The frequency of diabetes mellitus type 2 was 32% in I group, 38% in II group, 23 in III group. I. Among patients with diabetes mellitus type 2 combined dyslipidemia occurred in 47% of cases. Combined dyslipidemia— is a risk factor of metabolic syndrome, atherosclerosis and glucose tolerance. It

is followed by fat accumulation in non-adipose tissues. In the elderly patients combined dyslipidemia is gradually substituted by elevated TC and FFA content. Thus, age associated changes in carbohydrate and lipid metabolism may be due to perturbations in fat distribution. In the elderly people the hormonal resistance might be caused both by the intracellular fat accumulation and the enrichment of plasma membrane by cholesterol.

502. PROFILE OF ELDERLY PATIENTS HOSPITALIZED IN AN ACUTE GERIATRIC UNIT COMING FROM REANIMATION

C. Thomas¹, G. Cosqueric¹, A. Hellier¹, V. Bellamy¹, F. Piette² (¹Hopital Saint Antoine, Acute geriatric unit, Paris, France; ²hopital Charles Foix, Paris, France; caroline.thomas@sat.aphp.fr)

In 2004, following the ministerial recommendation inciting all hospitals with emergency department to have an acute geriatric unit, the hospital Saint Antoine in Paris opened a unit of 16 beds for people over 75 years old hospitalized from emergency unit. Four hundred and twenty people have been hospitalized in 2006 in this unit among whom 20 were coming from reanimation. We wondered who these elderly patients admitted in reanimation were. Would they be the same patients that the ones that we admitted in the unit? *Results:* The mean age of this population was 85,5 y.o. [69-100] versus 86,35 y.o. in the unit. The mean stay in reanimation was 10 days [1-51]. Motive of hospitalization in reanimation: 30% had a neurologic pathology (stroke, crisis subintrans), 40% a hypercapnia or a severe hypoxia, and 25% a bacteriaemic or cardiogenic shock. 50% of them needed an intubation. Before hospitalization, 60% were living at home, alone. They were all without disability but three of them had mild cognitive impairment. In the acute geriatric unit this population stayed an average of 19 days [2-65] whereas the average stay in the unit is 15 days. The outcome of this population was similar to the other admitted patients. 40% went to a physical rehabilitation department, 45% went back home. Only one patient died after 58 days of hospitalization in the unit. *Conclusion:* old and very old patients are admitted in reanimation department since their functional and cognitive status is good. Once hospitalized in acute geriatric care, their outcome is no different to the other patients.

503. FALLS IN RESIDENTIAL HOMES: STUDY OF INTRINSIC AND IATROGENIC FACTORS

J.M. Thomas¹, S. Crohain¹, C. Denorre¹, J.C. Lemper² (¹Residence Arcadia, CPAS de Molenbeek; ²Fondation pour la psychogériatrie Bruxelles; jmichel.thomas@skynet.be)

Introduction: falls represent because of their frequency, consequences and after-effects a major concern for public health. *Objectives:* Search and study of intrinsic and iatrogenic factors for falls in a residential home, design and implementation of a «falls file», sensibilisation of the nursing team and recommendation for the physical therapists. *Methodology:* the physical therapists of the institution selected the valid residents (able to walk alone or with some mechanical support). Each resident answered a questionnaire about the way of transfer and the fall incident. Geriatric assessment included the fall risk evaluation by means of the Tinetti scale, depression risk with the Geriatric Depression Scale (4 or 15 items GDS), functional evaluation with the Katz scale, statement of visual sensory problems, summary

of the given medications and medical diagnosis and podologic examination by the physical therapist. A statement and analytic file for falls was worked out. Falls experimented by the residents were recorded during 6 weeks. *Results:* 60 residents among the 209 of the residential home were selected. 46 agreed to take part to the study (F33,M13, age aver. 89 y). 37 walked on their own, 2 with a stick, 7 with a walking-crate (rollator). The majority needed help for activities of daily living on the Katz-scale. All residents reported at least one fall incident since their admission. The valid residents use the furniture to stabilise themselves, to stand up or to sit down. They express their fear for fall and hospitalization. The Tinetti score is positive for high risk for fall (score $\geq 19/28$) by 36 residents, and problematic ($20 > \text{score} > 28$) by the 10 others. The podologic examination stated sole corns by 42 of the residents, hammer toes by 19, settling of the foot vault by 13, oedema of the lower limb by 16. Two residents are wearing orthopaedic shoes. 28 wear glasses, 2 suffer from cataract, 6 were operated therefore, 6 have glaucoma. Major medical diagnosis are: hypertension (27 patients), cardiac diseases (28), vascular troubles (19), arthrosis (43), osteoporosis (17). According to the GDS, 28 are at risk for depression, among whom 25 receive antidepressants, 9 suffer from dementia with unrealisable GDS scoring, 5 receive antidepressants. All residents receive from 3 to 19 different medications on a daily base, 36 receive at least 3 medications stated as dangerous according to the de Beers list. Record of the fall incidents by the «valid» residents during 6 weeks shows that 8 did fall once ($> 1/5$ of the study population), 3 three times. 2 incidents took place outside during autonomous walk. There were 2 hospitalizations for forearm fracture. *Conclusions:* Fall remains a forbidden subject for the patient (hospitalisation, regression,...) and the nursing team (professional default, banality,...). The so called «valid» residents in residential or nursing homes are all at risk for falls. They cumulate several intrinsic and iatrogenic factors. They don't receive appropriate physical therapy (pre and post-fall), no regular ophthalmological examination. The residential home doesn't have a podologist. A specific falls-file should be developed, with a summary file (statements, scales), notification file (place, hour, circumstances, consequences), analytic file and undertaken actions (intrinsic factors, iatrogenic, extrinsic), and the different examinations and tests, allowing a comprehensive vision of the problem. This could also allow a better information and communication among the health workers, with coherent action and prevention, evaluation of the professional practice, data collection for research. Recommendations would be useful for the all working team.

504. GERIATRIC PATIENTS ARE OFTEN TREATED WITH «RENAL RISK DRUGS» AND HAVE RENAL FUNCTION IMPAIRMENT

P. Thylen, I. Klarin, U. Bergman, T. End-Rodrigues, A. Hellden, R. Back, I. Odar-Cederlof (Karolinska Institute, Stockholm, Sweden; pia.thylen@karolinska.se)

Background: Previous studies have shown that adverse drug reactions (ADRs) are common among elderly patients and often related to renal dysfunction. Pharmacological dose related adverse reactions (type A) could be avoided if dose adjustments were made to the individual renal function. Elderly patients often have undiagnosed renal dysfunction because plasma (p)-creatinine levels remain

within normal reference range even when renal function is as low as 40% of normal. Renal function may decrease further with acute illness and inappropriate drug use. We investigated geriatric patients >75 yrs old with focus on renal function and treatment with drugs associated with increased risk of ADRs in renal dysfunction. *Methods:* We studied 34 patients admitted to the geriatric clinic, 12 men and 22 women, mean age 87 years (75–103 yrs). Renal function was estimated using Iohexol clearance, p-creatinine, Cockcroft-Gault formula and p-Cystatin C. «Renal risk drugs» were defined as drugs that need dose adjustments or other precautions or should be avoided in renal dysfunction. Drug treatment of the patients was registered on admission to the ward and at discharge. Dose adjustments to renal function were registered. *Results:* Renal function determined as glomerular filtration rate (GFR) by Iohexol clearance was 8–64 mLs/min (mean 36), from Cystatin C 14–76 mLs/min (mean 42) and by creatinine clearance according to Cockcroft Gault 12–53 mLs/min (mean 30). P-creatinine was 56–297 $\mu\text{mol/L}$. Renal function changed significantly during hospitalization in 16 patients. The average number of drugs per patient on admission was 10, three were defined as «renal risk drugs». Dose adjustments or withdrawal due to renal dysfunction were performed for 32 drugs. Our patients had about 1/3 of normal kidney function and were treated with «renal risk drugs» that need precautions. *Conclusion:* Drugs subject to predominantly renal clearance need dose adjustment in order to avoid concentration dependent ADRs. Such precautions are particularly important when renal function is reduced to 1/3 of normal or lower. Some drugs should be avoided altogether and drugs that are potentially noxious to renal function should be avoided or used with caution.

505. APPLICATION OF PEPTIDE BIOREGULATORS IN COMPLEX THERAPY OF ORAL MUCOUS COAT IN OLDER PATIENTS

T.B. Tkachenko¹, A.P. Bobrov¹, G.A. Ryzhak² (¹*Acad. I.P. Pavlov State Medical University of St. Petersburg;* ²*St. Petersburg Institute of Bioregulation and Gerontology, Russia; dyakovlev@gerontology.ru*)

Oral mucous coat (OMC) is one of the most important systems of the organism. It acts as a barrier for pathogenic factors. Disintegration of OMC entails the development of different pathologies. The wide spreading of OMC diseases necessitates the increase in the efficiency of the treatment. Our study was performed on 78 patients aged 55–79 yrs with OMC lesions caused by inadequate removable oral prostheses. The patients were randomly subdivided into 3 groups, each consisting of 26 persons. In addition to commonly used complex therapy the following substances were used for stimulating tissue regeneration — «Solcoseryl — dental adhesive» in group 1, oil solution of vitamin A in group 2, dental gel «VIVAX DENT», containing small peptides of the thymus, vessels and cartilages, in group 3. The terms of epithelization of OMC lesions were different: 3,5–9 days, depending on the severity of pathology (traumatic erosion or ulcer), age of the patient, and on the substance, which was used for stimulating tissue regeneration. Group 1 showed epithelization terms for erosions making $4,0 \pm 0,19$ days and for ulcers — $6,9 \pm 0,37$ days. Group 2 showed epithelization terms for erosions being reliably longer than in group 1 and making $4,56 \pm 0,26$ days, and for ulcers — $8,6 \pm 0,34$ days. Group 3 showed erosion epithelization making $3,8 \pm 0,32$ days, ulcers — $7,0 \pm 0,25$ days. Besides that, groups 1 and 3 showed epithelization terms

to a lesser extent depending on the age of patients, than in group 2. Thus, medications containing peptide complexes among their ingredients, optimized the process of OMC tissue regeneration in group 1 and group 3. «Solcoseryl dental adhesive» has shown good results in dental aid practice, while dental gel «VIVAX DENT» is a new medication, and this study showed, that it is a promising means of therapy and prophylaxis, which may be recommended for inclusion into the scheme of treatment for oral mucous coat diseases in older patients.

506. GASTROINTESTINAL MOTILITY DISORDERS IN THE ELDERLY AND ITS PHARMACOLOGICAL TREATMENT

E. Topinkova (*Charles University, Prague and Institute of Postgraduate Medical Education Prague; topinkova.eva@vfn.cz*)

Gastrointestinal (GI) complaints and diseases increases with age and become the fourth most common cause of chronic morbidity in old age. So far, relatively little work has been done to explore gastrointestinal changes with normal aging. Understanding the effect of aging on GI physiology particularly on digestion, absorption and motility is important for understanding GI symptoms, appetite regulation and absorption of nutrients. Only few studies have been published that reported unchanged gastric and small intestine motoric function whereas colonic transit time was mildly but significantly prolonged. This finding may be caused by physiological loss of neurons in myenteric plexus particularly in 7th and 8th decade. In guinea pig model, an increased density of opioid receptors was found in older animals. Both changes may impair the passage through colon and contribute to constipation and diverticular disease in older persons. However, in patients with chronic constipation correlation was not found for the colonic transit time but for impaired reflex activity of rectum. Other extrinsic factors — physical activity, eating habits and psychological factors play important role in colonic and anorectal passage. Most of the common clinical symptoms associated with impaired GI motility — dysphagia, dyspepsia, anorexia and constipation — are rather caused by pathologic processes and drugs than by aging changes per se. Diabetic and postoperative gastroparesis, gastroesophageal and duodenogastric reflux disease, functional dyspepsia and pseudoobstruction syndrome respond well to pharmacological treatment with prokinetic drugs. Prokinetics stimulate motility and co-ordinate propulsive GI activity through increased acetylcholine by stimulating directly 5-HT₄ receptors (cisapride, prucalopride), by antagonizing dopamine D₂ receptors (metoclopramide, domperidone, itopride) and inhibiting acetylcholinesterase (itopride) in GI tract. The pharmacologic profile of individual prokinetic drugs will be presented and their efficacy and side effects discussed. In older patients, there is increasing evidence of beneficial effect of itopride in upper GI motility disorders which appeared to be the first line therapy due to its low frequency of adverse events comparable to placebo.

507. HELIO-BIOPHYSICAL ASPECTS OF GERIATRY

A.V. Trofimov¹, A.V. Shabalin² (¹*State Scientific-Research Institute of Clinical and Experimental Medicine of SB RAMS;* ²*State Scientific-Research Institute of Internal Medicine of SB RAMS, Russia; isrica2@rambler.ru*)

Space reality of life, individual development of a person and his aging and death are compounds of space-bio-

physical circle endlessly repeated on the Earth. Biological thermodynamic provision of this circle is surely connected with helio-geophysical dynamics. The received results testify to the fact that the level of solar activity in prenatal ontogenesis in human organism is surely connected with the duration of his postnatal period. Thus, in people older than 70 years of age ($n=80$) in period of preconceiving and in all stages of embryonic development average meaning of Wolf number (W) $33,7\pm 4,2$ were significantly lower ($p<0,05$) than in people aged 30-70 ($n=80$) ($84,7\pm 11,0$). The task was to evaluate the dynamics of relative content of (δ) isotopes ^{13}C in tissues (nails) of volunteers in the conditions of modeled 600-times weakening of geomagnetic field before, in 2 months and in 4 months of discreet (10 seances) geomagnetic deprivation in screen type installation (patent RF № 2012175 of 30.04.94). Measurement of stable carbonate isotopes content was done with spectrometer Delta of «Finnigan» company in the Institute of geology, geophysics and mineralogy of SB RAS. The analysis of data exceeding error of measurements (1,4%) showed that in the conditions of discreet prolong geomagnetic deprivation, in the contrary of the controls, the tendency of ^{13}C concentration of tissues is seen. Previously when using the methods of fractioning of stable carbonate isotopes in biological systems there was noted that aging and pathological processes associated with age correlate with accumulation of ^{12}C and decreasing content of ^{13}C . The fact of tissues enrichment with ^{13}C isotope in the conditions of weakening geomagnetic field and changed heliosensitivity of human organism makes it possible to manage biothermodynamic processes at the nuclear-molecular level and perspective of slowing of aging processes in human organism using methods of pre-forming of heliogeophysical environment.

508. APPLICATION OF RETINAL PEPTIDE IN THE TREATMENT OF AGE-RELATED MACULAR DEGENERATION

S.V. Trofimova (St. Petersburg Institute of Bioregulation and Gerontology, Russia; svetlana@gerontology.ru)

Senile macular degeneration is a chronic degenerative process in the macular segment of the retina. In the overwhelming majority of cases macular degeneration is inevitably progressing in spite of any conducted treatment. The study was aimed at estimating the effect of synthetic retinal peptide on the development of macular degeneration in 62 patients (120 eyes) aged 60-84 years. Dry form of macular degeneration was diagnosed in 73,5% of cases, and wet form — in 26,5% of cases. After treatment, which included the retinal peptide, 88,3% of patients reported an improved ophthalmoscopic status of the eye fundus (hemorrhages dissipated, macular edema was reduced or disappeared). Fluorescent angiography showed a reduced area of pigmented epithelium exfoliation and functional angiography signs of hemorrhages. Electrophysiological study of the retina also confirmed the improvement of functional activity of the retina. In 85,9% of cases the treatment improved the visual acuity, and in 94,2% of cases it entailed a significant decrease in the number of central scotomas. Thus, the administration of synthetic retinal peptide to patients with macular degeneration in most cases enables not only to stop the progress of pathologic process, but also to regain visual functions, which points out the efficacy of this method of treatment.

509. RESULTS AND PROSPECTS OF PEPTIDE BIOREGULATORS APPLICATION IN OPHTHALMOLOGY

*S.V. Trofimova*¹, *V.V. Neroyev*² (¹St. Petersburg Institute of Bioregulation and Gerontology; ²Helmholtz Moscow Research Institute of Eye Diseases, Russia; svetlana@gerontology.ru)

Ever increasing proportion of older and very old patients is one of the characteristic features of current situation in ophthalmology. Accompanying somatic diseases (diabetes mellitus, angiosclerosis, hypertension etc.) in patients of this age group cause additional alterations of the eye fundus and loss of visual functions. Preserving the visual functions and thus improving the quality of life in older people has always been one of the priorities of both ophthalmology and geriatrics. Retinal degenerations in older and very old age are widespread and occupy the third place among the causes of blindness. Peptide bioregulators (Retinalamin, Cortexin) have been very effectively used in ophthalmology for 20 years, in particular in patients of older age group. 115 patients aged 60-82 years with different retinal degenerations were examined. All of them received peptide bioregulators: Retinalamin — parabolbarly, daily, once a day, 5,0 mg, for 10 days (50,0 mg per course) and Cortexin — intramuscularly, daily, once a day, 10,0 mg for 10 days (100,0 mg per course). Control patients (42 persons) received a conventional anti-degeneration treatment. Administration of peptide bioregulators improved the visual functions in 91,3% of cases. Visual acuity gain by 0,2–0,4 was registered in 46,9% of cases. Computer perimetry showed the reduction of the quantity of absolute and relative scotomas by 2,5 times. In 85,2% of cases the functional activity of the retina was improved; retinal blood circulation was improved in 78,7% of cases. Due to their pronounced antioxidant activity the peptide medications normalized the blood antioxidant activity in all patients. Control patients did not report any reliable dynamics of visual functions under the effect of conventional treatment. Thus, the application of peptide bioregulators to older and very old patients in the majority of cases enables not only to stop the development of pathology, but also to gain visual functions, which points out good prospects of this method of treatment in ophthalmogeriatrics.

510. PSYCHO-EMOTIONAL STRESS AND BODILY DISEASES IN VETERANS OF SPECIAL RISK SUBDIVISIONS

*V.N. Tsygan*¹, *N.V. Alishev*², *B.A. Drabkin*², *V.M. Fedoseev*¹, *F.A. Ovsyannikov*¹ (¹Russian Military Medical Academy; ²Scientific-medical center of the Committee of veterans of special risk subdivisions in Russian Federation; tkudr_elderly@mail.ru)

Wars, natural disasters, plane accidents and other psycho-emotional experiences can result in development of mental disorders which total are usually considered post-traumatic syndrome. To study the contribution of psycho-emotional stress to development of further changes in the state of health of veterans of special risk subdivisions (SRS) we used clinical, neuro-physiological and biochemical methods enabling to characterize the functional state of central nervous system (CNS), hypothalamus and hypophysis, and the state of neuro-humoral regulation. The groups of liquidators of radiation accidents in nuclear submarines whose radiation dose is fixed and veterans participated in nuclear weapons ground testing and in liquidation of their sequels were examined. The results showed

the structure of diseases among the SRS veterans: cardiovascular system disorders account 85%, including ischemia heart-disease (79%) followed by cardiac infarction (25%), hypertension (58%) and insufficient circulation of the blood (60%). Higher sickness rate of cerebrum of vascular genesis (70%) and relative prevalence of chronic asthenia-neurotic state (48%) are the main peculiarities of state of health of the SRS veterans. Neuro-physiological changes in people who were exposed to a number of factors of radiation accident become apparent in dysfunction of di-encephalic structures and basal ganglions (32%) and in asthenia syndrome caused by irritative-dystrophy changes in cerebral cortex (66%). These changes arise mostly in frontal-central regions of cerebral cortex, then strengthen in dynamic and spread to hinder sections covering all convex surface of the cerebrum. Changes of bioelectric activity of cerebrum correlate with results of the psychological test showed a stable decrease of intellectual work ability, attention persistent and mental activity. Neurophysiologic changes in liquidators of consequences of the incident in Chernobyl atomic station of young and middle age demonstrate a certain similarity to that in elderly people, which is possibly conditioned by development of accelerated ageing of physiologic systems of the organism with evident signs of premature insufficiency of cerebral blood circulation. These results, absence of radiation pathology and metabolic diseases testify that the strong psycho-emotional overstrain is a factor resulting in disorder of CNS and development of cardio-vascular pathology. That very long psycho-emotional overstrain brings about abrupt diminishing of blood-vessels, increasing blood pressure and injuries of endothelium cells and about quick development of atherosclerosis, injuries of coronary vessels and cerebrum vessels.

511. THE FEATURES OF CEREBRAL BLOOD FLOW AND COGNITIVE FUNCTION AT THE PATIENTS WITH ARTERIAL HYPERTENSION OF ELDERLY AGE

M.K. Tundybayeva (Scientific research institute of cardiology and internal diseases, Kazakhstan; mira_2828@mail.ru)

Aim: to study the features of cerebral blood flow and cognitive function at the patients with arterial hypertension of elderly age. *Material and methods:* 46 patients without local organic brain changes, the monitoring group included 18 healthy persons (10 men, 8 women, mean age $68,2 \pm 3,8$ yrs) and 2 group — 28 patients with arterial hypertension (AH) of the IInd and IIIrd degree, average and high risk (15 men, 13 women, mean age $71,5 \pm 2,6$ yrs) are surveyed. Cerebral blood flow was examined by color Doppler sonography. Blood flow was examined in extracranial (common carotid artery (CCA), internal carotid artery (ICA)) and intracranial regions (vertebral artery (VA) and middle cerebral artery (MCA)). Systolic, diastolic linear speeds of cerebral blood flow were determined. Cerebrovascular reactions were investigated by hypercapnic test and compression test by calculation of reactivity index. To study cognitive functions, the authors used the Mini-Mental State Examination, Folstein et al., 1975. *Results:* The results of research have shown, authentic increase of common carotid artery intima-media thickness at the patients 2 groups of supervision, accordingly $1,08 \pm 0,32$ and $1,22 \pm 0,28$, $p < 0,05$. At the patients with AH the expressed changes of linear speed of cerebral

blood flow in brachiocephal and vertebrobasilar pool were observed: were reduced systolic and diastolic linear speed in ICA at comparison with parameters of the healthy persons ($p < 0,05$), systolic and diastolic linear speed in VA ($p < 0,05$). At psychological testing is revealed authentic reduction cognitive function at the patients with AH in comparison with the healthy persons, accordingly $26,8 \pm 0,3$ and $24,2 \pm 0,2$, $p < 0,001$. *Conclusions:* The carried out research has shown that at the patients with arterial hypertension of elderly and senile age even in cases of absence of organic brain changes observed chronic cerebral ischemic disease that is accompanied by deterioration cognitive function.

512. CARDIAC SYNDROME AT THE PATIENTS WITH ARTERIAL HYPERTENSION OF ELDERLY AGE

M.K. Tundybayeva, G.A. Junusbekova (Scientific research institute of cardiology and internal diseases, Kazakhstan; mira_2828@mail.ru)

Aim: to study the parameters of a structural condition of the left ventricle at the patients with arterial hypertension of elderly age. *Material and methods:* the 1st group of 22 patients middle-aged (14 males, 8 females, average age $57,4 \pm 3,1$ yrs); the 2nd group of 18 patients of elderly age (11 males, 7 females, average age $63,8 \pm 3,2$ yrs). The thickness of interventricular partitions (IVP), the thickness of the back wall of the LV (BWLV), final systolic and final diastolic sizes the LV, indexes of final diastolic volume of the LV (FDV), index of final systolic volume (FSV), strike index were determined (SI), MMLV was expected by method of Penn. An index of relative thickness of a wall (2H/D), fraction of emission (FE) LV and a degree of shortening of anterior- posterior size LV in a systole (ΔS) were also defined. Functional condition of the LV was estimated according to the following parameters: FDV LV ratio to MMLV (FDV/MMLV index). Final systolic meridional stress (FSMS) (R.Devereux). The data are submitted as average \pm standard deviations (rejections) ($M \pm SD$). *Results:* At comparative analysis of the echocardiography parameters at persons of the 1st and the 2nd groups authentic changes of key parameters describing structural condition of the LV are revealed: IVP ($0,82 \pm 0,09$ and $0,94 \pm 0,2$ accordingly, $p = 0,004$), BWLV ($0,86 \pm 0,09$ and $0,96 \pm 0,2$, $p = 0,005$), SI ($39,4 \pm 6,2$ and $48,7 \pm 11,4$, $p = 0,003$), HI ($2,9 \pm 0,8$ and $3,2 \pm 0,5$, $p = 0,005$), FDV/MMLV ($0,68 \pm 0,11$ and $0,58 \pm 0,14$, $p = 0,005$), IMMLV, g/m^2 ($87,8 \pm 17,4$ and $128 \pm 30,7$, $p = 0,002$), 2 H/D ($0,33 \pm 0,04$ and $0,38 \pm 0,08$, $p = 0,022$), FSMS ($40,8 \pm 10,4$ and $60,4 \pm 15,8$, $p = 0,0003$). *Conclusion:* At the patients with arterial hypertension of elderly age the whole complex of morphostructural changes of the heart, including hypertrophy of the LV, change of geometry of its cavity and walls of the myocardium, accompanying by increase of final systolic meridional stress is observed.

513. AORTIC NO-TOUCH TECHNIQUE OF MYOCARDIAL REVASCULARIZATION IN OCTOGENARIANS

T. Urban, M. Semrad, R. Spunda, M. Salmay, M. Spacek, J. Tosovsky (Charles University, Prague 2, Czech rep.; urbankardio@seznam.cz)

Objective: Surgical revascularization in octogenarians has become more frequent procedure despite of its higher morbidity and mortality. Due to comorbidities, advanced age, general atherosclerosis and complex coronary ar-

tery lesions; a new and specific approach is inevitable. Aortic manipulation and cardiopulmonary bypass are independent risk factors affecting morbidity in such patients and that was the reason for adopting the «aortic no-touch technique» for elderly in our series. *Methods:* From 2004 through 2006, coronary artery bypass grafting was performed in 113 octogenarians. A subgroup of 40 cases was done with «aortic no-touch technique» (off-pump, skeletonized sequential or composite arterial grafts — LIMA, RIMA, radial artery). Another 73 cases were operated on using a «routine technique» (on-pump or off-pump with LIMA and saphenous veins & proximal anastomoses hand-sewn on ascending aorta). There were no differences among both groups regarding the age (80 vs. 81,4 years), EF (49,5 vs. 50%), diabetes (37 vs. 40%) and procedural urgency (26,7% vs. 27%), additive Euroscore (8,8 vs. 7,4%), logistic Euroscore (17,5% vs. 17%) and lower limb chronic ischemia (25 vs. 16%). *Results:* A 0% mortality rate was observed in «No-touch» group and 11% in «Routine» group. Reopening for bleeding was needed in 4,1 vs. 2,5%, TIA or stroke occurred in 5 vs. 5,4%, mental disorders were detected in 7,5% vs. 25% and wound healing complications in 10 vs. 22%. A total artificial ventilation time was 17 hours vs. 46 hours and ICU length of stay 99 vs. 121 hours. *Conclusions:* We have observed statistically significant improvement in almost all tracking parameters in patients over 80 operated on using aortic no-touch technique when compared to routine CABG. This technique is able to afford longer life expectancy (full arterial grafting) and better quality of life (less morbidity and mortality) and thus seems to be a better option for octogenarians requiring direct myocardial revascularization.

514. OXIDATIVE STRESS IN CAROTIDIAN ATHEROSCLEROSIS AGED PATIENTS

A. Valuch¹, S. Opris¹, L. Iliuta², F. Halici¹, P. Gherasim¹, E. Constantinescu¹ (¹Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, ²Institute for Cardiovascular Disease «CC Iliescu», Bucharest, Romania; valuch_anton@yahoo.com)

The aim of this study is to elucidate some of the oxidative stress (evidenced by glutathione equilibrium) mechanism implicated in carotid atherosclerosis and the possible correlations with other biochemical parameters in human aged patients. *Material and method.* Patients were selected by the National Institute of Gerontology and Geriatrics – Ana Aslan», Bucharest and the Institute for Cardiovascular Disease – C.C. Iliescu», Bucharest. Patients (50–84 yrs, n=19) with different stenosis grades were considered. Diabetes mellitus was considered to be exclusion criteria. GSH and GSSG were determined by using spectrophotometry with bioxitech GSH/GSSG-412TM kit (Tietze method). Stenosis grade was determined by Doppler echography. Biochemical parameters were determined by Olympus AU 400 analyzer. *Results.* GSSG is positively correlated with age on the 50–84 yrs interval ($r=0.483$, $p<0.05$, $n=19$). This proves that oxidative stress increases with age and is a possible risk factor in producing the atherosclerosis process. GSH like antioxidant factor is possible to prevent atheroma progression and HDL is known to be good cholesterol. Our data shows that atheroma area is negatively correlated ($r=-0.166$) with GSH and HDL ($r=-0.157$) but statistically insignificant. A strong positive correlation appears between cholesterol and LDL ($r=0.901$, $p<0.01$,

$n=19$) but not between cholesterol and HDL, emphasizing the difference between the two types of specific cholesterol.

515. ASSESSMENT TOOLS FOR VISUAL AND AUDITIVE DISTURBANCES

M. Van Daele, J.P. Baeyens (AZ Damiaan Oostende; jpbayens@azdamiaan.be)

Aim: Visual and auditive problems are frequent but frequently overlooked in the very old persons. The safety and the quality of life is dependent from good visual and auditive contacts. It's not possible to ask that all patients should be seen by an ophthalmologist and a audiologist. Knowing the problems its possible to ask specialist advice, or if no cure is possible, adaptation of lifestyle or environment can be organised. *Method:* The occupational therapist present every patient of the Geriatric unit or visiting the Geriatric Day Hospital a visual and an auditive test, quick and easy. *Visual test;* the patient has to read the little characters of a newspaper, the headings of a newspaper and to recognize three big photographs (A4) from famous Belgian people as the King, the Queen and the Pope. *Auditive Test:* according the Geriatric Screening nach Lachs (Germany) we whisper three decimal digits at 30 cm distance from each ear; the patient has to repeat each of these decimal digits. There is a score according the number of exact answers, right and left. *Results.* Many patients have indeed visual deficits, sometime they are aware of it, other times not; sometimes the optical devices are not suited, some times we have the explanation why the patient has dysfunctions in the daily life activities. Much more patients had unexpected auditive problems, sometimes unilateral (sometimes only earwax). *Conclusion.* We can recommend to add to every geriatric assessment this model of visual and auditive assessment. They are easy to perform and reliable.

516. AN INTERDISCIPLINARY APPROACH TO DEVELOPING CULTURALLY APPROPRIATE DIABETIC EDUCATION MATERIALS FOR OLDER RUSSIAN-SPEAKING IMMIGRANTS

C.R. Van Son¹, M. Paeth², J. Newman², D. Whedon², Y. Benikov³, J. Zentner⁴, C. Lehner⁵, A. Manely² (¹Oregon Health & Sciences University, School of Nursing, Portland, Oregon, USA; ²Southwest Washington Medical Center, Vancouver, Washington, USA; ³Vancouver, Washington, USA; ⁴SeaMar Family Clinic, Vancouver, Washington, USA; ⁵Southwest Washington Family Medicine, Vancouver, Washington, USA; vansonc@ohsu.edu)

Purpose: Many countries are experiencing the influx of older immigrants. Older adults often experience two or more chronic conditions which require one to make changes in their lifestyle successfully manage them. Often patient education materials are translated for use by the immigrants but these translations often do not provide culturally appropriate content. Over the last 15 years the United States has experienced a wave of Russian-speaking immigrants from the former Soviet Union. Characteristics of this group are that they are older and suffer from chronic illnesses such as hypertension and diabetes. Few educational materials are available in the Russian language and none are culturally appropriate reflecting the eating habits, food choices and activities of this group. This presentation illustrates the process of developing culturally appropriate patient education materials and will provide examples of the educational materials for participants. *Design/Methods:*

An interdisciplinary team, including a Russian-speaking cultural consultant, met regularly to develop culturally appropriate educational materials. Draft materials were presented to a focus group of older Russian-speaking individuals to provide input on the content and design. Once materials were completed, health educators and clinicians pilot-tested the materials with older Russian-speaking diabetics 55 years of age and older. Clients who received the materials were interviewed by telephone a few weeks later by a Russian-speaking interpreter to evaluate the usefulness of the materials. Final edits were made and the materials are now available from the hospital's internet site to be accessed by anyone needing culturally appropriate Russian language diabetic education materials. *Results:* Twelve educational items were created. Unique items included placemats which illustrated healthy balanced and traditional meals such as soup. An exercise pyramid was reconceptualized into a triangular incline to encourage increasing levels of activity being a part of this group's daily life, such as walking to the store, playing with grandchildren and gardening. Food lists incorporated foods commonly used by this group. In addition, materials were visually designed to meet the needs of the older adult. *Conclusion:* Translation of patient educational materials are important in the management of chronic illness in immigrant populations; however, equally essential is the cultural translation and adaptation of materials if they are to be accepted and used by clients from different cultures.

517. NURSING CARE OF OLDER ADULTS: A SERIES OF WORKSHOPS FOR FACULTY IN THE RUSSIAN FEDERATION

C.R. Van Son¹, M. Schoessler², J. Overall¹, Y. Koleva³
(¹DOBRA, Inc., USA; ²Providence Health System, Portland, Oregon, USA; ³Tulane University, New Orleans, Louisiana, USA; vansonc@ohsu.edu)

Purpose: A group of nursing faculty in the Russian Federation requested a series of weeklong workshops focusing on the nursing care of older adults. The workshops were developed to support the development of curriculum to prepare nursing students to meet the healthcare needs of older adults. *Design:* Four workshops conducted in Moscow, Russia were designed in partnership with Russian nursing faculty to facilitate the infusion of the content into nursing curricula and practice. Conference calls and email were utilized to plan the workshops between the US and Russia. Topics included quality of care, leadership and administration, interdisciplinary teams, establishing professional networks and introducing experiential learning theories and methods. The clinical content of the workshops focused on topics such as normal aging changes and geriatric assessment (2000), mental health issues such as depression, delirium and dementia (2002); focused assessments, skin care management including pressure ulcer prevention (2004), and care at the end-of-life including pain management (2006). All written materials were translated into Russian and interpreters were present during the workshops. *Results:* Annual evaluations found that the workshops were applicable to practice and educational settings. Participants shared what they planned to do, or had done with the materials and content in their various settings. Materials were used as provided, adapted for use or new materials were developed based on the ideas learned, student needs and resources available. This presentation will discuss how materials were adapted for the host coun-

try and share the specific ways in which the workshop content was infused in educational and workplace settings by participants and the networks developed over a period of six years. Some of these include the creation of patient education games for learning how to manage diabetes, development of a clinical education lab to teach nursing students about the specific needs of older adults, utilizing role playing to teach nursing staff, presenting workshops for other nurses in their regions, and some have increased student education hours to address the needs of older adults. *Conclusion:* To meet the healthcare needs of older adults in the global community, healthcare professionals must be prepared both with the knowledge and skills unique to gerontology. This series of workshops assisted nursing faculty to develop course content and teaching strategies for gerontological nursing education and establish networks for sharing information across schools of nursing in the Russian Federation.

518. UNRECOGNIZED DEPRESSION IN OLDER ADULTS LIVING IN RESIDENTIAL CARE FACILITIES

H. Vankova, I. Holmerova, H. Janeckova, P. Veleta
(Centre of Gerontology, Prague, Czech Rep.; h.van@seznam.cz)

Introduction: Depression in older age is a severe condition worsening quality of life and health, affecting not only individuals, but also the whole ageing society. Its prevalence is highest in institutions. Depression in older adults often remains unrecognized and untreated. We focused on institutionalized older adults living in residential care facilities in the Czech Republic and compared their situation with result of relevant studies from other countries. *Methods:* 329 residents (mean age 82) from 12 residential homes in the Czech Republic were examined. *Measurements:* Geriatric Depression Scale-15 (Sheikh & Yesavage, 1986), MMSE, ADL. Information about medication use was obtained from medical records. *Results:* According to GDS-15, 33% of respondents were mildly depressed (GDS 6-10), 13% had severe depressive symptoms (GDS 11+), 48% were without depressive symptoms. 6% had normal GDS score but they were actually treated with antidepressants. Less than 40% of seniors with severe depressive symptoms and only 14% of seniors with mild depressive symptoms were treated with antidepressants. *Conclusion:* Depression in inhabitants of residential homes in the Czech Republic is very frequent and often remains untreated. Better methods should be adapted by care staff to increase the recognition and improve the management of depressive symptoms in institutionalized seniors. *Supported by the grants No 8488 and No 8487 of the Internal Grant Agency of the Ministry of Health of the Czech Republic.*

519. EFFECT OF DANCE THERAPY ON MOBILITY IN INHABITANTS OF RESIDENTIAL HOMES

H. Vankova¹, K. Pankova², P. Veleta¹, I. Holmerova¹
(¹Centre of Gerontology, ²Faculty of Physical Education and Sport, Charles University, Prague, Czech Rep.; h.van@seznam.cz)

The goal of our research project is to develop a dance and movement therapy program for seniors, which would be easy to implement in institutions. Furthermore, our aim is to assess its effect on health status of seniors and their quality of life via randomized controlled trial. *Methods:*

Results from the first five residential homes have been analyzed: 126 participants randomly assigned to intervened (1) (62) and a control group (64). 3 months of intervention, dance program once a week. A range of functional assessment scales has been used. As a basic mobility assessment get up and go test has been applied. For a subgroup of participants from two residential homes the effect of dance therapy on mobility has also been analyzed and assessed by Senior Fitness Test (Rikli&Jones, 2001): chair stand test, arm curl test, 2-minute step test, chair sit-and-reach test, 8-foot up-and-go test, and back scratch test. Paired samples t-test has been used to analyze the effect of intervention. *Preliminary results:* Mobility of participants assessed by get up and go test improved after intervention, while in the control group it did not change. However, the improvement was insignificant. Among the six subtests of the Senior Fitness Test, there was a significant improvement in four of them (chair stand test, arm curl test, 2-minute step test, 8-foot up-and-go test) in the intervened group ($p < 0.05$), while the scores of control group in these subtests decreased. There was no significant change in the other two subtests. *Conclusion:* Dance therapy has a positive effect on mobility of older adults. Detailed analysis on a larger sample after finishing of the study is needed. This research project was supported by the grant No 8487-3/2005 of the Internal Grant Agency of the Ministry of Health of Czech Republic: «Effect of Dance Therapy on Health Status and Quality of Life in Inhabitants of Residential Homes». (1) Nedává smysl — nerozumím tady máte na mysli — randomly assigned to intervene??

520. FALLS IN INSTITUTIONALIZED OLD PEOPLE: NEED OF REGISTER

N. Varela, A. Maseda, I. Gonzalez-Abraldes, P. Marante, A. Bujan, J.C. Millan-Calenti (University of A Coruna, Spain; nati.enfermeria@centrolamilagrosa.org)

Everybody knows the importance of preventing falls in elder people, given the great repercussion that they have on their health. Most of healthy elder presents risk of falls due to the decrease of physical and psychical skills, typical of the age. If you add some pathology to it, the risk increases. Nowadays, the Adult Day Care Center La Milagrosa (A Coruna, NW Spain) has 80 users whose most characteristic profile is a 80 years-old woman, with slight-moderate cognitive deterioration and alteration of the gait at motor level. The aim of the present study was to establish a system of register that allowed us to know the reasons and consequences of the falls of patients in an Adult Day Care Center, in order to prevent them and prepare the intervention protocols. The first day in the Center, a patient's history of falls was carried out and the fall risk evaluated. Functional and cognitive status, as well as pharmacological antecedents and drugs intake, were evaluated. On the basis of it, patients were divided in four levels of risk: a) without fall risk (49%); b) minimum fall risk (26%); c) medium fall risk (18%); and d) high fall risk (7%). Users included in level A needed no help at all. Group B only required supervision; while patients in level C needed support in all displacements and users included in D needed constant control and required physical help in the displacements. The risks presented by each person and the necessary measures to avoid them were communicated to the staff. During the period between November 2001 and February 2007, 172 falls were registered in the Center. Falls took

place in the therapy-rooms (73%), entrance/exit (13%), bath (9%) and garden (4%). Luckily, 45% of the falls had no consequences. However, 22% of the users suffered hurts, 17% contusions, 6% fractures, 3% scratches and 6% other consequences. As a consequence of the falls different measures were adopted: control by the nurse (61%), call to emergency service (16%), control by the director (4%) and other measures (7%). The risk of falls increases with the age, and even more if the person presents other concomitant alterations. Due to this, it is important to carry out an exhaustive register of the falls in the centers of attention for old people, in order to know -at every moment, the preventive and intervention measures to apply.

521. GEROPROTECTIVE PEPTIDES OF THE PINEAL GLAND

B.V. Vaskovsky (Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry RAS, Moscow, Russia; taeek@ibch.ru)

Researchers of the St. Petersburg Institute of Bioregulation and Gerontology RAMS V.Kh. Khavinson and V.N. Anisimov studied for many years the effectiveness of pineal gland preparation (Epithalamin) in human aging. They showed the ability of Epithalamin to normalize the basic functions of the human organism, i.e. to improve the indices of cardiovascular, endocrine, immune and nervous systems, homeostasis and metabolism. Experimental data indicated that most of these pharmacological properties are connected with the action of peptide bioregulators. That was later demonstrated by long-term investigations of the geroprotective properties of Epitalon (Ala-Glu-Asp-Gly) that proved out to be even more beneficial than melatonin and other known pineal hormones. These results stimulated us to investigate individual peptide components of Epithalamin. We developed the fractionation scheme of this preparation that allowed us to isolate peptides in quantities sufficient for primary structure determination by the modern means of peptide chemistry (N-terminal and amino acid analysis, automatic sequencing and mass-spectrometry). A number of new pineal peptides were sequenced and synthesized, the study their geroprotective effects is in progress now.

522. SOLID-STATE ISOTOPIC EXCHANGE OF HYDROGEN IN PROTEINS AND PEPTIDES AND ITS APPLICATION FOR PHARMACOLOGY OF GEROPROTECTORS

B.V. Vaskovsky¹, Yu.A. Zolotarev² (¹Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry RAS, ²Institute of Molecular Genetics RAS, Moscow, Russia; taeek@ibch.ru)

We developed new analytical methods based on high temperature solid phase catalytic isotope exchange reaction (HSCIE) that can be used in peptide pharmacology. Biologically active peptides evenly labeled with tritium were used for studying the in vitro and in vivo biodegradation of the peptides. The distribution of the isotope label among all amino acid residues of these peptides allows the simultaneous determination of practically all possible products of their enzymatic hydrolysis. The procedure includes extraction of tritium-labeled peptides from organism tissues and chromatographic isolation of individual labeled peptides from the mixture of degradation products. The concentrations of a peptide under study and the products of its biodegradation were calculated from the results of liquid scintillation counting. The HSCIE reaction allows also the production of evenly deuterium labelled proteins and

peptides, and their application makes it possible to create a qualitative mass spectrometry method for peptide analysis. Introduction of definite amounts of these deuterium-labeled proteins into biological objects, prior to isolation, separation and trypsinolysis, will generate quantitative information concerning the composition of the object. These approaches were successfully used for studying the peptide geroprotectors livagen and epitalon, that were introduced in clinical practice by Khavinson V.Kh. and coworkers [1]. 1. Kost N.V., Sokolov O.Iu., Gabaeva M.V., Zolotarev Iu.A., Malinin V.V., Khavinson V.Kh., *Izv Akad Nauk Ser Biol.* 2003,4,427-9 (Russian).

523. DANCE THERAPY FOR PHYSICALLY DISABLED SENIORS CONFINED TO WHEELCHAIRS

P. Veleta, I. Holmerova, H. Vankova (*Centre of Gerontology, Prague; h.van@seznam.cz*)

Hypokinesia increases with age and it is an important risk factor for many disorders and for the frailty of the old age. It is often very difficult to motivate seniors to exercise, to do physical activity. Dance is not only a type of physical activity, but it is also a social and emotional event. It is, therefore, easier to motivate and –invite« seniors to dance. We developed dance therapy suitable for physically disabled seniors confined to wheelchairs, for frail seniors and for patients with dementia. After seven years of experience with dance therapy, we have started a randomized controlled trial on the effect of dance therapy on health and quality of life of seniors in institutions. We examine its effects on self-reported health, mobility, quality of life, depressive symptoms etc. Disabled seniors form one subgroup of participants of the study. Despite the fact that so far we have only preliminary results of the study, we can document the effect of the dance therapy in several case studies. The video presentation will depict our methods as used in dance therapy for disabled seniors and document the effect of the dance therapy in several case studies. We assume that –dance« and movement are positive factors in the life of even severely disabled persons; they enjoy the therapy and profit from it. This research project was supported by the grant No 8487 of the Internal Grant Agency of the Ministry of Health of the Czech Republic: –Effect of Dance Therapy on Health Status and Quality of Life in Inhabitants of Residential Homes».

524. IN-HOSPITAL FUNCTIONAL DECLINE IN PATIENTS AT DELIRIUM RISK: DIFFERENCES BETWEEN GERIATRIC AND MEDICINE WARDS

M. Vidan, B. Montero, E. Sanchez-Garcia, M. Alonso, J. Ortiz, J.A. Serra (*Hospital General Universitario «Gregorio Marañon», Madrid, Spain; mvidan.hugm@salud.madrid.org*)

Objective: To compare the incidence and risk factors of functional decline during hospitalization between an acute care geriatric unit (GER) and an internal medicine ward (MED). **DESIGN:** Analysis of a prospective, cohort study of consecutive patients aged 70 years or older with delirium risk criteria hospitalized during 10 months for an acute disease. **Methods:** Demographic characteristics, comorbidity, severity of the disease, delirium rate and hospital practices related with functional decline were analyzed. Functional decline was defined as the loss of at least one of the basic activities of daily living respect to preadmission status. The influence of admission service, and its differ-

ent clinical practice, was evaluated by a logistic regression model. **Results:** 379 patients were included (140 in GER and 239 in MED). Compared with MED, patients in GER were older, had greater prevalence of dementia (37% vs 15.5%, $p<0.001$) and worse previous functional status. The incidence of delirium during hospitalization was 25% in GER and 10% in MED ($p<0.001$). The proportion of patients who spent >48 hours in bed, received nocturnal medication, or were not accompanied by relatives was lower in GER. The functional decline rate was greater in MED than in GER (60.2% vs 48%, $p=0.04$), with a similar hospital stay (7.7 vs 8.1 days, $p=0.37$). Age, delirium, lack of mobilization, rest in bed, psychotropic drugs, nocturnal medication and physical restraints were associated with functional decline. Admission in MED was associated with a greater risk of functional decline independently of age and previous functional status. **Conclusions:** Functional decline during hospitalization for acute diseases is frequent among frail patients. In addition to age and delirium, many modifiable clinical practices are associated with this complication. In patients at risk of delirium admission in geriatric wards may be associated with a lower functional deterioration than admission in internal medicine wards.

525. OXYCODONE IS A USEFUL OPIOID AGONIST IN COMPLEX CURES OF PATIENTS WITH PAINFUL VASCULAR ULCERS

E. Villegas, A. Torres, M. Gambau, M. Tella, J. Garcia (*Hospital dos de maig, Hospital at home unit, Barcelona, Spain; eulalia.villegas@sanitatintegral.org*)

Introduction. Infected vascular ulcers frequently need intense analgesia during cures and the next hours. Habitual analgesic treatments are high doses of non-steroidal anti-inflammatories (NSAI), but frequently the pain intensity forces the use of opioid derivatives. Oxycodone hydrochloride is a pure opioid agonist with affinity for μ , δ and κ opioid receptors. Because this substance has very high oral bioavailability (60–80%), a plasmatic mean life of 3 hours, and a fast beginning of analgesic effects, oxycodone is a good alternative for treatment to oncologic disruptive pain. **Objectives.** To study the analgesic efficacy of oxycodone in complex vascular ulcers than precise cures with high pain associated, and to analyse its side effects, renal and hepatic analytic parameters, and tolerance. **Methods.** 11 patients diagnosed of painful vascular ulcers, with bad response to NSAI, were treated with doses of oral oxycodone (2–4 ml of solution, equivalents to 20–40 mg oxycodone hydrochloride), administered one hour before cures. We measured analgesic intensity with the Visual Analog Scale (VAS) during the cure with NSAI, before to begin oxycodone treatment (EVA-pre), during the cure (EVA-during) and two hours after (EVA-post) each cure with oxycodone. We registered also the incidence and intensity of its side effects, and renal and hepatic analytic parameters. **Results:** 4 men, 7 women, mean age: 71 years (range 56–98). Mean treatment duration 33 days (range 12–64). **EVA-pre:** Mean 8.7 (range 7–10); **EVA-during:** Mean 2.5, range 0–5. **EVA-post:** Mean 2.5, range 0–4. No supplementary analgesia during the cures was needed. **Side effects:** We not detected any relevant side effect associated to punctual doses of oxycodone. The treatment was not related with analytic impairment of renal or hepatic function. **Conclusions:** Punctual treatment with oral oxycodone is a good alternative to conventional analgesia for painful cures of complex vascular ulcers.

526. HOSPITAL AT HOME, A VALID ALTERNATIVE TO CONVENTIONAL HOSPITALISATION FOR FRAGILE PATIENTS

E.B. Villegas, A. Torres, M. Gambau, M. Tella, R. Capmany (Hospital dos de maig, Hospital at home unit, Barcelona, Spain; eulalia.villegas@sanitatintegral.org)

Introduction. Hospitalisation at home (HAH) consists in the admission of patients in hospitalisation due a acute clinical diagnostic that needs complex treatment and surveillance in hospital, but with maintenance of the patients in his domicile. The same therapeutics measures than in hospital are realised by a specialised team of medicine doctors and nurses, who displaced to patient's home. Formal contraindications for HAH are hemodynamic instability, absence of caregiver, or necessity of cures that precise strictly conventional hospitalisation (CH). **Objectives.** To study clinical and sociosanitary characteristics of fragile geriatric patients in a HAH Unit. **Methods.** Observational study of fragile geriatric patients admitted in HAH Unit of a urban hospital during a year. Description of clinical diagnostics, functional status (Barthel Index, BI), risk of mortality associated to comorbidity (Charlson Index, ChI), satisfaction of patients (measured with a local questionnaire of satisfaction survey). Evaluation of nosocomial complications reflected in the official quality index of Catalonian Autonomic Health Government. **Results.** During the year 2006 were admitted in HAH 147 patients, 121 with geriatric fragility (82%), 61 women and 60 men, mean age 79 years (range 65-96). **Medical main diagnostics** (n=71): 30 systemic infections (28 respiratory), 23 complex medication adjustments, 12 cardiac failure, 3 pulmonary embolisms, 3 symptomatic controls. **Surgery main diagnostics** (n=50): 29 infected vascular ulcers, 16 surgery complications, 5 previous decubitus ulcers. **BI:** Severe dependence 13 (11%); moderate dependence 8 (7%); light dependence 47 (39%); functional independence 53 (43%). **Co-morbidity:** 59 (49%) cardiac failure; 45 (37%) atrial fibrillation; 37 (31%) chronic pulmonary disease; 36 (30%) diabetes mellitus; 31 (26%) dementia; 28 (23%) chronic renal disease; 28 arterial vasculopathy (23%); 11 ACV (9%); 10 infection by bacteria that need hospitality isolation (8%); 7 active neoplasia (6%); 4 myocardial infarction (3%); 3 connective disease (2%); 1 chronic hepatopathy (1%). **ChI:** 0, 9 patients (7%); 1-2, 51 (42%); 3-5, 56 (46%); ≥ 6 , 5 patients (4%). **Punctuation of Satisfaction questionnaire:** 9.8/10. **Official quality index:** Complaints 0%; phlebitis 0.02%; decubitus ulcers 0%; cardiac arrest 0%; serious falls 1.4%. **Conclusions.** Patients admitted in a HAH Unit presents a very low percentage of nosocomial complications. HAH can care patients with complex medical and surgical diagnosis, and must be considered an alternative recurs to CH, especially for people with great fragility and high risk of nosocomial complications and to worse his functional dependence.

527. MEMANTINE IN COMBINATION WITH CHOLINESTERASE INHIBITORS IN DEMENTIA TREATMENT

A. Vilorio, A. Besga, R. Yubero, A. Rodriguez, P. Gil, J.M. Ribera (Hospital Clinico San Carlos, Madrid, Spain; raquel_yubero@hotmail.com)

Aims: To describe the main features of a sample of patients with dementia being treated with IACE and in whom treatment with Memantine is started. **Methods:** Retrospective study of 29 patients, following in a Memory Unit. We collected datas about demographics variables,

cognitive and functional status, type of IACE, length of the treatment with the IACE and GDS at the dementia diagnosis time and at the time when the memantine treatment is decided. **Results:** N: 29 patients. Mean age: 76.4 + 5.5; Mean educational level 10 years + 5; 79,3% female. The diagnosis of the sample are: Alzheimer's Disease 69% (N=20), Vascular Dementia 17.2% (N=5), Primary Progressive Aphasia 6.9% (N=2) and Frontal Dementia 6.9% (N=2). The IACE treatment at the diagnosis was: Donepezil 58.6% (N=17); Galantamine 20.7% (N=6); Rivastigmine 20.7% (N=6). Functional status: At the time of diagnosis most of the patients were in between KATZ A to C (72.4%. N=21) and with a Lawton score >3 (34.5%. N=10). At the time of combined treatment with memantine 55.2% (N=16) of the patients had KATZ score A to C and 6.9% (N=2) of them had a Lawton score >3 . Cognitive function: the MMSE score at the diagnosis was 19.21 + 3.9, and at the time of the combined treatment was 11.93 + 4.1. Global Deterioration Scale (GDS): 96,7% of the patients were at the stage 4 at the diagnosis. When memantine was added, 76,7% were at stage 5 and 23,3% were at stage 6. The time between the diagnosis and the combined treatment was 26.48 + 13.1 months. **Conclusions:** The mean time passed between the diagnosis and the combined treatment was about 2 years. The functional status and cognitive function of the patients at the moment of the combined treatment were worse, and that is the main reason to decide add memantine. The combined treatment is well tolerated in all of the patients of our sample. Nowadays we are making a follow-up study of the sample.

528. PREVALENCE AND LONGITUDINAL TRENDS IN PRESCRIPTION OF POTENTIALLY INAPPROPRIATE MEDICATIONS IN THE CZECH REPUBLIC

J. Vinsova¹, D. Fialova², E. Topinkova³, J. Vlcek¹, M. Wawruch⁴, Z. Vitasek⁵ (¹Faculty of Pharmacy in Hradec Kralove, Charles University in Prague, Czech Rep.; ²Faculty of Pharmacy, Charles University, Prague; ³1st Faculty of Medicine, Charles University, Prague and Institute of Postgraduate Medical Education Prague; ⁴Institute of Pharmacology, Faculty of Medicine, Comenius University in Bratislava; ⁵Employee Insurance Company Skoda, Mlada Boleslav, Czech Republic; etopink@vfn.cz)

Background: A new concept of potentially harmful medications for elderly patients was introduced in early 90s by expert panel led by M.H.Beers and listed as «potentially inappropriate medications» known as Beers' criteria. Prescription of these medications is expected to be low in older patients and their frequent use is understood as indicator of poor quality prescribing. However, previous studies documented their rather high use in several European countries including the Czech Republic. **Objectives:** To evaluate prevalence and trends in prescribing of potentially inappropriate medications defined by Beers' criteria (revised version 2003) during January 1997- December 2001. Study design: Retrospective study analyzing 1 776 119 drugs dispensed on medical prescription to community living elderly (65+) insured by the Employee Insurance Company Skoda, Mlada Boleslav, Czech Republic. Mean yearly number of insurers 65+ was 10 632. **Results:** The analysis documented frequent but decreasing use of potentially inappropriate medications: 40% of seniors used at least one inappropriate drug in 1997 and only 30% in 2001. When only medications with «high risk potential» were

considered, the prevalence of users dropped from 34% to 26% in 1997 and 2001, respectively. Female gender and older age (75–84) were associated with higher potentially inappropriate medications use. Among potentially inappropriate drugs long-acting benzodiazepines (11%), nitrofurantoin (6%) and methyl dopa were the most commonly prescribed in 1997, with nearly unchanged prevalence during the period (1997–2001). The use of ergot mesyloid, indomethacin and short-acting nifedipine decreased during the period, use of doxazosin, ticlopidin and short-acting oxybutynin increased. *Conclusions:* In this first large scale population based sample of elderly patients in the Czech Republic, positive trend of declining prescription of potentially inappropriate medications has been confirmed. However, use of these medications remains still higher compared to other developed countries. This study confirms the need for drug policy and regulatory measures to improve pharmacological treatment of older patients in the Czech Republic.

529. CHARACTERISTICS OF CHRONIC BRAIN ISCHEMIA AT MEN AND WOMEN OF ELDERLY AGE

N.A. Yakovlev, Yu.V. Abramenko (State Tver Medical Academy; nikvest@tvcom.ru)

Introduction. The number of patients with chronic brain ischemia (CBI) in Russia is stably growing and makes no less than 700 per 10000 of the population (Z.A. Suslina, 2005). Interconnection of the main expressions of CBI and sex of patients, and also gender peculiarities of emotional reactions to frustrating situation are not sufficiently studied. *Goal of the research.* To find sex differences of psychoneurological disorders and reaction of a person to stress by aged patients at initiatory stages of CBI. *Patients and methods.* There were examined 57 patients with pre-dement demonstrations of CBI, developed against the background of arterial hypertension and its combination with atherosclerosis (25 men, average age 65,3 yrs, and 32 women, average age 64,6 yrs). Personal perceptions of the patients were analyzed according to the data of clinical conversation and clinical questionnaire. Intensity of neurological symptomatology was estimated by the scale NIH-NINDS, cognitive disorders — by scales of Frontal Assessment Battery (FAB), tests for attention (Shulte test), fluency of speech (lateral and categorial associations), memory («test 5 words», reproduction of 4 abstract pictures), and spatial-motor functions (clock drawing test). Personal and reactive anxiety (Spielberger test), depression level (Beck test), and reaction of a person to stress (Rosenzweig test) were studied. *Results.* Complaints on headache, dizziness, worsening of attention, memory and bad sleep prevailed with women. As for men, complaints on worsening of equilibration, asthenia, and reduction of capacity to work prevailed. There were no reliable sex differences by scales of NIH-NINDS and FAB stated. Women had higher indicators of depression, of personal and reactive anxiety. Men-patients showed high indicators of reactive anxiety. Tests on attention, logical memory and clock drawing tests were made by men with DE better than by women that surpassed men by the indicator of speech fluency. In Rosenzweig test, patients with CBI, independently of sex, showed lower, as compared with almost healthy aged persons, values of the GCR coefficient, and that showed their insufficient adaptivity to their social position and possibility of conflicts with people, surround-

ing them. There was noted predominance of extrapunitive direction of frustration reactions among women, and of intrapunitive ones — among men. In the situation of frustration, women with CBI, more often than men, showed affective phenomena of discomfort, bewilderment and insult. *Conclusion.* The received data expand information about psychological characteristics of patients with CBI of different sex and may be important for individualization of therapeutic interventions.

530. RESEARCH OF EFFECTIVENESS OF MELATONIN AT ELDERLY PATIENTS WITH TENSION HEADACHE

N.A. Yakovlev, T.A. Slyusar, S.S. Rubina (State Tver Medical Academy; nikvest@tvcom.ru)

Introduction. Tension headache (TH) is traced with 27% persons of elderly age and is combined with comorbid cognitive, affective, asthenic and agrypnia disorders that reduce life quality of the patients (Solomon G. et al., 1990; V.V. Alexeev, 1995; N.N. Yakhno, 2000). In pathogenesis of TH and comorbid disorders, change of activity of neurotransmitter and antinociceptive systems play considerable role due to age-specific degenerative changes of brain, evoked by oxidative stress, accumulation of excess of calcium, defects of mitochondria and deficit of growth factors (Rettmann B., Henderson C.E., 1998). Difficulty of TH pathogenesis at aged persons implies application of pharmaceuticals of polymodal action, influencing several pathogenetic mechanisms at a time. Such preparations include melatonin, which level in blood plasma reduces with the increase of years (V.N. Anisimov, 2003). *Goal of the research:* estimate effectiveness and safety of melatonin application (preparation melaxen of the «Unipharm, INC» firm, the USA) at aged patients with TH. *Patients and methods.* 50 aged patients with TH (22 men and 28 women), average age is 64,7 years, average period of disease is 8,4 years, are randomized into 2 groups, 25 persons in each. Patients of the first group took melaxen (3 mg 30 minutes before going to sleep during 20 days), patients of the control group — placebo, according to the similar schedule. Before and after treatment course, intensity of pain (by VAS), anxiety level (Spielberger scale), depression level (Beck questionnaire), quality of sleep (questionnaire), cognitive functions (Frontal Assessment Battery — FAB, MMSE, tests for memorizing and reproduction of 5 words and 4 pictures) were studied. In blood plasma, they defined contents of malonic dialdehyde — MDA (thiobarbituric method), general antioxidative activity — GAA (Beauchamp, 1971) and level of serumal cytokines IL-1 β and TNF- α (immunoenzyme method). *Results.* In the group of patients, treated with melaxen, TH intensity reduced from 4,8 to 3,5 points; in the control group — from 4,6 to 4,2. After the course of treatment, patients of the 1st group showed reduction of the anxiety level by 44,3%, depression — by 42,7%, evidence of sleep disorders reduced by 56,7% resulting from initial values. There were positive improvements of cognitive indicators (by FAB tests, memorizing and reproduction of 5 words), reduction of MDA content in plasma from the initial level — 48,6 mc-mole/l and growth of GAA (initial indicator is 0,78 relative units). In the control group, there were marked no considerable improvements of clinical and laboratory indicators. *Conclusion.* Melaxen in the dose of 3 mg/day at course application during 20 days shows mild analgetic, anxiolytic, antidepressive, nootropic, antioxidative and immu-

nomodulatory effects, and that proves expediency of the use of this medicine for aged patients with TH.

531. THE PREVALENCE OF DEPRESSIVE SYMPTOMS AND THEIR VARIABLES AMONG FRAIL AGING MEN IN NEW YORK CITY'S PERSONAL CARE SERVICES

M. Yasuda¹, S. Horie¹, A.M. Steven², B. Simone³
(¹Teikyo University; ²University of Pittsburgh; ³New York City Human Resources Administration; myasuda@med.teikyo-u.ac.jp)

Background. New York City's Personal Care Service Program provides service-rich assistance to the frail elderly who would not be able to live at home without such support. However, gender-specific health care delivery has not been introduced. Depressive symptoms are common among elderly people. We conducted a cross-sectional study in order to investigate the prevalence of depressive symptoms and to determine variables among frail elderly men receiving personal care services. **Methods.** Data were collected from administrative data available in the Human Resources Administration's computer system. Two hundred men aged 65 or older were randomly selected. We defined depressive symptoms by tracking the recording of depressed mood in the data system. We examined statistical differences in a variety of indicators between elderly men with- and without depressive symptoms. Multiple logistic regression analysis was performed to determine independent variables of depressive symptoms. **Results.** 10.5% of all cases had depressive symptoms. In multiple logistic regression models, the duration of services and hearing impairment were independently associated with depressive symptoms among frail elderly men. **Conclusion.** The results of this study indicate the low prevalence of depressive symptoms among frail elderly men compared with previous studies. The duration of services was a protective factor of depressive symptoms. That is, personal care services provided a high quality of ADL support that keeps frail elderly men living at home as long as possible. The significance of hearing impairment that can induce social isolation also needs to be stressed as an indicator of depressive symptoms, even though there was no discrete measurement of social isolation included in the data.

532. LOW TESTOSTERONE LEVEL OF MIDDLE-AGED JAPANESE MEN; POSSIBLE ETIOLOGY OF LATE-ONSET HYPOGONADISM

M. Yasuda, K. Furuya, T. Yoshii, H. Ide, S. Horie (Teikyo University; myasuda@med.teikyo-u.ac.jp)

Objectives. Age-related steep declines in free testosterone, which cause late-onset hypogonadism (LOH), are frequently reported. Physical, psychological and metabolic stressors increase serum cortisol levels directly inhibiting the production of testosterone on Leydig cells. LOH onsets mostly in middle-aged men, many of whom complain of psychological symptoms including depressive mood and anxiety. Japan is now facing rapidly increasing suicide in middle-aged men mostly due to depression that may be associated with LOH. Salivary testosterone is a useful non-invasive and repeatable method of assessing levels of free testosterone because testosterone is not bound with protein in saliva. The current study investigated circadian variations of free salivary testosterone levels in three cohorts: 20's-30's, 40's-50's, 60's+. **Methods.** Sixty-four healthy subjects in these cohorts were recruited from white- col-

lar salaried men. Also included were 17 patients in their 60's-70's hospitalized for prostate biopsy who were found to have no cancer. They were asked about their weight, height, and smoking habit. The SF-36 v2 was used to measure their quality of life. Saliva samples were collected at two-hour intervals between 9:00 am and 9:00 pm. Free salivary testosterone levels were determined by Enzyme-Linked Immunosorbent Assay (Demeditec Diagnostics, Germany). **Results.** There were no significant differences in BMI, smoking habit, and the quality of life based on SF-36 among three groups. Post hoc analysis showed that there were significantly lower testosterone levels in the 40's-50's cohort than in the 20's-30's cohort at all time test-points except for 7:00 pm. At only two time test-points were testosterone levels lower in the 60's+ cohort than in the 20's-30's cohort. There were no significant differences in mean testosterone levels at any time test-points between the two older cohorts (40's-50's and 60's+). Repeated measurements of ANOVA showed significant main effects of time in the 20's-30's cohort, and in the 40's-50's cohort, confirming the circadian pattern. There was no main effect of time in the 60's+ cohort, confirming the lack of the circadian pattern. **Conclusion.** Middle-aged Japanese salaried men had the lowest testosterone levels. Aside from aging, environmental stressors such as overwork could have a significant impact on the steep decline of free testosterone levels in later life, affecting physical and mental health. The decline of testosterone levels in aging men is a complex issue warranting holistic study, including the social and environmental factors that cause stress in Japanese middle-aged men.

533. EVALUATION OF THE PROGNOSIS NON-SPECIFIC BRONCHO-PULMONARY DISEASES DEVELOPMENT IN THE AGED PERSONS

M.K. Yatsenko, O.S. Polunina, G.Ye. Pantzulaya (State Medical Academy, Astrakhan, Russia; astnalog@mail.ru)

380 aged persons with extra-hospital pneumonia (EP) and chronic purulent-obstructive bronchitis (CPOB) were examined. Immunologic indices (T- and B-lymphocytes, T-helpers and T-suppressors, Ig G,A,M, CIC and others), presence of blood proteins-reactants (lactoferrin, ferritin, ceruloplasmin, R-proteins, CRP) in comparison with the data of the study of lipid peroxide (LPO) of the blood (malon dialdehyde-MDA, antioxide activity etc.) have been studied. Examination of the patients from the comparative group (95 persons) showed that the pathologic processes in the lungs in the aged persons were developing on the background of the primary presence of the balanced T-immunodeficiency and decreased antioxidant activity. The results of the study showed that in the aged persons with broncho-pulmonary pathology there appears dependence among the levels of the acute-phase serum proteins, immunity indices and LPO. It was found that under CPOB on the background of immunological insufficiency of the 2nd degree valid ($p < 0,01$) depression of T-suppressors on the background of raising the levels of MDA in comparison with the data of the examination of the patients with chronic obstructive bronchitis appeared. Insufficiency of T-suppressors and increasing of metabolism wastes, in particular MDA make it possible to develop repeated exacerbations, often along with the development of the purulent complications. Favourable outcome EP under admission of the patients the clinic is prognosed with the possibility of

77,8% under hyperferritinemia (282,8–432,8 ng/ml), hyperlactoferrinemia (2179,7–2378,9 ng/ml), increasing the absolute quantity of T-lymphocytes (by the 20% against the control group), the levels of R-proteins (37,3–87,3 titres) and CIC (9,0–25,9 c.u.). Thus, the indices of immunity and the state of the LPO processes of blood, contents of the proteins-reactants in blood give the possibility evaluate the prognosis of the disease development in the aged persons, which is very important for the timely administration of the adequate therapy under EP and CPOB.

534. IMPROVEMENT OF QUALITY OF HOME CARE BY APPLICATION OF RAI-HC TO COMMUNITY-DWELLING ELDERLY IN KOREA

J.L. Yoon¹, K.J. June² (¹HanGang Sacred Heart Hospital, Hallym University, Seoul, ²College of Medicine, Soonchunhyang University, Chunan city, South Korea; lull@hallym.ac.kr)

Background: Visiting home care for frail elderly is important to prevent hospital admission and entrance to nursing home and to maintain and improve functional status of community-dwelling older persons. Optimal home care for the frail elderly depends on comprehensive assessment. This is especially true in the setting of interdisciplinary home care programs. To improve quality of home care by facilitating comprehensive assessment, using standardized and multi-dimensional, validated assessment tool is helpful. **Objectives:** The purpose of this study was to evaluate the efficacy of comprehensive assessment by using Resident Assessment Instrument for Home Care (RAI-HC) for improvement of quality of home care for the elderly. **Methods:** This was a prospective study. We have enrolled 120 elderly patients in home care services of one city in Korea. They were divided 2 groups and the intervention group (60 patients) was cared with systemic approaches from recommended protocols of the RAI-HC assessment, and control group (60 patients) was cared by ordinary home care programs by well-trained nurses. After 3-month intervention, we compared 2 groups with problem lists the elderly patients have before and after home care services. **Results:** After 3-month care, older persons in the intervention group showed significant reduction in number of problem lists and depressive symptoms compared to control group. Especially, the number of patients with visual problems, depression and anxiety, social deprivation, cardiopulmonary disorders, oral health problems, need for formal services, urinary incontinence and indwelling catheter was reduced significantly compared to the patients in control group. **Conclusions:** The comprehensive assessment is essential for better home care services, and RAI-HC is useful instrument for detecting problems of community-dwelling frail elderly and is helpful for planning better home care program. The finding of this study provided that improvement of quality of home care services for frail elderly can be achieved by implementation of RAI-HC instrument.

535. URINARY INCONTINENCE IN ELDERLY PATIENTS WITH SENILE DEMENTIA OF ALZHEIMER TYPE IN JAPAN

H. Yoshioka¹, N. Hayashi¹, Y. Izumi¹, M. Yokode², T. Kita², T. Kumada¹ (¹Kyoto Postal Services Agency Hospital, ²Kyoto University Hospital, Kyoto, Japan; hygmph2@mbx.kyoto-inet.or.jp)

The purpose of this study was to evaluate the prevalence of urinary incontinence in elderly patients with senile dementia of Alzheimer type (SDAT) in Japan. 124 SDAT patients (80.6±5.8 years of age, 78 women and 46 men)

with urinary incontinence were investigated to evaluate the correlations among prevalence, grade and risk factors of urinary incontinence. Of these patients, 72% had urinary incontinence, and the half of these patients showed high grade incontinence. Incontinence predominantly worsened along with SDAT and behavior disturbance, but was not closely correlated with combined diseases, drug therapy, or urinary infection. These patients exhibited accelerated reflexes of urinary muscles (overactive bladder: OAB), and SDAT was closely correlated with urinary incontinence. In conclusion, SDAT and behavior disturbance were independent risk factors of urinary incontinence in the elderly patients, and accelerated reflexes of urinary muscles (OAB) were considered to be the cause of the urinary incontinence.

536. TRANSCULTURAL STUDY OF NEUROPSYCHOLOGICAL FUNCTIONS IN AN AMERICAN, HISPANIC AND SPANISH POPULATION

R. Yubero¹, D. Salmon², F. Maestu³, P. Gil¹, A. Viloria¹, J.M. Ribera¹ (¹Hospital Clinico San Carlos, Madrid, Spain; ²Alzheimer's Disease Research Center, University of California San Diego, US; ³Universidad Complutense Madrid, Spain; raquel_yubero@hotmail.com)

Aims: To examine the effects of language and culture on the neuropsychological test performance of 4 different groups of cognitively-normal older adults. **Method:** A retrospective and transcultural study that included 108 cognitively-normal older adults divided into 4 groups: 33 Americans (white, non-Hispanic) assessed in English (E), 32 American-Hispanics assessed in English (H-E), 16 American-Hispanics assessed in Spanish (H-S), and 27 Spanish assessed in Spanish (S). American and American-Hispanic populations were from San Diego, California (United States). The Spanish population was from Madrid (Spain). A neuropsychological test battery was administered to each subject by a primary English or Spanish speaker. The test battery included: the Mini-Mental State Examination (Folstein), Logical Memory Test, Digit Span Test, Boston Naming Test, and Verbal Fluency Tests (phonetic and semantic). Statistical analyses were done with SPSS 14.0. **Results:** The mean age of the study sample was 67,7±8,9 and 63% of them were women (N=68). The mean years of education for the sample was 12,2±0,96. There were no significant differences between the 4 groups on the MMSE, Logical Memory or Verbal Fluency Tests. Despite these similarities, the 4 groups all differed significantly on the Boston Naming Test: E > H-E > H-S > S (all p's < .01). In addition, English speakers performed significantly better than Spanish speakers on the Digit Span Test regardless of culture. For forward span: E > S (p=.001), E > H-S (p=.024), and H-E > S (p=.001); but H-S and S did not differ significantly. For backward span: E > S (p=.001) and E > H-E (p=.003), but H-S and S did not differ significantly. **Conclusions:** The results of this study suggest that the Boston Naming Test performance of cognitively-normal older adults is sensitive to the effects of both language and culture in favour of Americans and English speakers. This may be because the items included on the test were selected and ordered specifically for the English speaking American population. Transcultural versions of the test should be both linguistically and culturally adapted. In contrast, Digit Span Test performance was sensitive to the effects of language, but not culture. This suggests

that performance was influenced by a specific difference in the English and Spanish languages. One possible difference is that the words for numbers have more syllables in Spanish than in English (e.g., four vs. cuatro) requiring more information to be rehearsed in the phonological loop of the working memory system during the Digit Span task. These differences were not related to general cognitive ability since the groups did not differ on mental status (i.e., MMSE), memory, or verbal fluency tests.

537. RELATIONSHIP BETWEEN DEMENTIA AND BALANCE ON GERIATRICS

H. Yucel, M. Uyanik (*Hacettepe University; hulya.yucel@gmail.com*)

Aim: To investigate the relationship between dementia and balance on elderly people. *Material and methods:* The subjects were 93 older people (mean age=73.1 yrs, SD=5.00, range=65-87) who stay in Internal Medicine Services at Hacettepe University Hospital. The age, sex and diagnosis of illness were recorded. Balance was assessed according to Tinetti TeSt. Functional Staging Scale for Dementia Symptoms was used to assess dementia. The SPSS 13.00 was used for statistical analysis. The correlation coefficient was used to investigate the relationship between dementia and balance problems. *Results:* 43 (47%) persons of elderly were male and 50 (53%) were female. Mean of Tinetti Test 10,51±3,74 and mean of dementia test was 1,67±2,76. There was a meaningful relation between Tinetti test and dementia scale (<.05). *Conclusion:* Similar studies are less in literature. Balance problems in dementia is a very important topic in elderly that has to be studied carefully.

538. ESTIMATION OF CLINICO-FUNCTIONAL ALTERATIONS IN MEDICO-SOCIAL SCREENING OF OLDER PATIENTS WITH ARTICULAR PATHOLOGIES

I.I. Zabolotnykh, R.K. Kantemirova (*G.A. Albrecht St. Petersburg Research Center for Medico-Social Screening, Prosthetics and Rehabilitation of the Disabled, Russia; terapium@yandex.ru*)

Age-related atrophy of the muscles and strained ligamentous apparatus cause difficulties in the diagnostics of osteoarthritis deformans (OD) and rheumatoid arthritis (RA). Being present in case of OD, the articular function is drastically limited in case of RA, hence limited capacities of a patient. Differential diagnostics in patients with OD and RA require articular roentgenography with direct magnification of an X-ray image using REIS and Electronica 100D appliances. OD may be recognized by characteristic narrowing of articular fissure, subchondrial sclerosis, enostosis, cystic transformation of subchondrial segments, as well as by sharpened articular endings or osteophytes on the periphery of epiphyses. RA is characterized by noticeable resorption of the osseous tissue with marginal erosions, which are located subperiosteally near the edge of the cartilage in the articular zone, and on stage IV of the disease — by the disappearance of articular fissure and by its being filled with newly formed osseous tissue. Thermal imaging in case of RA allows to register a distinctly pronounced intense diffuse irradiation near the joint, literally repeating the contours of outgrowing inflammatory synovial coat. In case of OD exacerbated by synovitis only separate hyperthermia foci are visible

against the background of reduced thermal irradiation of the joint. Articular functions disorder is the main criterion in the identification of vital activity limitation level. Stage 1 of articular functions incompetence is diagnosed in case of articular mobility being preserved not less than by 50% of the initial amplitude of elbow, knee, radiocarpal and talocrural articulations. Stage 2 is diagnosed when motion amplitude in humeral and hip joints does not exceed 50 degrees, and in elbow, knee, radiocarpal and talocrural articulations it is reduced to 20–45 degrees, ulnary deviation of hands and feet is present with fingers and toes being drastically deviated to the outside and the functions of grabbing and holding articles and supportive functions of the feet are disordered. Stage 3 characterizes the complete loss of patients' mobility and self-service capacity due to pains, deformations and subluxations of many joints.

539. GERIATRY SPECIALISTS TRAINING IN SAMARA STATE MEDICAL UNIVERSITY

N.O. Zakharova, G.P. Kotelnikov (*Samara State Medical University, Russia; geriatr_samara@mail.ru*)

Could we safely say that doctors' degree of awareness of age peculiarities and a different course of illnesses of elderly people is in proportion to the growing statistics of how often they need the services of a doctor? Are gerontological problems explained sufficiently to the students in the course of pre-graduation training? Are geriatric problems discussed in the course of post-graduation training of specialists? The number of people over 60 years of age is over 18 percent in Samara oblaSt. The number of people in the senior age groups (over 85 years of age) is rapidly growing. The social care system crisis can be prevented if we can satisfy the needs of elderly people in specific medical care. Therefore, the training standards of geriatric specialists and social care workers having either higher or professional education become higher. Geriatrics in Russia was recognized as a specific medical field in 1995. A geriatrics faculty was established in Samara State Medical University in 1997. In 2007 it will celebrate its tenth anniversary. We have every reason to conclude that every graduate student needs to be given knowledge of geriatric medicine, both theoretical and practical. The main goal of the geriatrics faculty is to supply each student with geriatrics basics that they will need in their practical activity. The students are trained in the War Veterans Hospital which is a universal medical institution equipped with the newest diagnostic and therapeutic equipment. The training program includes such aspects as the basics of aging processes, demographic aspects of the aging society, social aspects of aging, vital geriatrics sections and elderly people rehabilitation. Biological age determining and current scientific achievements in intensive aging prevention is given special attention in the course of training. The students study the use of substances and physical and ecological factors which are called geroprotectors that can slow down the processes of body age involution. The phenomenon of longevity is of great interest to the students. In the course of training the students take part in curing the in-patients in hospital and out-patients, in clinical rounds with professors and assistant professors, in difficult cases discussions. The students take an active part in scientific and research activity of the faculty, make reports at students' scientific conferences. Developing humane attitude to elderly people

is the key point of the faculty policy. Students' attitude to elderly changes as well as negative stereotypes of regarding them as a burden on the society vanish. Post-graduation doctors' training includes 560 academic hours of initial specialization in geriatrics and 144 full-time hours of subject refresher course.

540. CENTENARIAN PATIENTS IN GERIATRIC HOME CARE UNIT

C. Zaragoza, C. Pablos, A. Besga, P. Gil, J. Ribera (Dept. Geriatrics; aribesga@yahoo.es)

Objective: To establish the characteristic of centenarian patients. **Methods:** Descriptive study of centenarian patients evaluated in a geriatric home care unit, during the period 1992-2007. Demographic variables were measured (age, gender), Comprehensive geriatrics assesment: medical, funtional and psychosocial (Katz, CRF, CRP). **Results:** 46 centenarian patients were evaluated. 78,2% females. Mean reasons for consultation: cardiovascular diseases (47,7%), urinary infection 74,4%, UPP 38%, behavioral symptoms 20%, respiratory infections 62,2%, impaired renal function 53,5%, osteoaticular pathology 68,2%. pluripathology: 34,8% have 2 disease, 23,9% three, 13% four, 2,2% five. The most prevalent geriatric's syndroms: Inmovility 84,8%, Dementia 56%, sensorial ismpaired: hearing 41,9% and vision 67,4%, skin scores 38%, constipation 13%, history of falls 6,5%. The most prevalent functional status: 3-4/5 (35,6% respectivamente). 71,7% were widow, 82,6% lived with the family, 32,6 had caregiver. **Conclusions:** The centenarian patients had moderate functional and psychosocial status, with a high prevalence of pluripathology.

541. ANTIAXIDANTS IN COMPLEX THERAPY OF OLD PARTIENTS WITH POSTINFARCTIONAL CARDIOSCLEROSIS AND CARDIAC FAILURE

R.M. Zaslavskaya, G.K. Lilitsa, M.M. Tejblum (Hospital N 60, Moscow, Russia; misha@tejblum.pp.ru)

Aim: to evaluate the antioxidative action of a new drug — eltacin (El), its combination with preductal MB (PMB), neurohormone of epiphysis-melatonin (Mel), emoxipine (Em), drugs of selen and plasma separation (PS), to study their influence on morphofunctional parameters and oxidative stress in old pts with postinfarctional cardiosclerosis (PICS) and heart failure (HF). **Material and methods:** 260 pts with IHD, PICS and HFII-III f.c. (mean age 70 years old) were investigated. There were formed 10 randomized groups depending on metabolic drug or PS on the background traditional therapy (TT). There were used clinical, laboratory methods investigations, Doppler-EchoCG, ECG-monitoring by Holter with determination of cardiac rhythm variability parameters (CRV), investigation of parameters in oxidative stress and antioxidative defence in red cells. **Results:** data received testify to advantage including in traditional therapy (TT) the drugs of metabolic action with antioxidative effect and PS in comparison with only TT. Stable clinic effect appeared on 3,5 days when Em was included in TT, by 3,8 days — with El sublingually and then only by TT. Increasing tolerance to physical load was maximum in therapy with El (by 60%) and minimum — in TT (by 30%). Impovement of systolic and diastolic functions of left ventricle (LV) was noted by using El, Em, Mel in a dose of 6 mg, PS, PMB. Impovement of prognosis by data of cardiac rhythm vari-

ability was established under the influence of PS and combination of El with PMB. Normalization in system of oxidants/antioxidants was displayed, when there was used El, Em, El with PMB, PS. **Conclusion:** data received allowed to create algorith of using metabolic drugs with taking into account their antioxidative activity and influence on morphofunctional parameters in complex therapy of old pts with PICS and HF.

542. INTERRELATION OF COGNITIVE FUNCTIONS AND AVERAGE BLOOD PRESSURE IN PEOPLE ABOVE 70 YEARS OF AGE

A.M. Zhirkov¹, A. Golikov², A. Subbota³, V. Kostenko⁴ (¹St. Petersburg State University; ²Moscow Sklifosovsky Research Institute for Emergency Medical Care; ³Military Medical Academy, St. Petersburg; ⁴Dzhanelidze State Research Institute for Emergency Medical Care, St. Petersburg, Russia; ana-zhirkov@yandex.ru)

Cognitive dysfunction is an important problem for the people above 70 years of age. Its intensity significantly depends on arterial hypertension. However there is no agreement of opinion concerning the role of some BP types increase in cognitive dysfunction progress. The purpose of our investigation is to study the relation of the average BP (aBP) and cognitive dysfunction. 123 inpatients above 70 years of age (average age 73±3) were examined. The patients, experienced large-focal myocardial infarction and stroke were excluded from the study. In addition to standard laboratory and instrumental measurements, the cognitive functions were assessed using Luria test and BP was measured by Korotkov's method. aBP was estimated by computational method using both standard formula and ZhGS and Chemla formulae. The obtained data revealed the moderate total cholesterol increase due to high-polymeric fractions and insignificant glucose increase above norm in the examined patients. There were no signs of marked myocardial ischemia and severe rhythm disturbances. The Luria test value was 5,9±0,3, which is normal for this age group. The statistically reliable relation of cognitive functions and aBP (p<0,5) is established. As for the formulae, used for aBP measurement, the most close association is determined with the values, calculated using ZhGS (r=0,58) and Chemla (0,51) formulae, the lesser with the ones, calculated using the standard formula (0,43). The formulae used for aBP calculation are basing on statistical and physiological principals. From the physiological point the correlation extent may be explained by relation of cognitive dysfunction with bio energetic maintenance of blood moving through the vessels.

543. PRESSURE SORES IN AN ITALIAN ELDERLY POPULATION

P. Ziccardi¹, F. Cacciatore¹, F. Mazzella¹, L. Viati¹, N. Ferrara¹, P. Abete², F. Rengo² (¹Salvatore Maugeri Foundation, Institute of Care and Scientific Research, Telesse (BN); ²University of Naples «Federico II»; pziccardi@fsm.it)

Pressure sores (PS) remain a complex and costly problem to the health care system that negatively influence the quality of life of affected subjects. Elderly are at high risk of developing PS when several conditions that could cause long-term bedridden occur. Aim of the study is to assess the prevalence of PS (3-4 degree) in a random sample of elderly population and verify the role exerted by demographic and clinical variables on PS. Moreover we assessed measure of quality of life such as subjectivity health

status and depressive symptoms and the effect on long term mortality (12 yrs). The analysis was conducted on 1288 elderly subjects randomly selected from electoral rolls in Campania in Italy, aged 65–95 yrs (mean 74.2±6.4 yrs), visited by trained physicians in 1992. Age, sex, comorbidity assessed by means of Charlson index, severe cognitive impairment (Mini-Mental State Examination <12), malnutrition, urinary and fecal incontinence, long bedridden >6 months and heart failure were considered as covariates. PS were found in 1.4% of the entire population, prevalence increase with age, 1.0%, 1.7% and 3.1% respectively in subjects aged 65–74, 75–84 and 85 and over ($p<0.05$). In the table are presented data in relation to the presence or absence of PS.

Variables	Pressure sore		All	P value
	Present	Absent		
MMSE <12	20.0	8.8	9.0	0.145
Hip fracture	5.6	1.8	1.9	0.291
BMI < 20	28.6	7.7	8.0	0.020
Urinary incontinence	22.2	5.5	5.7	0.017
Fecal Incontinence	11.1	2.5	2.6	0.079
Bedridden	27.8	10.6	10.9	0.038
Heart Failure	41.2	9.1	9.5	0.001
Charlson index	2.5±2.1	1.6±1.6	1.65±1.68	0.030
Death	66.7	52.7	52.9	0.017

Subjects with PS have a higher GDS score (15,2±6,2 vs 11,4±6,6, $p=0,017$) and a worse subjectivity health status score (1.61±0,17 vs 0,87±1,3; $p=0,015$). Logistic regression analysis conducted in order to evaluate the predictive role on the presence of PS demonstrate that only heart failure exerts an independent effect (OR 6,01–95%CI 1,31–23,12; $p=0,021$). Mortality rate after 12 years of follow up is 66,7% in subjects with PS in respect to 52,7% of the overall population. The study demonstrate on a random sample of elderly population that, independently by the well known risk factors, also heart failure is associate to the presence of PS suggesting that an accurate clinical cardiovascular assessment should be considered in order to better define the high risk patients for PS.

544. A SPECIAL CARE UNIT FOR PATIENTS WITH CHALLENGING BEHAVIOUR IN A GERIATRIC ACUTE CARE HOSPITAL IN GERMANY

T. Zieschang, E. Mueller, I. Dutzi, U. Hestermann, D. Hueger, A. Braun, N. Specht-Leible, P. Oster
(Bethanien Hospital, University of Heidelberg, Germany; tzeschang@bethanien-heidelberg.de)

Background: In Germany Acute Care hospitals generally are not prepared for the care of patients with challenging behaviour due to dementia and / or delirium. Since structures are not established, models of geriatric care are important to gather experiences and to ameliorate the situation of this constantly growing group of patients. Persons with dementia pertain to a group with high risk of a deleterious outcome of a hospital stay, such as developing delirium. Challenging behaviour such as wandering, calling, aggression towards members of the professional team or other patients as well as sexually disruptive behaviour often overcharge and stress professional carers and lead to use of

restraints and psychotropic drugs. Other patients might be critically disturbed by roommates with dementia. Patients are often transferred back and forth between acute care somatic hospitals and gerontopsychiatry. **Methods:** We conducted a questionnaire based survey among the staff of our hospital concerning the management of persons with dementia and challenging behaviour. A six-bed Special Care Unit was created, which is closed by a numeric code lock. Special activities are offered especially during the sun-downing time. We conducted a training program for the nurses and therapists on the ward. This was developed following the Practice Guide for Registered Nurses «People with Dementia in Acute Hospitals» by Carol Archibald, which we translated into German in collaboration with the Kuratorium Deutsche Altershilfe. A psychologist led group for proxies was established. **Patients:** 240 Patients have been treated on the ward between 01/05 and 08/06. 172 (72%) are female, average age is 82 years. 184 (79%) were living at home, 49 (21%) lived in a nursing home. 99 (42%) can be discharged back home, 43 (18%) back to their nursing home, 31 (13%) obtain a new placement in a nursing home. Mean length of hospital stay is 16.3 days. **Results:** The Special care Unit has been well accepted and provides relief for the other wards. The number of patients being searched for has decreased. Treatment in the Special care Unit has also shown to diminish challenging behaviour in our patients, probably due to a more relaxed atmosphere on the ward and less constraints concerning ambulation, as well as structuring activities during day-time. Knowledge about dementia has been shown to be well established in our nursing staff, whereas transfer of this knowledge into every day work still has to be trained.

545. PHYSICAL ACTIVITY COULD PREVENT METABOLIC SYNDROME (MS) ONSET IN OLDER ADULTS: THE PIANORO STUDY

M. Zoli, G. Bianchi, V. Rossi, R. Giuzio, D. Magalotti, A. Muscari (University of Bologna, Bologna, Italy; marco.zoli@unibo.it)

Metabolic Syndrome (MS), defined as abdominal obesity, elevated triglycerides levels, low high-density lipoprotein cholesterol levels, high blood pressure, and high fasting blood glucose, is an ongoing disease that affects an increasing number of people of the well-developed western countries. In elderly people it produces a higher prevalence and severity of cardiovascular events. MS has insulin resistance as its central pathophysiological feature. In patients with a primitive physical disability, the reduced physical activity levels are associated with a higher rate and severity of the MS with its complications. Similarly to subjects with physical disability also older subjects show reduced physical activity and mobility due to limitations of muscular-skeletal system. This reduced performance could be associated to and could enhance the onset of the MS. In the elderly population (1144 subjects of both sexes, aged over 65 years) resident in Pianoro (a municipality in the Bologna district — Northern Italy), enrolled in a prospective study based on the availability and relevance of promoting the physical exercise to prevent the MS and its cardiovascular events, we evaluated, by means of a specific questionnaire on physical activity (Physical Activity Scale for the Elderly-PASE) with its separate sections for household activities and leisure time, the relationships between physical activity and insulin resistance or

the clinico-laboratory parameters of MS. Physical activity, measured by PASE score, was inversely related with insulin resistance (PASE-leisure time score vs Homeostasis Model Assessment (HOMA) Spearman's $Rho = -0.104$, $P = 0.001$; PASE-household activities vs. HOMA: $R_s = -0.063$, $P = 0.036$) and with some parameters of the MS (PASE-leisure time score vs waist circumference: $R_s = -0.111$; $P < 0.001$) without any relation to age, educational level and cognitive impairment. At backward stepwise logistic regression analysis, physical activity was significantly associated to absence/presence of MS, independently from other traditional variables: PASE-leisure time score, $P < 0.001$, Odds Ratio 0.976 (95% Confidence Interval: 0.964–0.988); PASE-household activities, $P = 0.001$, O.R. 0.986 (95% C.I.: 0.979–0.994). Logistic regression ruled out or, at least, deeply reduced the relevance of central distribution of fat as a relevant predictive factor of the MS (waist circumference, $P = 0.894$). Logistic regression produced similar results even when obese subjects had been excluded. Physical activity is an independent predicting variable of MS. An increased physical activity can then be suggested to prevent MS or to reduce its cardiovascular complications.

546. A COMPARISON OF 4 INFLAMMATORY MARKERS AS DETERMINANTS OF INSULIN RESISTANCE IN THE ELDERLY

M. Zoli, A. Muscari, S. Antonelli, A. Ligabue, D. Magalotti, C. Giannoni, G. Bianchi (University of Bologna, Bologna, Italy; marco.zoli@unibo.it)

Objective. Several markers of inflammation are associated with both cardiovascular risk and insulin resistance. However, whether any of these markers plays a pre-eminent role is unknown. This study was performed to ascertain the relative relevance of some inflammatory markers in insulin resistance. **Methods.** Four inflammatory markers (leukocyte count, erythrocyte sedimentation rate (ESR), high sensitivity C-reactive protein (CRP) and C3 complement) were assessed as possible determinants of insulin resistance, as defined by the homeostasis model assessment (HOMA) index, together with the 5 elements of the metabolic syndrome (NCEP-ATPIII definition), total cholesterol, physical activity and 4 indicators of adiposity (body mass index, waist circumference, % body fat and hepatic steatosis) in an unselected population of 994 subjects aged 65-91 years (the Pianoro Study). **Results.** In univariable analysis C3, $\log(\text{CRP})$ and $\log(\text{leukocyte count})$, but not $\log(\text{ESR})$, were significantly correlated with $\log(\text{HOMA index})$. However, in multivariable analysis (multiple linear regression) C3 was the only inflammatory marker that remained associated with insulin resistance ($R^2 = 0.045$) independently of the other 3 markers, the components of the metabolic syndrome and the 4 indicators of adiposity. The other most significant ($P < 0.0001$) determinants of $\log(\text{HOMA index})$ were $\log(\text{triglycerides})$ ($R^2 = 0.027$), total cholesterol (inverse association, $R^2 = 0.027$), hepatic steatosis ($R^2 = 0.022$) and waist circumference ($R^2 = 0.021$) ($R^2 = 0.436$ for the whole model). In a multiple logistic regression model which included the 4 inflammatory markers plus age and sex as independent variables, the relative risks of having the metabolic syndrome for the subjects with inflammatory markers in the high tertile, with respect to those with lower values, were (odds ratio, 95% confidence interval, P value): 2.33, 1.70-3.20, $P < 0.0001$ for C3; 1.87, 1.38-2.55, $P = 0.0001$ for leukocyte count; 1.26,

0.91-1.75, $P = 0.17$ for CRP; and 1.18, 0.89-1.64, $P = 0.33$ for ESR. **Conclusions.** Of the 4 inflammatory markers comparatively assessed in our elderly population, only C3 remained strongly associated with insulin resistance, independently of the components of the metabolic syndrome and the main indices of abdominal and general obesity.

547. RISK FACTORS FOR SENILE OSTEOPOROSIS AND FRACTURES IN ELDERLY

E.G. Zotkin^{1, 2}, E.N. Kosulnikova² (¹Medical Academy of Postgraduate Studies, ²Municipal rheumatologic hospital #25 (Municipal Osteoporosis Center), St.Petersburg, Russia; ezotkin@mail.ru)

Objective: It is well known that fractures associated with osteoporosis in elderly people are among major medico-social problems due to mobility loss and high mortality of the patients. This study assessed the main risk factors for osteoporosis and fractures among elderly people, living in households. **Materials and Methods:** This retrospective study enrolled 146 women (73.9±4.3 years old), who were living at home with their relatives. As per the World Health Organization definition of osteoporosis (T-score ≤ -2.5 SD), all of the subjects met the diagnostic criteria with T-score = -3.51±0.65 SD (D.I. [-3.64; -3.38]). The comparable group consisted of 52 women (74.0±3.9 years old), in whom T-score was -1.74±0.65 SD (D.I. [-1.91; -1.56]) and Z-score was equal or more than 0. The information about risk factors of osteoporosis and fractures was collected by caregivers/nurses and physicians during visits. All non-vertebral fractures, which occurred in patients after 45, have been included in the analysis. **Results:** Among significant associations was the link between parameter of bone mineral density (BMD) in lumbar spine (T-score) and several risk factors of osteoporosis. There was significant association of BMD with intake of milk or milk products during childhood measured in milk portion (OR=85.04 [26.87; 269.18]; $r = 0.79$, $P < 0.001$). We also analyzed the same association with intake of the number of milk portions at the older than 65 age (OR=7.62 [3.56; 16.31]; $r = 0.46$, $P < 0.01$). T-score was also associated with weekly physical activity (OR=28.70 [11.46; 71.87]; $r = 0.69$, $P < 0.01$) and duration of daily walking (OR=53.71 [18.19; 158.61]; $r = 0.73$, $P < 0.01$). There were no associations with such well-known risk factors of postmenopausal osteoporosis as body mass index, duration of menopause, smoking, family history of fractures. We also defined that the main reason for non-vertebral fractures was falls. In study group of patients with established osteoporosis the falls have led to non-vertebral fracture in 9% of cases whereas in control group only in 2.3%. The essential predictor of fracture was Tinetti test lower than 18 points ($r = 0.67$, $P < 0.01$). **Conclusions:** This study demonstrates that strategy for prevention of non-vertebral fractures in elderly women should be based on correcting the modifying risk factors of osteoporosis (diet, daily physical activity) and reducing the risk of falls.

548. ANALYSIS OF COMORBIDITY IN A SAMPLE OF PATIENTS WITH DEMENTIA ADMITTED TO HOSPITAL

G. Zuliani¹, G. Guerra¹, M. Gallerani², M. Cavaliere¹, M. Galvani¹, B. Boari², F. Guerzoni³, R. Fellin¹ (¹University of Ferrara; ²S. Anna Hospital, Ferrara; ³Statistical Service, S. Anna Hospital, Ferrara, Italy; gianlu.fe@libero.it)

Aim of the study: Dementia is a severe, common disease associated with important social and economi-

cal costs. It has been showed that about 60% of sanitary costs for patients with this disease is related to hospital admissions. In the present study we have analysed, from a qualitative and quantitative point of view, the diseases associated with diagnosis of dementia in a large sample of patients admitted to our hospital. *Materials and methods:* We have considered all data collected from discharge records of patients with age ≥ 60 yrs, admitted in the period January 1998–December 2004. During this period there were 51.838 admissions (54.2% females), and in 4466 (64% females) the diagnosis of dementia was reported. *Results:* The cases with dementia were characterized by: higher mean age (82 vs 75 yrs, $p < 0.001$), higher number of admissions (median: 2.5 vs 2.1, $p < 0.001$), greater comorbidity (mean number of diseases: 4.71 vs 4.03, $p < 0.001$) and greater mortality (10.5% vs 7.8%, $p < 0.001$). The most frequent diseases reported in discharge records, in subjects with vs subjects without the diagnosis of dementia, were the following: atherosclerosis (32.9% vs 27.3%, $p = 0.000$), hypertension (27.3% vs 34.2%, $p < 0.001$), chronic ischemic heart disease (11.5% vs 10.1%, $p = 0.31$),

urinary tract disease (13.8% vs 4.9%, $p < 0.001$), diabetes (13.1% vs 14%, $p = 0.08$), congestive heart failure (12.2% vs 12.7%, $p = 0.29$), ischaemic stroke (11.5% vs 10.1%, $p = 0.003$), traumas and/or fractures (11.4% vs 8.1%, $p < 0.001$), pneumonia (11.1% vs 6.8%, $p < 0.001$), chronic obstructive pulmonary disease (9.9% vs 8.6%, $p = 0.005$), cancer (8.9% vs 18%, $p < 0.001$), anemia (8.8% vs 8.2%, $p = 0.21$), renal diseases (8.5% vs 8.2%, $p = 0.51$), hypertensive cardiomyopathy (8.1% vs 10%, $p < 0.001$), entesopathies (8% vs 1.6%, $p < 0.001$), infectious diseases (8% vs 7.3%, $p = 0.08$), delirium (7.5% vs 1%, $p < 0.001$), hydro-electrolytic alterations (7.3% vs 1.4%, $p < 0.001$), cutaneous diseases (7% vs 3.1%, $p < 0.001$). *Conclusions:* Some conditions, such as urinary infections, traumas/fractures, pneumonias, delirium, articular pathologies, dehydration and electrolytic alterations, and pressure ulcers are associated to the diagnosis of dementia. The knowledge of specific comorbidities associated to dementia may contribute to define care programs at territorial level; this may get a better management of demented patients and an eventual reduction in hospitalization.

SOCIAL AND BEHAVIORAL GERONTOLOGY

549. ELDERLY CARE RECIPIENTS PERCEPTIONS OF ACTIVITY-RELATED LIFE SPACE — A QUALITATIVE STUDY

A.C. Aberg (Uppsala University, Sweden; *anna.cristina.aberg@pubcare.uu.se*)

It has been suggested that the domestic sphere of elderly people represents a life space that can embody family connections, personal identity and emotional meaning, and that the debate about life spaces for older people should be based on the subjective priorities of the elderly themselves. The purpose of this study was to improve the understanding of preferences of elderly care recipients concerning activity-related life space (ARLS) and its relation to life satisfaction. A mainly qualitative design was used. Fifteen persons aged 80-94 years, undergoing geriatric rehabilitation were interviewed on three occasions: during the stay in hospital, one month after discharge, and 3 six months after discharge. Verbatim transcribed interviews were analysed in line with the 'thematic framework' approach. The results indicated that continuity of activity in a familiar life space, as before the hospitalization, was a common ideal. In contrast to previous studies on the life-space mobility area, the current findings revealed one additional life-space area, with significant importance for the investigated group; namely the area 'close to one's own body'. Ability to carry out activities related to this area e.g. managing personal care, here defined as activities concerning bodily needs such as washing the face and body, toileting, grooming, dressing and feeding, was considered most important. Irrespective of the level of physical capacity, managing personal care was considered one of three identified highly prioritised key activities, the others being socializing and going out of doors. Different adaptive approaches were employed when physical incapacity was considered a hindrance to activity, which as a rule also resulted in limitations of ARLS preferences. These limitations involve a risk to result in reduction of activity level, which in a given disablement process may entail secondary effects on other bodily functions and thereby impair, for example, cardiopulmonary function and muscle strength. Thus, if the overall goal of geriatric rehabilitation is that the individual shall achieve an optimal degree of life satisfaction and an optimal ability to be active and fulfil fundamental life goals, it should be relevant to pay attention the subjective dimensions of activity and ARLS in the goal setting discussions.

550. EFFECTS OF ELDERLY EDUCATION IN RUSSIA

O. Agapova (*dvv international; agapova@rol.ru*)

Representative office of German Adult Education association (*dvv international*) has been cooperating for 30

years with state, civil society and partner organizations engaged in adult education in nearly all parts of the world, including Russia. Near training for adult educators, development of teaching and learning materials, support the institutional and material infrastructure, particular attention is paid to the aims of lifelong learning and education for elderly people. Cooperation with local partners combines professional debates with practical collaboration, strengthening self-help groups and educational activities in different parts of the country. Due to support *dvv international* over 32,000 elderly people took part in various educational events during last 10 years. It seems that it is insignificant nationwide, but if we take into account the fact that each person who received training not only gained something (knowledge, skills, new experiences), but also brought in something of their own, if we take into account that practically everyone is a multiplier, that is a person who disseminates and applies the knowledge gained in his or her narrow circle, then this phenomenon — education of the elderly — becomes a significant factor. Over 20 events of regional, interregional and international nature have been held during these years. Each of them entails certain consequences (new contacts, development of new project ideas, and, more importantly, invaluable experience of training during such events). Over 250 specialists have been trained in various regions of the country, who are now able to carry out work with the elder generation on a professional and modern basis. They are able to use new, interactive methods of work. If in 1996 there was almost no literature on the issue (except for medical literature), now we have about 200 publications, which present the best practices, and discuss methodological, methodical and organizational issues related to education of the elderly. Some researches, based on the feed-back and evaluation of educational activities, show clearly the effects of this kind of education. The following tendencies could be mentioned: most common and repeated courses, regardless of the region are topics related to health, interest to culture and religion, arts and crafts, gardening, psychological trainings — in other words, the coursesal trainings, of the res opinion, these are the followin and programs that allow a person to live an adequate life. The educational programs reflect the phenomenon, which is extremely important, in our opinion. That is breaking stereotypes and common home truths: pensioners are «consumers»: that is not true, they are creators, they actively transform and modify the local community, they may be active and wise supporters of the authorities; elderly people may think only in terms of «yesterday» and «today»: meanwhile, almost all ideas of developed programs belong to the elderly people. We

have only helped them to come together in one place. The history is traditionally pictured in black and white colors: Biographical learning based techniques help them to make paradoxical conclusions, to find out reveals that are overwhelming in their sharpness and profoundness. There are certain delicate topics, discussion of which with elderly people is not considered to be respectable; these, for instance, money. Program «University of Personal Finance Management» provides a real help and support. We suppose, in future interactive learning in later life could widen at the expense of resource centers able to undertake multiple functions, to collect information, to train specialists and volunteers on a qualified basis, to carry out geragogic expert examination of the training programs, to provide methodical and organizational support to the interested institutions. Unified quality standards for the training programs are elaborated and events are held in accordance with such standards would be wishful as well. It would be good to indicate consistent and sustainable relationships with other countries, projects and organizations to tap into the European programs, European practices, and European space of elderly education.

551. EXPERIENCE ON SOCIAL SERVICE AT CENTRE OF HOME SOCIAL SERVICE PROVISION FOR SINGLE ELDERLY AND DISABLED PEOPLE REPUBLIC OF ARMENIA

L. Aghajanyan (*Centre of home social service provision for single elderly and disabled people, Erevan, Armenia; tpmthssk@netsys.am, anoushaa@rambler.ru*)

Description of an Armenian model of service provision to elders and disabled people: Social changes in the past two decades in Armenia, migration, poverty and other social consequences brings to formation of many problems for single elderly and disabled people, who are not able to care themselves and need social support. Centre of Home Social Service Provision for Single Elderly and Disabled People state non-trade organization was established in 1999 and since that time is provided social, medical, psychological support to elderly from Yerevan. The number of clients cared for by a center 1200. The clients are distributed in 4 groups: A, B, C, D (A is for the elders with high level limitations, D is for low level). Centre has administrative staff with physicians, psychologist, sociologists and social workers and also 9 community teams working with Yerevan's structural regions. Each center team includes nurses, nursing aids, occupational therapists and social workers. They provide a full range of services (nursing, social and environmental evaluations, personal care, homemaker chore, meals-on-wheels), coordinated through weekly interdisciplinary team meetings. Visits are being done by subgroup the client is included. Medical services are prophylactic, but if there is a need to get more professional intervention the clients are suggested to get stationary medical care in the medical institutions with whom Centre is cooperated. In May–July 2006 a study was conducted to assess the clients' quality of life and their satisfaction by Centre's services. 125 clients were interviewed. The study shows that 84% of clients in general are satisfied by the services provided to them. Most of all clients are satisfied by the medical care and social advocacy, protection of their social rights provided by the social workers of the Centre. The clients do not agree to extend the type of services; they want to have visits more often. The only service that clients (4%) are ready to pay for is

24 hrs care and support. *Conclusions:* Studies show efficiency of Social service provision to single elders. They must be extended and orientated on gerontology specifics. Elders are more concentrated on medical and material support, and these can be the priorities of the Centre's policy, but also support to social integration of elders and disabled people by providing public activities. For more efficient work Centre needs to cooperate with other countries experience in the field.

552. EXAMINING FROM A CULTURAL PERSPECTIVE THE AGE DIFFERENCES IN THE USE OF THE RELIGIOUS AND SPIRITUAL COPING METHODS AMONG SWEDISH CANCER PATIENTS

F. Ahmadi (*Uppsala University, Sweden; fereshteh.ahmadi@soc.uu.se*)

The existential and spiritual aspect of coping with different serious illnesses is one of the research fields that have not been focused in many countries among others Sweden. The lack of cross-cultural approaches in studying the religious coping have paved the way for increasing the tendency towards generalization of results obtained from research conducted among Americans to other people. To get pass this problem, I have studied religious and spiritual coping strategies used by cancer patients in Sweden. The objectives of the study were: What kinds of religious and spiritually oriented coping methods have cancer patients in this study used? What has been the role of culture in the choice of religious and spiritually oriented coping methods observed in this study? What role does age and gender play in the choice of religious and spiritually oriented coping methods used by cancer patients in this study? The design of this research was qualitative. 51 cancer patients (19 men and 32 women) aged between 25 and 83 interviewed. *In this paper the focus will be mainly on the role of age in coping.* The study shows the impact of culture and of ways of thinking in using religious and spirituality-oriented coping methods when facing stressors caused by cancer. In this respect, a tendency towards rationalism, pragmatism, individualism and spirituality are found to have guided the choice of different religious coping methods by Swedish informants. Besides it is found a considerable difference between divergent age groups, the middle age group shows a more tendency towards spirituality than the younger and older groups.

553. ELDERLY-FRIENDLY ANTALYA: A SAFETY PROJECT FOR RETIRED, DISABLED PEOPLE

A. Aktug¹, F. Aslan² (*¹Community Supported Police Dept., Police Dept., ²Police Dept., Antalya, Turkey; hakanyaman@akdeniz.edu.tr*)

Safety is a service of modern governments, which is not only the duty of police departments but also of every citizen. Safety is also important for growing cities like Antalya. The Police department of Antalya has initiated a Project (SABA), which aims at the prevention of crime by involving the community. In addition to this, we started a collaboration with the Akdeniz University with the believe that «retirement is the end of working life and not of the entire life». The fact that 40% of the population is retired in Antalya and elderly are more prone to crime and violence, moved us to create a project to actively involve these people to solve their own problems and to benefit

from their experience and knowledge. The aim and objects of this project is home safety, street safety, retiree-police cooperation, protecting and supporting the neighbour, inter-generational solidarity, giving a new messages to the labour market. To fulfill this r-teams (team for retirement question — special working group in the police force dedicated to the problems of retired person and their contribution to the community); r-card (retiree card — card giving priority to disabled retired person in civil service departments); telephone chain (chain to check each others' safety and needs); retiree waiting line (special line for retirees decreasing waiting times and preventing elderly from crime (theft, pickpockets); repairing hotline (helping each other by providing repair services); retiree course (enhance the capacity of retired people); r-police hotline (each district has a retiree representative, which provides the police department with information about safety in their community) and retiree chamber (a place where retired people meet for special events). The main target of this project is to prevent crime in community and to decrease the crime rate to a minimum level. For a more beautiful Antalya we would like to «wake-up» the people and experts, to enlarge their vision and to approach the hidden world of opportunities behind the real world.

554. EDUCATING FRAIL ELDERLY IN CARDIOVASCULAR RISK FACTORS

P. Alcalde, S. De las Cuevas, J. Serra, J.A. Martos
(Hospital General de Granollers, Barcelona, Spain;
29582pat@comb.es)

The presence of cardiovascular risk factors entails to a greater incidence and prevalence of cardiovascular diseases (CVD). Health education is fundamental for its adapted handling, but if a suitable adherence of the sanitary advices by the population is not made can be associated to new complications. In an outpatient geriatric evaluation and management of risk factors for CVD we have analyzed if the adherence to basics aspects in health education is associated to complications. Our study was made in one population of frail elderly assessed in outpatient geriatric, in the General Hospital of Granollers, between February 2006, and July 2006. The median follow-up was 6 months. The sanitary advices are: ambulation of at least 30 minutes every day, adherence to prescribed diet, and changes in the risk factors. We considered two groups, one of study (GS) that compliance at least one of those advices, and it is compared with another group, the group control (GC), that does not compliance any of the indicated advices. We enrolled 71 elderly patients (22 men), age mediates 82 years. In its antecedents of risk factors they emphasize: hypertension (83%), dyslipidemia (60%), diabetes (35%), obesity (25%). In its pathological antecedents they emphasize: heart failure (38%), coronary heart disease (31%), stroke (31%). We are considered that they fulfil the norms of health education 26 patients (37%). Compared with the unreliable ones there is not difference in its functional situation, cognitive function, profile of the risk factors, nor in the hospital admission during the follow-up period. But if we added to the hospital admission the mortality, like complication, we observe significant differences between groups both ($p=0,041$). We can conclude that a third of frail elderly patients adherence to the health prescriptions that are advised to them. But a high percentage cannot

make what it is advised to them by diverse reasons. The compliance in the short term does not seem to have consequences in measurements of health, except in a greater tendency to the hospital admission and to the mortality, than they are not significant in case single, but that yes they are it if they are added.

555. COPING WITH ELDER ABUSE AND NEGLECT — LEADING SOCIAL CHANGE THROUGH TRAINING PROFESSIONALS

S. Alon (JDC ESHEL, Jerusalem; saraA@jdc.org.il)

The presentation will demonstrate a process of leading social change concerning coping with elder abuse and neglect through training programs for professionals. Training is being viewed as an essential strategy for prompting plans for intervening and preventing elder abuse and neglect. Jdc — Eshel (The Association for the Planning and Development of Services for the Aged in Israel), in collaboration with the Welfare Ministry and the Health Ministry, have developed and implemented training programs for target populations in three major directions: (1) Dissemination of basic knowledge for identifying elder abuse and neglect, risk assessing and referring for further intervention. (2) Structuring models and skills for intervention through integrating theories and trainees experience. (3) Raising awareness among older adults and among professionals. Recruiting professionals and building coalitions with organizations providing services for the elderly. Description of training programs will be demonstrated (i.e. goals, objectives, contents, trainees characteristics and outcomes). *Summary:* The presentation describes a process of training professionals as social change leaders. Based on the IWA Model — Influence Without Authority, training resulted in raising awareness to elder abuse and neglect, raising numbers of identified victims, structuring models for intervention and assimilating protocols for dealing with elder abuse in health care organizations and welfare departments.

556. A MODEL FOR INTERVENTION IN ELDER ABUSE — DEVELOPMENT, IMPLEMENTATION AND EVALUATION

S. Alon¹, A. Berg-Warman² (¹JDC ESHEL, Jerusalem,
²Myers JDC Brookdale Institute, Jerusalem, Israel;
ayeletB@jdc.org.il)

This presentation describes findings of an evaluation study of an intervention model for preventing elder abuse and neglect in the community. The program has been implemented in three large cities in Israel since 2004. In Israel, 10% of the general population are senior citizens. Elder abuse and neglect have been recognized as a social concern in recent years. Findings of a national survey indicate that 18.4% of the elderly population has been exposed to abuse. Professionals in the fields of welfare and health, as well as law enforcement agencies, play a central role in reducing the extent of injury and harm. Coping with this issue requires a multi-professional and multi-systemic approach. In light of this, a model for intervention was developed. *The program includes* establishing a professional unit of experts from various disciplines, under the aegis of social service departments in local authorities. Experts are involved in screening, identifying and intervening in cases of abuse and neglect. They are also actively raising awareness among the elderly, their families and among professionals in the various services. *Findings* indicate that 500

elderly victims are currently receiving treatment and services from the units. Some of them applied to the program of their own accord, and others were referred by professionals in the health, welfare and police systems. Eighty-six percent of the victims are women whose average age is 75. Less than half of them are widows or widowers, and almost two thirds of them are impaired. The perpetrators are usually men, of whom over half are grown offspring with economic dependency, mental disorders, or burnout as a result of protracted care-giving. The most common type of abuse is psychological abuse, followed on a descending scale, by physical abuse, economic exploitation and neglect. Therapeutic conversations and mediation are the most common intervention. Social and medical interventions were found to be extremely effective in improving the situation of the victim as when legal measures were taken. *In summary*, the presentation demonstrates the contribution of the model and it's evaluation in placing the problem on the professional and public agenda, implementing focused interventions for stopping elder abuse and reducing the harm and suffering to the elderly. Conclusions and implications for implementing similar intervention models will be also presented.

557. GERIATRICS D REFUSAL PHENOMENON WITH END STAGE DEMENTIA PATIENTS

B.Z. Aminoff (Sheba Medical Center, Tel-Hashomer, 52621; Human Suffering and Satisfaction Research Center, El-Ad, Israel; bechorz@yahoo.com)

In memory to Geriatrics D department which refused and closed due to failure coping with suffering of end stage and dying dementia patients, caregiver staff, and family members. The «Geriatrics D Refusal phenomenon» of end stage dementia (ESD) patients has never been described in medical literature. Refusal phenomenon is entirely clear-cut different from the well-known «burn out syndrome», and it is separate and independent part of abuse and neglect of elderly patients. In burn out syndrome the staff has motivation to give care, and they understand the importance of the challenge, but are exhausted due to the enormous burden. In the Geriatrics D Refusal phenomenon every effort is made in order not to admit ESD patients and there are numerous techniques are employed of getting rid these patients from the department. In the Geriatrics D Refusal

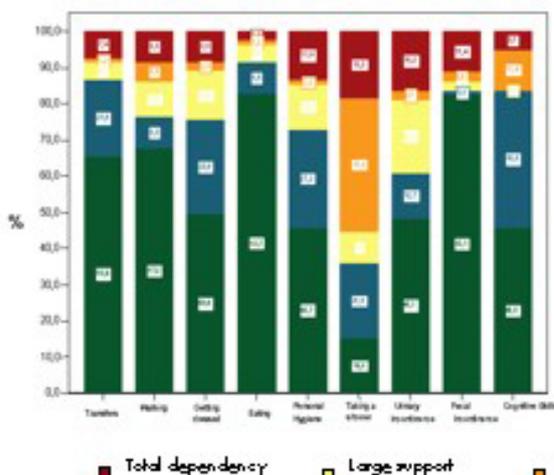
phenomenon, both sides, the Health Insurance Funds and caregiver hospital staff, reject the importance of the challenge to provide appropriate care to ESD patients. The refusal phenomenon of ESD patients by health services is one of main causes of suffering of in end stage dementia. We developed novel objective tool for measuring suffering in ESD Mini Suffering Examination (MSSE) which presented in Berlin (1999), Jerusalem (2000), Vancouver (2001), Stockholm (2002), Tokyo (2003), Las-Vegas (2004), Rio-de-Janeiro (2005), Madrid (2006) and the Committee for Labor, Social Services and Health of the Israeli Knesset (2005), and published in Journal Archives of Gerontology and Geriatrics (2004, 38, 2, 123–130). The results of our research regarding of measuring suffering of dying dementia patients published in American Journal of Alzheimer disease and other Dementias (2004, 19, 4, 243–247) and American Journal of Hospice & Palliative Medicine (Original article, 2005, 22, 5, 344–348), and was proven that MSSE score on the day of admission was 5.62 ± 2.31 , and increased to 6.89 ± 1.95 at the last day of life ($P < 0.0001$). According to MSSE scale, 63.4% and 29.6% of patients died with high and intermediate level of suffering, respectively. Only one respond for these disturbed results was closing of geriatric department in which developed MSSE scale and provided objective experimental suffering measuring of end stage and dying dementia patients.

558. QUALITY AND DEPENDENCY. DEPENDENCY LEVELS AND NEED FOR SERVICES IN SPAIN

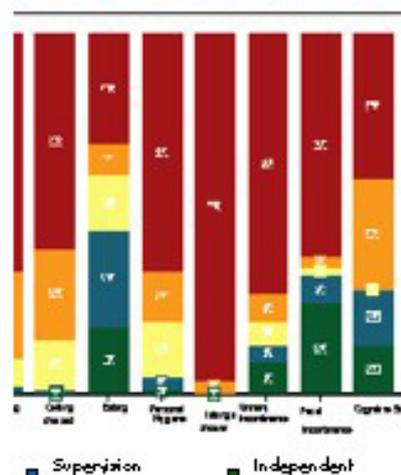
I. Ancizu¹, *D. Fontanals¹*, *J. Pascual¹*, *A. Navarro²*, *L. Literas¹* (¹Fundaciyn SAR, Barcelona, Spain, ²Universitat Autnoma de Barcelona, Spain; iancizu.fundacion@sar.es)

Introduction: The current context of long-term care in Spain is marked by the recent approval of the Dependency Act (in force from January 1st 2007). This Law defines the civil right to be cared for when in dependency and establish an autonomous system of social protection, which sets a difference with other European structures. The results presented here are part of a research project commissioned by IMSERSO (Institute of Older Persons and Social Services) in 2006 with the overall aim of learning more about the legal rules implemented in the different Autonomous Communities and defining the requirements

Grade I — level I



Grade III — level II



of a national service portfolio according to the basic typology of dependency defined in the Dependency Act. *Objectives:* Characterising old persons' functional profiles on the basis of their need for support, according to the six levels of dependency ascertained in the Dependency Act; Defining care scenarios that allow allocating services to the profiles identified. *Methods:* Data are systematically registered in a computerised care information system that includes each resident's care plan and interdisciplinary assessment at admission, which methodologically is assumed to be the situation at home. The final sample comprises 636 old persons admitted to long-term care facilities in six different Spanish Autonomous Communities. The methodological strategy combines quantitative and qualitative techniques. Old persons' autonomy has been established from nine variables of the Basic Minimum Data Set (MDS RAI 1.0) whereas the intensity of care required has been measured through the nursing care time (RUG-III). K-means cluster analysis has been used to characterise the six groups of dependency: three profiles with two levels each. In a second stage, care scenarios are defined through the qualitative analysis of sixty randomly-selected socio-personal and clinical records (ten per group). The key conceptual areas identified constitute the basis of the structural analysis performed. *Results:* The results obtained through the K-means cluster analysis are shown in an illustrative graphic comparison between the lowest and the highest levels of the dependency grades defined by law. The differences on the nine variables analysed are significative, allowing for a more accurate adjustment of resources to dependency profiles.

Conclusion: Results are rich and diverse, constituting a powerful source for political decision-making. The Spanish case is, therefore, to be discussed in the European context with the aim of settling the basis for assessing the development, implementation and efficacy of the Dependency Act.

559. BIOMEDICAL ROBOTICS FOR AN ACTIVE LONGEVITY

G. Anerdi, S. Micera, L. Odetti, J. Carpaneto, P. Dario
(Scuola Superiore S. Anna, ARTS Lab and EZ-Lab, Pisa,
Italy; L.odetti@sss.it)

The world population is rapidly aging. This trends poses significant challenges to the organisation of health and social care services. The main aim of the lecture is to illustrate and discuss the huge potential of robotics and mechatronics technologies (in combination with advanced biomechanical models) in order to provide means to identify, measure and slow down in elderly people the effects of age-related modifications of the neuro-musculo-skeletal systems as well as of certain aspects of the cognitive system. This will increase substantially the possibility of elderly people to stay longer at home, thus better fulfilling their expectation for an active longevity and alleviating the burden for families and for the health care system. Many different applications of biorobotic systems to achieve the above goal will be illustrated: (i) the use of robotic systems to analyse the age-related modifications of the motor control strategies; (ii) the use of wearable systems to assess motor performance in a unstructured environment (e.g., the house); (iii) the use of technological devices to help elderly people to live autonomously in their domestic environment. The lecture will outline the scientific bases of the problem, analyze the main robotics and mechatronics techniques that can be exploited to address it, present

the solutions that have been explored so far, and discuss the perspectives of research on robotics for the elderly in the near and long term future.

560. DIFFERENCES IN FALL RISK FACTORS OF POST-ACUTE AND CHRONIC CARE NURSING HOME RESIDENTS

E.N. Antonova, D.R. Zimmerman (University of
Wisconsin-Madison; jenya@chsra.wisc.edu)

Background: Rising healthcare costs combined with aging of populations in Europe and America increase the importance of the pay-for-performance approach. Nursing home (NH) care quality assessment across providers presents challenges to healthcare decision makers and policy-makers. NH care quality is a multidimensional construct; however data often belong to multiple disconnected sources. Classification of existing metrics across nursing home quality domains is needed for NH quality assessment and pay-for-performance methodology. *Research objective:* The purposes of this study were to: a) review existing metrics of NH care quality from multiple data sources; b) classify the metrics into a single multidimensional system based on the Donabedian's Structure-Process-Outcome model; c) identify the lack of metrics of the structure, process, and outcomes in each domain of the multidimensional system. *Data:* The sources of metrics were the following datasets: the Minimum Data Set (MDS), which is the basis for calculation of Quality Indicators and Quality Measures (QI/QMs); the Online Survey, Certification, and Reporting (OSCAR) system, which contains information of annual NH surveys, customer complaints, and NH staffing. Finally, three survey instruments provided metrics on customer satisfaction. *Methods:* First, metrics from each data source were classified into 25 domains in three groups: Clinical Care, Organization of Care Delivery, and Quality of Life. Second, the metrics were classified as Structure, Process, or Outcomes of care. Third, the lack of metrics of Structure, Process, and Outcomes was identified across the domains. *Principal findings and conclusions:* Clinical care group consisted of 11 domains and included metrics from the MDS and OSCAR systems. Organization of Care Delivery group included 9 domains consisting of metrics primarily from the OSCAR system with some metrics from the MDS. The Quality of Life group consisted of 5 domains including metrics from the OSCAR and customer satisfaction surveys. The NH care quality domains were most frequently represented by process measures, followed by structure and outcome metrics. Outcome metrics mostly represented Clinical Care group; fewer outcome metrics were included within the Quality of Life and Organization of Care Delivery group of domains. Development of outcome metrics is needed to assess NH care quality. *Implications for long-term care policy:* This study has linked and classified data from multiple sources in a single multidimensional model of NH care quality and identified the lack of metrics of the structure, process, and outcomes across the domains.

561. UTILIZING DATA FROM MULTIPLE SOURCES FOR MULTIDIMENSIONAL ASSESSMENT OF NURSING HOME QUALITY

E.N. Antonova, D.R. Zimmerman (University of
Wisconsin-Madison; jenya_antonova@chsra.wisc.edu)

Background: Rising healthcare costs combined with aging of populations in Europe and America increase the importance of the pay-for-performance approach. Nursing

home (NH) care quality assessment across providers presents challenges to healthcare decisionmakers and policy-makers. NH care quality is a multidimensional construct; however data often belong to multiple disconnected sources. Classification of existing metrics across quality domains is needed for NH quality assessment and pay-for-performance methodology. *Research objective:* The purposes of this study were to: a) review existing metrics of NH care quality from multiple data sources; b) classify the metrics into a single multidimensional system based on the Donabedian's Structure-Process-Outcome model; c) identify the redundancy and lack of metrics of the structure, process, and outcomes in each domain of the multidimensional system. *Data:* The sources of metrics were the following datasets: the Minimum Data Set (MDS), which is the basis for calculation of Quality Indicators and Quality Measures (QI/QMs); the Online Survey, Certification, and Reporting (OSCAR) system, which contains information of annual NH surveys, customer complaints, and NH staffing. Finally, three survey instruments provided metrics on customer satisfaction. *Methods:* First, metrics from each dataset were classified into 25 domains in three groups: Clinical Care, Organization of Care Delivery, and Quality of Life. Second, the metrics were classified as Structure, Process, or Outcomes of care. Third, the lack of metrics of Structure, Process, and Outcomes was identified across the domains. *Principal findings:* Clinical care group consisted of 11 domains and included metrics from the MDS and OSCAR systems. *Organization of Care Delivery* group included 9 domains consisting of metrics primarily from the OSCAR system with some metrics from the MDS. The *Quality of Life* group consisted of 5 domains including metrics from the OSCAR and customer satisfaction surveys. The NH care quality domains were most frequently represented by process measures, followed by structure and outcome metrics. Outcome metrics mostly represented Clinical Care group of domains. The datasets were found to cover independent areas of care quality, however a few instances of metric overlap were found. Most overlapping metrics shared a common definition, but differed in the timeframe and data collection methods. *Conclusions:* NH care quality metrics from different data sources proved to be complimentary and formed a comprehensive multidimensional system. The metrics reflecting the same attributes in different datasets might be not entirely compatible due to differences in definitions and assessment methods.

562. UNDERSTANDING THE QUALITY OF SLEEP OF OLDER PEOPLE: GENDER, MARITAL STATUS AND MATERIAL CIRCUMSTANCES

S. Arber, M. Bote, R. Meadows (University of Surrey; S.Arber@surrey.ac.uk)

Background: Sleep is fundamental to health and well-being, with lack of sleep increasingly shown to impact on cardiovascular risk factors and diabetes, as well as road traffic accidents. Good sleep in later life reduces risk of falls and depression, is essential for maintaining activity and performance levels, and reduces challenging behaviour encountered in dementia sufferers. It is therefore surprising that sleep has been the subject of little gerontological research, and is largely invisible in health promotion literature targeted towards older people. *Aims and Methods:* The paper examines the social contours of sleep problems in

later life, to explore differences by marital status and living arrangements, socio-economic circumstances, worries, physical and psychological health status¹. A representative sample of 1800 men and women aged over 60 are analysed from the UK *Psychiatric Morbidity Survey, 2000*, focusing on reported poor quality of sleep. *Results:* Nested logistic regression models are used to show the independent effects of a range of variables on sleep quality and how these differ for older men and women. Women report poorer sleep quality than men, which is largely explained by their more disadvantaged living and socio-economic circumstances. Older people living alone report poorer sleep, even after controlling for health and material circumstances. There are strong links between living in disadvantaged socio-economic circumstances and poor sleep quality, particularly low income and low educational qualifications. Number of chronic illnesses and poor self-reported health are independently associated with reported sleep problems. Worries, health status and psychological health are closely linked to sleep problems, but do not explain the identified associations of disadvantaged material circumstances with poor quality sleep. *Conclusions:* Greater attention needs to be paid to the social factors associated with sleep problems in later life, as well as identifying non-pharmacological approaches to reduce sleep problems. *Supported by the EU Marie Curie Research Training Network (MRCTN-CT-2004-512362), and the Economic and Social Research Council (No: RES-339-25-0009).*

563. COMPLEMENTARY BETWEEN FORMAL AND NON-HOUSEHOLD INFORMAL SERVICES IN ADVANCED OLD AGE; A TEN-YEAR FOLLOW UP

F. Armi, E. Guilley, C.J. Lalive d Epinay (Center for interdisciplinary of gerontology, University of Geneva, Switzerland; franca.armi@cig.unige.ch)

The aim of this paper is to investigate the coordination in older people's use of formal and non-household informal help in a context of increasing need for care and decreasing number of potential informal carers. Previous researches focusing on the relationships between formal and informal networks are mainly based on cross-sectional data on elderly adults having a poor health. We address the issue of coordination in help in a random sample of 340 community-living octogenarians from the Swiss Interdisciplinary Longitudinal Study on the Oldest Old (SWILSOO) having various levels of health and followed up to nine times over ten years (N=1592 interviews). This study has demonstrated that in 71.2% of the cases the amount of informal services do not decrease significantly with increasing frequency of formal aids, indicating that both networks were complementary in the majority of the cases. However, in few cases (28.8%), the formal and informal networks substituted each other, but those cases do not generally represent a disengagement of the caregivers.

564. HEALTH, SUPPORT PROVIDED AND RECEIVED IN ADVANCED OLD AGE; A FOLLOW UP OF TWO COHORTS OF OCTOGENARIANS

F. Armi, E. Guilley, C.J. Lalive d Epinay (Center for interdisciplinary of gerontology, University of Geneva, Geneva, Switzerland; franca.armi@cig.unige.ch)

While research focuses mainly on support provided to the elder, this paper deals with the very old as a support provider to his family as much as a care recipient

from both his family and formal network. We hypothesize that elders with declining health will try to maintain the provision of services, even when they require and receive help. We address the issue of support exchanges in a random sample of two cohorts of community-dwelling octogenarians (N=717) from the Swiss Interdisciplinary Longitudinal Study on the Oldest Old, followed up to ten years (SWILSOO). A multilevel model was applied to assess the effects of health, controlled for socio-demographic and family network variables, on the frequency of services that the old persons provided to their family and received from their family and formal networks. Health is operationalized in three statuses: ADL-dependent, ADL-independent frail, and robuSt. While the recourse to the informal network increased progressively with the process of frailty, the recourse to the formal network drastically increased for ADL-dependent individuals. Being ADL-dependent seriously altered the capacity to provide services, but ADL-independent frail persons were providers with the same frequency as the robust oldest old, showing their ability to preserve a principle of reciprocity in their exchanges with their family network. This continuity of roles may help frail persons to maintain their self-esteem and well-being.

565. PREVENTIVE HOME VISITS FOR OLDER ADULTS IN DANISH MUNICIPALITIES. DO THEY HAVE ANY EFFECTS?

K. Avlund, M. Vass, C. Hendriksen (*Institute of Public Health, University of Copenhagen, DK;*
K.Avlund@socmed.ku.dk)

This paper aims to examine whether preventive home visits for older adults have an effect when performed as part of the routine in Danish municipalities, and to analyse whether a three-year educational programme for home visitors and general practitioners delayed functional decline among older men and women. The study was designed as a prospective randomised follow-up study with randomisation and intervention at municipality level and outcomes measured at the individual level. During the three-year intervention period home visitors in the intervention municipalities received regular education and the general practitioners were introduced to a short geriatric assessment programme during three years. The study population included 4034 75- and 80-year-old persons living in the municipalities. Number of home visits during the three years was included in the analysis. Functional ability was measured by actual disability (The Avlund Mobility-Help Scale) and early signs of disability (The Avlund Mobility-Tiredness Scale) at the end of the intervention (3 year follow-up) and 1¹/₂ years after the end of the intervention (4¹/₂ year follow-up). Analysis shows that the 80-year olds had less actual disability if they had received preventive home visits during three years as part of the routine in the municipalities (OR=2.03; CI 1.14-3.62) and if they lived in an intervention municipality (OR=1.53; CI 1.12-2.09). In addition, 80-year-olds who had not received preventive home visits and who had lived in a control municipality had higher odds ratios of sustained tiredness during three years (OR=3.62; CI 1.08-12.07 and OR=3.48; CI: 1.51-8.00). In conclusion, it is suggested that older adults have benefits from receiving preventive home visits and from living in a municipality where the home visitors and general practitioners have received a brief educational programme.

566. SPIRITUAL AND EXISTENTIAL NEEDS IN ELDERLY CARE – AN EMPIRICAL RESEARCH

P.H. Axell, N. Martinussen, K. Myhre, O. Vibe (*Cathinka Guldberg Centre, Oslo, Norway; pia.axell@cathinka.no*)

In 2000 WHO defined that palliative care shall include four cornerstones to which care providers should pay special attention; The patient's physical, psychological, psychosocial and *spiritual* needs. Searching through the literature we found few research attempts that shed light over the topic of spirituality in elderly care. The aim of this study was to investigate the need of spiritual and existential reflection entailed in elderly care context, seen from the subjective perspective of the patient, health care staff and relatives at Cathinka Guldberg centre, a nursing home in Oslo. The focus in this small scale-study was on the existential and spiritual needs and experiences of patients who are 85 years or older, living in a nursing home, as they face death from a developmental perspective. *Methods:* The information was collected from structured conversations focusing on the participants reflections. The sessions were tape-recorded. The main questions were: (1) What are the experiences, thoughts, and/or problems regarding existential and spiritual matters for the oldest old? (2) What are the expectations regarding their own role related to others role concerning such matters? The topic list was compiled from both elderly care literature and existential therapeutic literature, and was discussed with an expert of the field. *Result:* All participants had existential experiences related to own or others end of life situation. From the patients perspective it involves a great extend of dependency and restriction of freedom, as well as a struggle of daily life and survival. All participants had thoughts about the future, in particular the dying process, and reflection on their relations with relatives and significant others, including concerns about family and children and grandchildren. All patients were older than 85 and expressed that their lives were overdue, and they wanted to die in the near future. However, these statements were paradoxically contradicted by their future plans. Rationally all patients knew that the forthcoming death was just around the corner, but they felt and lived emotionally as their own death was something far away in distant future. Existential and spiritual well-being was considered an important component of their mental health. *Ethical considerations:* The Norwegian Research Committee of Medical Research ethics was sought for an ethical approval of the study. *Publication:* A first theoretical paper of these issues was presented at the 1. International congress of Gerontology in Lisbon 23, October 2006.

567. THE OPPORTUNITIES OF STRESS INDUCED PREMATURE AGING PREVENTION

A.L. Azin, S.A. Tsaregorodseva, E.V. Vakhraneva, A.V. Smirnov (*Republican Clinical Hospital of War Veterans, Yoshkar-Ola, Russia; azin_rbv@mail.ru*)

The purpose of this research is to study the efficiency of our medical and psychological rehabilitation when applied to men of capable age suffering from post-traumatic stress disorders (PTSD) in order to reduce aging pace and risk of developing psychosomatic pathology and premature death. *Materials and methods.* We studied two groups of patients aged from 22 to 35 (the average age is 30,5±1,4 years old): the first group consisted of 25 patients who

hadn't undergone a rehabilitation course; the second was made up of 27 patients who had undergone a 3–9 month course of rehabilitation. We used experimental psychological methods included: 1) test of traumatic stress by I.O. Kotenev; 2) Spilberger's anxiety test; 3) Lusher's test modified to assess emotional instability; 4) asthenia scale; 5) depression scale. Also we used the spectral analysis of the heart rate variability (HRV): spectrum output (TP ms²/Hz) and correlation of LF/HF and %VLF. Biological age (BA) was estimated by the method offered by the Institute of Gerontology, Academy of Medical Science, Kiev, USSR. Our rehabilitation included three approaches: 1) personal; 2) symptomatic; 3) social psychotherapy. We analyzed intensity of pathopsychological symptoms of PTSD, dimensions of spectral analysis of HRV and biological age before and after the course of rehabilitation. *Results.* The first group of patients showed increase of anxiety, depression, emotional instability, asthenia and social dysfunction. The second group had a certain decrease of anxiety (37%), depression (34%) and asthenia (33%). The patients of the second group also showed normalization of vegetative heart rate regulation circuit parameters: 1) increase of spectrum output TP (especially during physical activity); 2) decrease of LF/HF which approached the balance of sympathetic and parasympathetic reactions; 3) decrease of %VLF which denotes decrease of main impact on heart rate. When we studied BA we noted that in the first group BA increased more than 6 standard years, the second group showed decrease of BA for $1,09 \pm 0,06$ standard years. The results show that our rehabilitation program allows to lower acuity of PTSD at its first stages and to prevent stable pathocharacterological personality changes leading to premature aging.

568. PENSION SAVING IN THE UK: WHO SAVES AND WHO DOESN'T?

K.J. Baker (Centre for Research on Ageing, University of Southampton, England; karen.baker@soton.ac.uk)

The UK pensions system consists of a mix of state pensions and private pensions provided by employers and insurance companies. Increased survival rates mean that more people are living to collect their pensions. Increases in longevity mean that people are collecting their pensions for longer. Falling support ratios mean that there are fewer workers to pay for the pensions of those in retirement. These demographic changes have contributed to fears regarding the sustainability of the UK pensions system. In recent years state and employers have been withdrawing from pension provision and private saving by individuals is failing to make up the shortfall. In response to this, the government has recently announced plans for reforms to increase the state pension age from 65 to 68 and to set up a National Pensions Saving Scheme (the NPSS) of Personal Accounts to encourage private pension saving amongst employees without access to employer provided pension schemes. The trade off of a more generous state pension for a longer working life means that people who wish to retire early will have to save more privately. The success of the reforms in preventing a decline in the living standards of future pensioners depends on people saving more for retirement in the NPSS or alternative retirement saving vehicles. The aim of this research was to determine factors affecting private pension saving by identifying the

demographic and socio-economic characteristics of savers and non-savers in the UK. This was done through analysis of the Family Resources Survey (FRS) an annual survey commissioned by the government Department for Work and Pensions. It was found that employment related factors (employment status, industry, social class, occupation, income and number of years in work) were central in determining the likelihood of private pension saving. Employment related factors were implicated in explaining a gender difference in private pension saving. Age was also an important factor influencing private pension membership. Secondary factors included marital status, education and housing tenure. The findings suggest that the government reforms will increase the number of people with private pensions but that some groups will be left out. Those excluded will face a longer working life and lower standards of living in retirement.

569. PECULIARITIES OF SOCIAL ADAPTATION IN OLDER AND VERY OLD WOMEN

S.N. Balashova (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; ibg@gerontology.ru)

Social, economic and cultural transformation of modern society entails medico-social and socio-psychological consequences. The study was performed on 72 women volunteers in the age of 56–74 years. The women were subdivided into two groups: group I (31 women) aged 56–59 yr and group II (41 women) aged 60–74 yr. Socio-psychological adaptation test was used as the basic method (A.I. Osinsky, 1983). The following indices were analyzed: adaptation level, emotional comfort, internality (inner control), escape from problems. The mean index of adaptation level in women older than 60 yr made 53,9%. This points out that they feel rather adapted to the social situation. Women younger than 59 yr showed somewhat lower values of this index (49,5%), which presumably reflects the increased complexity of the adaptation problems, related to the coping with new social changes (i.e. retirement). The mean index of emotional comfort in group II women made 39,0%, and in group I women the level of well-being and of satisfaction with their social situation was lower — 41,4%. «Internality», the index reflecting the will of the person to assume responsibility for oneself, made 63,2% in group II women and 62,1% in women younger than 59 yr, which points out the tendency of the latter to attribute the responsibility for some events to the external factors. The index of «escape from problems» is also reduced in women older than 60 yr (14,8%) as compared to women younger than 59 yr (15,7%). Thus, the lowest level of adaptation at the moment of study was shown by women aged 56–59 yr, while women older than 60 yr were more adapted. The obtained results suggest an assumption on the expedience of using the above program of study for improving the quality of psychological service in the framework of measures for adaptation and improvement of the quality of life in older and very old women.

570. METABOLIC SYNDROME IN ASPECT OF AGING

M.F. Ballyuzek (Clinical Hospital of RAS, St. Petersburg, Russia; ntgrin@mail.ru)

Pathogenetic models of metabolic syndrome (MS) at present are mainly considered without taking into ac-

count one of the most important non-modified risk factors of development of cardiovascular pathology, such as the age factor. Regularities of age evolution of this syndrome are poorly studied. Meanwhile, there is resemblance of mechanisms of physiological aging and of development of polymetabolic disturbances as manifestations of this syndrome. Age-related changes in an organism affect all chains of metabolic rearrangement, which most likely allows explaining the high incidence of MS in aged persons. The goal of this investigation was to study the main clinical manifestations of MS at the stage of its formation. Data of examination of 1104 patients have shown a consecutive sequence of the syndrome signs: in young and middle-age individuals the syndrome is more often begins from development of arterial hypertension (AH) and abdominal obesity, while in aged patients — from a long period of predominance of the excessive body mass. The MC-characteristic pathological states have different degrees of manifestations at all age periods. Patients above 60 years are characterized by no signs of pronounced, long-lasting disturbances of lipid and carbohydrate metabolism, while predominant in these patients are AH without hereditary complications and obesity. In geriatric patients as compared with patients of younger groups, there were noticed a statistically significant greater decrease of voluminous blood flow in peripheral tissues, an enhancement of signs of endothelial dysfunction, predominance of parasympathetic and humoral-metabolic influences. The advanced age and gender determine the degree of endothelial dysfunction, the type of remodeling of myocardium and large blood vessels, level of melatonin secretion and accordingly the degree of manifestation of metabolic disturbances. Evaluation of various variants of the age-related syndrome evolution can allow concluding that MS is a non-uniform pathological state with the presence of various variants of its course. These variants — from malignant to slowly progressing — are determined both by endogenous (including age-related) and by exogenous factors and have their markers.

571. THE FIRST ISRAELI NATIONAL SURVEY OF ELDER ABUSE AND NEGLECT: FINAL FINDINGS

T. Band Winterstein, Z. Eisikovits, A. Lowenstein
(University of Haifa, Israel; twinters@study.haifa.ac.il)

This paper presents findings concerning the epidemiology of elder abuse and neglect in the Israeli society based on data of the first National Survey of Elder Abuse and Neglect. Having such a survey signals the higher visibility and social priority given to this phenomenon. National representative stratified samples of 1045 households of older people constitute the sample. The survey instrument addressed the various kinds of abuse ranging from physical, emotional, financial and neglect. Based on the preliminary analysis of the findings the study presented a comprehensive picture of the extent, severity and distribution of elder abuse. Findings indicate that about 18.4% of the informants were exposed to at least one kind of abuse during the 12 months preceding the study. The highest rates of abuse were verbal (14.2%). The rates of reported abuse are similar among the Jews and the Arabs (18.3% and 19.6% respectively). When examining family relations we found that financial exploitation (6.6%) was mostly performed by adult children. The survey also examined the

characteristics of perpetrators and victims and profiles will be presented based on risk indicators. Finally the prevalent attitudinal structure related to elder abuse in the Israeli society is described. Possible implications for policy and practice are suggested.

572. CROSS-SECTIONAL VALIDATION OF THE AGING PERCEPTIONS QUESTIONNAIRE: A MULTIDIMENSIONAL SCALE FOR ASSESSING PERCEPTIONS OF AGING

M. Barker, A. O'Hanlon, H. McGee, A. Hickey, R. Conroy
(Royal College of Surgeons in Ireland; aohanlon@rcsi.ie)

Background: Self-perceptions of aging have been implicated as independent predictors of functional disability and death in older adults. In spite of this, research on self-perceptions of ageing is limited. One reason for this is the absence of adequate measures. Specifically, there is a need to develop a measure that is theoretically-derived, has good psychometric properties, and is multidimensional in nature. This study describes the validation of this newly-developed instrument, the Ageing Perceptions Questionnaire (APQ). *Methods:* Participants were 2,033 randomly selected community-dwelling older (+65 yrs) adults who completed the APQ alongside measures of physical and psychological health. The APQ assesses self-perceptions of ageing along eight distinct domains or subscales; seven of these examine views about own ageing, these are: timeline chronic, timeline cyclical, consequences positive, consequences negative, control positive, control negative, and emotional representations; the eighth domain is the identity domain and this examines the experience of health-related changes. *Results:* Subscales had good internal reliabilities. Confirmatory factor analysis indicated that the model provided a good fit for the data. Results showed that self-perceptions of ageing were independently related to physical and psychological health. Mediation testing also supported a role for self-perceptions of ageing as partial mediators in the relationship between indices of health and physical and psychological health outcomes. *Conclusions:* Findings support the complex and multifaceted nature of the ageing experience. The good internal reliability and construct validity of the subscales suggests that the APQ is a promising instrument that can enable a theoretically informed, multidimensional assessment of self-perceptions of aging. The potential role of self-perceptions of ageing in facilitating physical and psychological health in later life is also highlighted.

573. PERCEPTIONS OF AGEING AND THEIR RELATIONSHIP TO HEALTH STATUS

M. Barker, A. O'Hanlon, H. McGee, A. Hickey, R. Conroy
(Royal College of Surgeons in Ireland; aohanlon@rcsi.ie)

Objectives: Perceptions of ageing can predict morbidity and mortality. However little is known about the complex and multi-dimensional nature of these perceptions, or their relationship to health. This study investigated the relationship between perceptions of ageing and a range of health indices. *Method:* Participants were randomly-selected community-dwelling older Irish adults (n=2,033; age 65–98; 43% men). Perceptions of ageing were assessed using a new, theoretically-derived measure, the Ageing Perceptions Questionnaire (APQ). The APQ is multi-dimensional with nine subscales each of which assesses a specific perception of ageing. Indices of health status were

current self-assessed health, health compared to 1 year ago, future health (1-year from now), comparative health (health compared to peers) and functional capacity (the Health Assessment Questionnaire Disability Index (HAQ-DI)). *Results:* The nine APQ subscales were found to have good psychometric properties. Perceptions of ageing were related to health status indices with the exception of future health. On each of the nine APQ subscales, perceptions of ageing were differentially related to self-assessments of health and functional impairment. Perceptions of ageing accounted for a significant proportion of variance in self-assessed health even after controlling for demographic variables and functional ability. The most significant APQ predictors of self-assessed health were control positive, consequences negative and emotional representations. *Conclusion:* Results highlight the dynamic interrelationship between perceptions of ageing and perceptions of health. Perceptions of ageing were associated with variations in self-assessed health. This highlights the potential role of ageing perceptions in health-related outcomes. Helping individuals modify their perceptions of ageing could have important implications for facilitating health in later life.

574. BARRIERS TO GOOD MENTAL HEALTH IN LATER LIFE

J. Barratt¹, E. Bridgeford² (¹*International Federation on Ageing, Canada*, ²*Age Concern, UK; international@ace.org.uk*)

Demographic changes in the next decade will result in unprecedented numbers of older people in many countries. Recent trends indicate that mental health in later life is becoming an increasingly important issue to understand and respond to. Discrimination on the basis of age is the common type of prejudice experienced by older people and it has a negative effect on their mental health. Although depression is a common mental health problem in later life, it is not a normal and inevitable part of the ageing process. This session will examine mental health issues associated with later life, looking at some of the possible barriers as well as presenting examples of leading practice for addressing the issues. The role that the 'environment' plays will set the scene for the session in addressing the positive or challenging context that older people lives with. Whilst there are exceptions, older people often live in a hostile and indifferent social environment which is compounded by economic and cultural tensions. For example, there is good evidence to suggest that isolation leads to depression and the environment plays a key role in this. Examples of leading practice will facilitate discussion for the delegates starting with presentation of legislative approaches to protecting vulnerable adults with mental health problems in Scotland. There is new legislation that is based on a set of guiding principles covering particular areas of mental health and this session will seek to highlight the approach it has taken. Next, health promotion approaches to maintaining mental health and well-being in later life will be explored, drawing on findings and recommendations from the UK Inquiry into Mental Health and Well-Being in Later Life which has been supported by Age Concern. The Inquiry findings draw on the views of nearly 900 older people and carers on what helps to promote good mental health and well-being in later life, together with the views of nearly 150 organisations and professionals. The Inquiry's recommendations recognise the importance of promoting the principles of fairness, respect, equality and dignity, taking into account

the diversity of the older population. This symposium will set out some of the recent thinking about the connection between environment and mental health issues and then present leading practice in legislation and programmes that have been developed as a result of a national wide ranging inquiry by strategic partners who advocate for the rights of older people. We are keen to stimulate debate within all sectors about how to turn rhetoric about mental health problems of older people into positive management in a much neglected area.

575. PURPOSE BUILT RETIREMENT COMMUNITIES GENDER, IDENTITY AND QUALITY OF LIFE

M.B. Bartlam¹, M. Bernard¹, J. Sim¹, S. Biggs² (¹*Keele University, Newcastle-under-Lyme, UK*, ²*King's College, Age Concern Institute of Gerontology, London, England; b.bartlam@keele.ac.uk*)

Retirement community living is a relatively new long-term accommodation and care option in Britain. In this paper, we look at issues around health, identity and well being for both older women and men living in such communities and ask whether, and in what ways, these environments meet the needs of different groups in terms of quality of life? More specifically, taking data from a three year longitudinal study in one such retirement community, we address the question 'What is the relation between gender difference and the difference gender makes?' We explore this in the context of the overall socio-demographic profile of the community, and the quantitative data on health, identity and well being. We present an analysis of the qualitative data to build a detailed picture of the complex relationship between gender and these three issues. Finally, we conclude by addressing the question 'does gender make a difference and, if so, in what ways?'

576. NECESSITIES OF LIFE MEASURING OLDER PEOPLE'S EXPERIENCES OF POVERTY

M.B. Bartlam, T. Scharf, J. Hislop, M. Bernard, J. Sim (*Keele University, Newcastle-under-Lyme, UK; b.bartlam@keele.ac.uk*)

The perceptions of many older people of what constitute the everyday essentials are extremely modest. People in some of the most disadvantaged sections of society expect very little of life and do not regard themselves as being deprived, or as living in poverty. In older age, as in their earlier life course, they made do with very little and accept the limitations dictated by their financial circumstances. There is a wealth of research conceptualising and measuring older people's poverty. However, such traditional methods have failed to adequately capture the experiences of those in marginalised sub-groups, not least because of a reliance on large sample sizes. This paper presents findings from a study which explored the development of alternative approaches to the measurement of older people's poverty. The research involved group discussions and individual interviews with older people belonging to a range of potentially disadvantaged groups within the UK: People aged 85 and over, People with a disability, Older people who are also informal carers, People of Bangladeshi origin, People of Irish origin, Gypsies and travellers, People living in rural communities, People living in institutional settings. The findings point to the need to take account of the diversity within ageing populations, and to the importance

of developing new approaches to the measurement of older people's poverty. It highlights key challenges for researchers and policy-makers.

577. DEMOGRAPHIC ASPECTS OF WORKFORCE AGEING IN RUSSIA

A.S. Bashkireva (St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; angel_darina@mail.ru)

Modern world demographic situation is characterized by an increase in mean duration of human's forthcoming life, reduced birth rate, increased specific weight of persons in old and senile age. Nowadays, according to WHO data, the number of persons aged 60 and older reached 590 million, and by the year 2020 this number will reach 1 billion, 700 million of which will be residing in developing countries. Sharp ageing of population and increase of chronic diseases during ageing reduce to expansion of money investment in programs of medical treatment of those in old and senile ages, and to upgrowth of benefit payment in social maintenance and provision of pensions with no tangible intention of repaying it to society. These demographic processes lead to essentially significant increase of the demographic load coefficient on the society, i.e. the nonworkers' number to the workers' number ratio, which complicate the economic circumstances and produce considerable structural changes in employment, public assistance and nursing care maintenance of disabled people. All this tremendously burdens those who work, i.e., first of all, persons who are in capable of working age, who are forced to increase their labour output and productivity, thus increasing the allocations to pension funds. Labour force mainly represents able-bodied citizens, which are fallen to the share of 59,3% in population of Russia. Only health support and premature ageing prevention in available labour resources will enable them to endure this burden under population ageing conditions. The United Nations Research Agenda on Ageing for the 21st Century, being initiated in 1999, is the real evidence of perception the gravity of this problem among world community. At the same time there is somewhat different medical-demographic situation in Russia, which is characterized by the birth rate decrease, death-rate increase for all determinant reason's classes, sharp premature mortality rise, extra-death-rate increase of able-bodied population from affected reasons (over 520 thousands people a year), the decrease in mean duration of human's forthcoming life. All these permanent factors in combination with the quantity increase of those in old and senile age may result in depopulation and working potential deficiency. Excess of death-rate on birth rate in 1,8 times in Russia is the most higher factor in the world. Regularities of changing the demographic indices, in the first place, age death-rates, have formed specific particularities of Russian population ageing, bound not only with increasing a share elderly (on a calendar age) people in consequence of reducing birth rate, as well as with biological ageing of those, formally not referring to categories of elderly, i.e. with reducing a labour potential to the account of the number not only, as well as to the account of qualitative condition of population. According to the state statistical data, in 2001 from 144,8 million inhabitants of Russia near 84,5 million person based in an able-bodied age. However, if total number of population of country for last 12 years is shortened on 5 million people more then, or on 4% nearly, the number occupied — on 12 million more

then, i.e. loss of persons of able-bodied age overtake losses of population as a whole. In particular, death-rate level of able-bodied population from unnatural reasons — accidents, poisoning and traumas, work-related as well, — at present corresponds to similar indices in Russia 100 years ago, and nearly in 2,5 times exceeds indices, registered in develop countries, in 1,5 times — in developing. Death-rate of able-bodied population exceeds a similar index in EU in 4,5 times. Analysis of gender differences in ageing- and death-rates in Russia has revealed an excess of men's death-rate in able-bodied age in 5–7 once in contrast with such beside women. In 2001 life expectancy of women has formed 72,3, men — 58,9 years. An unprecedented result is formed now in Russia — a break-up in average life expectancies between men and women more then in 13 years. Consequently, average statistical Russian man does not live till a pension age, i.e. dies, being at an able-bodied age. In accordance with the economical forecast of Russian state, trend to shortening a number of able-bodied population will be saved, and in nearest 10–15 years the number of workers will fall before 50,1 million person, herewith total losses of labour force for 2006–2015 will form more than 10 million person. Thereby, present medical-demographic situation in Russia, particularly at the conservation of existing death-rate level of able-bodied population, in sufficiently short term can bring about the real labour resources deficiency that, in turn, will be objective to prevent a creation firm financial, economic and industrial base of state, further economic development of our country and its gross national product growing. The data thus obtained show that health safety and work ability promotion in working population is a state problem and consists a lot of unsolved priority problems, one of which is premature and (or) accelerated ageing prevention. Decision of this problem requires elaboration and employment of the new approaches and modern technologies on principal for the quantitative ageing evaluation, raising work capacity and quality of life with reducing the real ageing rates in order to increase length of active able-bodied life. Quantitative ageing evaluation is a necessary part in the development of influence measures on the ageing process and must reflect a versatility and time variety of ageing in different organs and systems, individual ageing particularities of concrete person. At the same time actual problems of labour resources' ageing are characterized by an increase in the mean worker's age and in the number of elderly workers, by the existence of job categories, where accelerated professional ageing is observed, as well as early retirement from work before reaching the retirement age, which is due to the discrepancy between occupation requirements and functional capacities of the ageing organism. That is why changes related with ageing and occupational exposure, limiting work capacity and the scope of functional abilities in workers' organism, reducing reliability and increasing ageing rates, require timely correction by means of optimally selected geroprotectors. Extensive practical geroprotectors application in order to influence on fundamental biological mechanisms of human organism, that determine ageing rates, will allow prolonging human life on 15 years at the average. Further studies are necessary to define possibility of geroprotectors application and modern gerontechnologies use in gerontology and occupational health as preventive facilities and methods in maintenance of premature reduced work capacity, deceleration of worker's organism ageing and professional longevity increase.

578. ENDOTHELIAL PROGENITORS CELLS IN CENTENARIANS

G. Basile, C.Lo. Balbo, G. Coppolino, C. Nicita-Mauro, G. Maltese, P. Parisi, S. Loddo, M. Buemi (*University of Messina, Italy; basileg@unime.it*)

Centenarians despite the appearance of renal senescence, characterized by the diminution of the renal mass and glomerular filtration rate by about 50%, may often maintain a stable metabolic state without clear signs of renal disease. The discovery of molecular mechanisms for kidney function preservation in this small subjects' cohort could offer us new perspectives of intervention. It has been suggested that microvascular remodelling and adaptations to structural changes may contribute in these subjects to preserve residual glomerular filtration rate. Newborn vessels origin from stem cells, mobilized from bone marrow, and circulating in blood to the sites of vascular development. They were defined as endothelial progenitor cells (EPCs). So we tested the hypothesis that, centenarians respect to mild age patients with comparable GFR assessed by Cockcroft-Gault equation have a dissimilar mobilization rate of EPCs and this attitude could be responsible for an improved renal vascular reparative capacity. We quantified EPCs in blood samples of 25 centenarians (mean age 103 ± 2.4), without symptoms of renal disease and with a glomerular filtration rate (GFR) of 69.00 ± 7.60 ml/min, and of 25 patients (mean age 51.00 ± 13.70 yr) with stage 2 of chronic kidney disease according to NFK K/DOQI classification (GFR 70.00 ± 5.65 ml/min). Staining and analysis was performed using the ISHAGE (International Society of Hematotherapy and Graft Engineering) guidelines. EPCs were identified by the expression of cell surface antigens (CD34+, CD133+ and VEGFR2+) in direct three-color analysis. EPCs count was conducted using PROCOUNTTM (BD Biosciences) that is a multiparameter flow cytometric lyse no-wash method, performed in a TRUCOUNTTM tube (BD Biosciences). Using a FACSort (BD Biosciences) flow cytometer and based on the SSC/forward scatter (FSC) profile. Student's t-test was used to determine the statistical significance and Univariate correlations were made with Pearson correlation coefficient. CKD patients showed, markedly, a significant decreased numbers of EPCs respect to centenarians. EPCs number was directly correlated to GFR in centenarians while CKD patients lose this strict relationship. As far as the kidney is concerned, environment agents may influence the tissues damage in young and elderly people but genetic factors acts in single subjects extending the attitude to functional adaptations and preserving glomerular filtration rate. Continuous and sustained EPCs mobilization could probably represent a particular mechanism improving renal micro vascular reparation genetically developed in a limited number of subjects.

579. PRIORITY DETERMINATION OF MEDICOSOCIAL HELP TO RUSSIAN ELDERLY (ACCORDING TO OPINION POLL 2004–2006)

O.V. Belokogne (*Federal institute for organization and informatization of health services, federal agency for health and social development, WHO Collaborating Centre, Moscow, Russia; belokon@mednet.ru*)

The opinion poll concerned with elders life quality was conducted during years 2004–06 among the elders for seven Russian European areas (Moscow, Zhukovsky, Dubna, five villages of Moscow region, Kursk, Novgorod and Samara). The poll analysis permits to point at elders

groups of the social risk: functionally vulnerable — conditionally (limitedly) and absolutely (completely). The limited ability inherents to 57% of urban respondents and 40% of villages; the poor ability elders was revealed as 13% among urbans and 14% of villages. These are corresponding to the formal category of I-st disability groups. Now up to more 6% are registered documentary. Half of the completely disabled elders are dissatisfied by the health service in general and ignored any Center of social service. Meanwhile, up to 14% of elders are openly needed carehouse residence. Up to 50% others among the respondents prefers to be at home care. Moscow elders are champions in the social care needs. The second place gains villages. The third place — elders in Kursk city. The cross-impact method was applied to estimate needs to have the real elderly care. The expert responds to elements of the «scenario-matrix», where 12 columns correspond to the possible abilities of elders, and lines — to the realistic cares, compensating the corresponding disability. This matrix is the special example of the «morphological box» for assessment the set of an elementary scenario consisted in combinations of «needs and resources», or «goals and means». The assessments obtained by our analyses of the expert option were useful in ranking (by importance) the realistic practical means: 1. The reform of home economics («ЖКХ»); 2. The work in graduated sphere; hobby; religions; mode of life (i.e. sport, tourism); 3. Addition to pension; 4. Re-qualification; 5. New legal rules; 6. Providing with medications; 7. «122 law» of monetization. The four most important relevant factors of the Russian elderly life quality were revealed: insidefamily relations 97%; material well-being 60%; social help accessibility 78%; medical care accessibility 66%. Basic scientific-practice significance of obtained results are: more realistic accentuation in russian elderly national politics, indication on the urgent shift activity of medical organizations, instances and the central social organizations, based on the statistics of the elders functional abilities (by our newly designed questionnaire) and also on the correct generalization of competent expert opinions — for the sake of the new effective elderly attentive laws, directives and statements.

580. A «WIN-WIN MODEL» OF MOBILE DENTAL TREATMENT FOR DISABLED ELDERLY

Y. Ben Moshe¹, A. Garfunkel², D. Chayim² (¹ESHEL, ²The Association of Oral Health; yosefa@jdc.org.il)

Dental treatment for the elderly is one of the most neglected areas: dental treatment is not included in the obligatory health insurance, treatment is expensive (one third of the elderly in Israel are defined as «poor»), and oral health is not perceived by the elderly as an indicator of wellness. The most deprived are the disabled elderly, especially the home bound or bedridden in institutions. The association of Oral Health is an NGO that was established by a group of dentists with the assistance of ESHEL, the Association for the Planning and Development of Services for the Aged in Israel (NGO). The dentists organized the professional aspect of the service — mobile treatment with medical supervision. ESHEL provided the equipment and the platform of consumers. The treatments included: root canal treatment, extractions, full dentures (lower and upper), fillings, scaling and dental hygiene and screening for oral cancer. The aim of the Association of Oral Health is

to provide high quality treatment at low prices to disabled elderly all over the country. The policy and prices are fixed by a public steering committee with members from the Ministries of Health, Welfare, the National Insurance Company and ESHEL. The service is recognized as the only mobile public dental clinic in Israel. In order to lower the expenses, the service treats elderly in institutions or organized places (like day care centers, clubs, etc.) during the morning and homebound during the afternoon. To date, the Association of Oral Health operates 3 cars with 15 dentists and assistants in the central, southern and northern areas of Israel. During the first year of operation, the main users of the service were elderly referred by local social services who could subsidize the treatment for the needy. The service depended mainly on the existence of public funds for the needy. In order to make the service financially self supportive, several reinforcing actions were initiated by ESHEL: financial resources were pooled from interested public partners in order to fund a dental laboratory for the Association of Oral Health (to lower the expenses). Radio commercials were broadcast for short periods in order to publicize the service. In the sixth year of operation, the service is financially self supportive with only 40% of the customers referred by the social services. During 2006, 2019 elderly were checked and needed treatment. 1626 were treated, 894 in their homes. Overall, during six years of operation, 4990 elderly were treated.

581. TRANSITION TO RETIREMENT: BEHAVIORAL VALUES AND STRATEGIES IN THE CONTEXT OF SOCIAL TRANSFORMATIONS

N. Bexaeva, M. Elutina, T. Temaev, A. Smolkin (*Saratov state technical university, Russia; 006023@saronline.ru*)

The study of value guiding lines of people of pre-retirement and retirement ages gives the opportunity to point out the degree of adaptation to new social circumstances. The methods of multiple data were used for getting the information, including: 1) statistics; 2) surveys 3) informal interviews. The objective of the study is to analyze the subjective component of transition to retirement in the context of social and gerontological risks. (1) The research analysis shows that people of preretirement and retirement ages though demonstrating ambiguity in perception of values, have similar social characteristics formed by socialist system. The priorities for them are job, family, friends, health, kindness, freedom and security. (2) The research analysis states a high degree of anxiety during the transition period. The transition to retirement is perceived as a period overwhelmed by all kinds of anxiety and uneasiness. 1. Anxieties connected with the reduction of income, decline in living standards, impossibility to continue professional activity. 2. Anxieties with the possible actions from administration — possible demotion, reduction of the staff, emotional and psychological pressure from the direction of younger workers. 3. Anxieties connected with interfamily relations — strained marital relations, the threat of conjugal infidelity, redistribution of family duties. 4. Anxieties connected with health, appearance, physical and psychological degradation. 5. Agitation, nervousness, confusion connected with retirement confirmation, civil rights violation, and demonstration of unlawful actions. 6. Anxieties connected with existing negative stereotypes of gerontological group, and with the risk to get a social «stigma». (3) The congestion of anxious expectations cannot but adversely affect the choice of strategies (micropractices) of

adaptation to the new circumstances. We point out three possible strategies: «a snail effect», «a showy activity», «critically aligned model of behavior».

582. INTERNATIONAL AND NATIONAL POLICY TOWARD BABY-BOOMERS AND POPULATION AGEING SOME IMPLICATIONS FOR SOCIAL WORK

S. Biggs (*Institute of Gerontology, King's College, London, UK; simon.biggs@kcl.ac.uk*)

This paper includes a genealogical comparison of social policy toward older people with a specific emphasis on the baby-boomer cohort. Social policy at an International, Regional (EU) and UK level will be drawn upon to critically examine how definitions of older age are changing and the degree to which this is linked to assumptions and moral panics about the boomer cohort itself. It is suggested that at each level the purpose of policy toward an ageing population has shifted in focus, away from particular social hazards to constitute an attempt to re-engineer the meaning of legitimate ageing and 'well-being' in later life. Factors that coincide with this trend include: A downward drift of the age associated with 'older people', an attempt to re-define dependency ratios, a blurring of distinctions between different stages of life course development. It is perhaps ironic that the generation who hoped to die before they grew old, now finds itself classified as 'older' ahead of time. The implications for work-life balance and intergenerational relationships will have significant effects for social work as the aspirations and cultural associations with the baby boomer cohort have influenced the policy approach that has been taken.

583. METHODOLOGICAL ISSUES IN ESTIMATING THE PREVALENCE OF ELDER ABUSE

S. Biggs (*Kings College London, UK; claudine.mccreadie@kcl.ac.uk*)

Estimating accurately the prevalence of the abuse and mistreatment of older people presents researchers with a significantly demanding methodological challenge. Recently issued findings from the United Kingdom survey of the prevalence of elder abuse provide evidence of some of these challenges — in the field of definition, response, validity and reliability, of the ways in which they were addressed and the success of those strategies.

584. SOCIAL AND CULTURAL CONSTRUCTIONS OF AGEING: THE CASE OF THE BABY BOOMERS

S. Biggs¹, C. Phillipson², R. Leach², A. Money² (*¹King College London, UK, ²Keele University, UK; s.a.allen@vco.keele.ac.uk*)

A variety of interpretations can be placed upon the idea of the 'baby boom' generation. From a demographic perspective, attention is focused upon the rise in the birth rate immediately following the end of the Second World War. The trend varied across countries: Finland and France, for example, had a relatively compressed surge in birth rates following demobilization, this coming to an end at the beginning of the 1950s. Other countries (e.g. Australia and the USA) experienced a longer period of increasing birth rates — from the mid-1940s to the mid-1960s. The UK had a distinctive pattern of two separate peaks in the birth rate in 1947 and 1964. In comparison, Germany experienced no real baby boom and only a moderate increase in the birth rate in the early sixties. From a sociological perspective

tive, boomers might be seen to have experiences that set them apart from previous generations. Giljeard and Higgs (2002) view them as a 'mid-century generation' who set a 'new and distinct course through adult life, one marked by change, challenge and transformation'. Edmunds and Turner (2002) suggest that in the UK the boomers were a 'strategic generation' in aesthetic, cultural and sexual terms. From an economic viewpoint, boomers have been linked with growing instability in pension arrangements, with claims for new social divisions arising from a large cohort entering retirement (Koltikoff and Burns, 2004). A key question concerns the way anxieties surrounding boomers are being constructed and the options for the future of ageing they might suggest. This paper is part of a larger project examining the characteristics of the boomer cohort, combining in-depth interviews, secondary data analysis and examination of media and cultural representations. The discussion in this paper examines the origins and characteristics of social and cultural constructions of the boomer generation. Drawing upon a range of popular and academic material, the paper provides a classification of the main characteristics associated with the boomer generation. Understanding the way in which ideas about 'baby boomers' are constructed is important for deepening our understanding about the way in which society responds to population change, its views about the possibilities and potential of such change, and the range of images which group such as boomers can draw upon for their own assessment of this period. The paper concludes with a research agenda for further studies of the 'baby boom' generation.

585. THE PREVALENCE OF ELDER MISTREATMENT AND ABUSE IN THE UNITED KINGDOM

S. Biggs, C. McCreddie, J. Dixon, M. Doyle, B. Erens, A. Hills, J. Manthorpe, M. O'Keefe, A. Tinker (*Institute of Gerontology, King's College, London, UK; simon.biggs@kcl.ac.uk*)

The research, a collaboration between King's College London and the National Centre for Social Research, explored the life experiences and well-being of people over 65 living in their own homes in the United Kingdom, in order to discover the extent of mistreatment and abuse. This is the first time a representative prevalence study has been undertaken in the UK and includes both quantitative and qualitative data. The two year research project, which began in August 2005, involved face to face survey interviews with 2000 older people. Findings will be presented on the numbers of people suffering from mistreatment including neglect, and financial, physical, psychological, physical and sexual forms of abuse. The characteristics of perpetrators will also be presented. Finally, we will discuss some of the implications of the study for the definition of mistreatment and the relationship between quantitative and qualitative approaches to this sensitive area of research.

586. WE LIVE TEN YEARS LONGER HERE. A NARRATIVE ANALYSIS OF RETIREMENT LIFE IN SPAIN

A.L. Blaakilde (*Danish Institute of Gerontology; blaakilde@mail.dk*)

The utterance above is a kind of motto among retired Danish migrants in Spain, expressed also by Norwegian pensioners (Helset 2000). The motto is never possible to verify, but it is loaded with cultural significance. The

ten years longer life is referring to connotations about a healthy and active life, a social life, a joyful and hedonistic life in the sun; in other words a life which combines the shangri-la-like living in a holiday resort with the autonomous, independent and invisible phase of life that modernity has construed of old age, free from work and responsibilities. The few responsibilities of retirees are to keep healthy, stay active and to live as long as possible without costs for society and relatives. Hence, the motto is an expression of fulfilling the expectations connected to a common age discourse. There are few cultural positions assumed for elderly people in Denmark; they are expected to be either weak and paternalized, or to be willing to work voluntarily for family and society. When emigrating from Denmark the migrants are considered fleeing from family responsibilities, and since migrants pay lower taxes in Spain than in Denmark, they are also accused of being tax exiles by Danes in Denmark. In these two ways, the autonomous behaviour of the elderly migrants is representing revolt against certain age discourses, and since revolt is not an expectation related to old age, they are indeed performing an age revolt by choosing a migrant life. In this context, the motto serves as a response to soften the confrontation, created by their old age revolt: The migrants try to legitimate their revolt by narrating their lives into an accepted discourse for old age; their lives on Costa del Sol is healthier than in Denmark and thus cheaper for society.

587. THE ASSOCIATION OF SOCIAL TIES WITH DEPRESSIVE SYMPTOMS AMONG THE OLD-OLD IN FOUR COUNTRIES: THE CLESA PROJECT

T. Blumstein¹, A. Chetrit¹, J. Gindin¹, D.J.H. Deeg², M.V. Zunzunegui³, M. Jylha⁴ (¹The Gertner Institute for Epidemiology & Health Policy Research, Chaim Sheba Medical Center, Tel Hashomer, Israel, ²VU University Medical Centre, EMGO-Institute/LASA, Amsterdam, The Netherlands, ³University of Montreal, Canada, ⁴School of Public Health, University of Tampere, Finland, tzviabl@gertner.health.gov.il)

The aim of the study is to assess differences and/or similarities in the association of social ties to depressive symptoms among elderly aged 75–84 in the Netherlands, Spain, Finland, and Israel. The study base was the Comparison of Longitudinal European Studies on Aging (CLESA) which includes data from aging studies in Finland, Israel, Italy, The Netherlands, Spain and Sweden. The current analysis comprised 2300 participants from four countries aged 75–84 whose harmonized data base includes items on social network, social support and a depressive symptom scale. The associations of social factors with depressive symptoms were tested by a set of ordinal logistic regression analyses for each factor, separately for each country controlling for age, educational level, number of chronic diseases, ADL and IADL. The significance and strength of cross-country comparisons were analysed through the G-statistic and Dyer approach. The results indicate that structural elements of the social network (living arrangement and proximity of children) were homogeneously related to depression in the four countries. Those who lived with a spouse as compared to those who lived alone had significantly fewer depressive symptoms across countries when the data were pooled ($b = -0.66, p < 0.05$). Across countries, those whose children lived far away had significantly more

depressive symptoms than those who had children living nearby (0.31, $p < 0.05$). Functional elements of social network (emotional support, monthly visits from children and having friends) were found to have differential associations with depressive symptoms across The Netherlands, Spain and Israel: those with emotional support from children had fewer depressive symptoms in Spain but not in the Netherlands or Israel. Only in Israel those without at least a monthly visit from children had significantly more depressive symptoms. Social engagement, measured by religious activity and participation in a senior day center, were associated with lower depressive symptoms homogeneously across countries with significant findings for religious activity in the pooled analysis. These findings emphasize both universal and cultural specific context of social ties. It seems that social isolation, as measured by 'objective' structural aspects, operates via direct effect and is related to more depressive symptoms across socio-cultural groups. In the same venue, social participation such as religious activity is related to less depressive symptoms across countries. On the other hand, functional aspects of social relationships (i.e. perceived support) may operate through stress-buffering mechanism and therefore does not relate in the same way to depression across countries.

588. SOCIABILITY AS A FUNDAMENTAL NEED FOR THE ELDERLY SUCCESSFUL ADAPTATION

A. Bojan, R. Enache (Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; ADEBOJAN53@yahoo.com)

This study carried out in a sample of 102 elderly aged between 62 and 89 years (mean age 73 ± 4 years) investigates ways in which a set of twelve socio-demographic variables and personality traits have influence on efficiency of elderly socio-psychological adaptation. The latter noted efficiency was evidenced by results when scoring for items of the personality test Philip Carter proposed with regard to wellness/contentment/satisfaction with life. Elderly received individually half -guided interviews along with questionnaires in view of collecting socio-demographic and socio-psychological information as well as two personality tests (sociability test Dr. Gh. Aradavaoiaice and Dr. St. Popescu (2002) formulated and test of contentment Philip Carter (2004) also designed. One aspect we showed was that primarily sociability and then health status statistically and significantly have influence on wellness-contentment indicating extent of socio-psychological adaptation. On the other hand, from the viewpoint of influencing the health status, the variable which resulted as placed firstly is the same sociability. We may say that for this age group, sociability as a fundamental human need and personality traits have accounted for health status and state of satisfaction with life, both sensitive indicators of an efficient adaptation. Another two variables that point toward successful adaptation of older people, are life quality and self-esteem statistically and significantly influenced by higher education achievement/educational level. Taking into account the strong significant correlation between sociability and educational level, we have noted that in elderly, these two variables concerning the social field of human relations have a dominant influence on efficiency of their adaptation.

589. LESSON LEARNED FROM PARTICIPATORY ACTION RESEARCH ON A HEALTH PROMOTION PROGRAMME FOR THE ELDERLY IN THAILAND

W. Boonchalaksi, P. Muensakda (Institute for Population and Social Research, Mahidol University, Salaya, Phutthamonthon, Nakhonpathom, Thailand; prwbc@mahidol.ac.th)

The objectives of the study are 1) to assist the elderly in rural Thailand with good physical and mental health, longevity and happiness, 2) to research and develop a health promotion programme for the elderly through collaboration with health-center staffs at sub-district level in Thailand, and 3) to promote and develop health centers at the sub-district level to become main supporters in health promotion for the elderly in the rural areas. The participatory action research was used to assess the effectiveness of community-based interventions in implementing a health promotion programme for the elderly. Four health centers at sub-district level in Kanchanaburi province in Thailand were selected and qualitative techniques were employed. Through the use of a systematic approach and attentive evaluation, the health promotion activities found to be appropriate, consistent and responsive to the demand of the elderly. The results from the evaluation at the end of the project covered 400 elderly samples indicated that more than 90 per cent of the elderly were satisfied with the activities and had good attitudes toward the programme. They wanted to prolong the programme and needed not to change any activities. Changing in their health behavior were also found, the elderly came out to jog along the village's roads in the morning and were no longer shy to exercise at home. These had never happened before. Moreover, the main outcomes of the programme were the setting up «elderly group» and «elderly club» at the four sites. This indicated the empowerment of the community and the local administration offices at all sites agree to provide financial support for the programme in the consecutive years. The lesson learned from the study is good health would reduce the expenses to be paid for the medical treatment and stimulation for self health care should be promoted in both rural and urban areas because good health would bring happy life which in turn resulted in the happiness of the family and the community as well.

590. LAY PERCEPTIONS OF SUCCESSFUL AGEING

A.P. Bowling (University College London, UK; a.bowling@btinternet.com)

This paper reports results from the first British survey of lay views of successful ageing. The main aim of the research was to identify perceptions of successful ageing among people in middle and older age groups. The method was a British population survey of 854 community-dwelling men and women aged 50 or more. Just over three-quarters of respondents rated themselves as ageing successfully ('very well' or 'well'). Respondents' definitions of successful ageing, and the reasons given for their self-ratings, based on open-ended questioning, illustrated the multidimensionality of the concept. Definitions also varied with respondents' characteristics. Self-rated health status and quality of life consistently retained significance in the multivariate models of predictors of self-rated successful ageing, while self-rated quality of life made the greatest contribution to the models. Reporting a longstanding, limiting

illness was not significant. The overall models explained about a third of the overall variation in self-rated successful aging. Lay definitions of successful ageing were multidimensional, questioning the validity of narrow biomedical models. A biomedical perspective of successful ageing, then, needs a balancing with a psycho-social perspective, and vice versa. This is particularly relevant for those approaches which have largely ignored the rich tradition of social and psychological research on this topic. Self-rated successful ageing should be included in measuring instruments to enhance social relevance. This research, with the use of open-ended questioning, makes a novel methodological contribution to the literature, is unique in questioning middle aged as well as older people, and provides a British perspective on a largely US and German topic.

591. PROMOTING ACTIVE AND AGING COMMUNITIES

J. Bowman (*Center for Active Aging and Retirement — Coastal Carolina University, Conway, United States; jbowman@coastal.edu*)

Active Adults Bring New Expectations. With more than 10,000 American baby boomers reaching age 50 each year, comes a shift in the mindset of how these primarily active adults are defining their middle and later years. Most will say they will never grow old and that their retirement from the labor force is out of the question. In comparison to previous older generations, aging boomers tend to be more highly educated, wealthier, and healthier. They expect and will pay for services to help them remain self-sufficient and independent as long as possible especially within their own homes and communities. While census projections indicate growing numbers of aging populations, the south-east region of the United States is experiencing exponential growth of aging boomers and retirees relocating to the area. In fact, South Carolina ranks as the sixth most popular destination for retirement in the United States. Moreover the Myrtle Beach, South Carolina region is leading the state with the in-migration of active adults relocating in the area. *The Study.* In order to address the likes and dislikes of the thousands of new retirees moving into the region each year, the Center for Active Aging and Retirement conducted a research study. One thousand residents 55 years of age and older responded to the survey. Major factors that attracted the active adults to the region were the weather, social relationships, recreational amenities and entertainment attractions, the beach and ocean, and economic factors such as lower property taxes. Major dislikes consisted of a lack of master planning for the infrastructure of the region including transportation problems, especially with traffic congestion; followed by high cost of living and high insurance rates; another was the rapid growth and development in the region that was damaging the environment and beauty of the region. When asked to rate their overall quality of life here on a scale of 1 (very poor) to 6 (excellent), the survey respondents were over all pleased as indicated by the high rating of 5.41. *Implications.* The Center for Active Aging and Retirement is working closely with economic developers, chambers of commerce, healthcare providers and community developers in planning smart communities that enable persons of all ages to remain independent and active within their homes and within their communities. Examples of how the Center is working with the business community in promoting active aging within the community will be provided to participants.

592. A RANDOMIZED CONTROLLED TRIAL OF A PREVENTIVE PRIMARY CARE NURSING INTERVENTION TARGETING HIGH RISK OLDER ADULTS

K. Brazil¹, J. Ploeg¹, B. Hutchinson¹, J. Kaczorowski¹, C. Goldsmith¹, D. Dalby², W. Furlong¹ (¹*McMaster University, Hamilton,* ²*Wilfred Laurier University, Waterloo, Canada; brazilk@mcmaster.ca*)

The aging of society, rising health care costs, and the shortage of health care resources have created challenges in the provision of high quality, comprehensive care for older adults. The literature has suggested that a preventive approach based on identifying individuals at risk and providing early intervention can prevent functional decline, promote independence and reduce health costs. Similar interventions have been evaluated but studies have not rigorously examined the impact on quality of life and use and costs of health and social services. The goal of the Preventive Primary Care Outreach Project was to evaluate the effectiveness of a nursing intervention provided to high risk community-dwelling adults aged 75 years and older on: (a) health-related quality of life, (b) use of health and social services and associated costs, (c) functional status, (d) mortality, and (e) self-rated health. 719 older adults (mean age 81 years) were randomly allocated to the intervention (n=361) and the control (n=358) group. Participants were screened using the Sherbrooke Postal Questionnaire (score of 2 or more) and recruited through their family physicians. Seniors in the intervention group were visited by nurse case managers who conducted a comprehensive assessment using the RAI-Minimum Data Set for Home Care and Client Assessment Protocols at baseline, 6 months and 12 months. Nurses worked with participants, families, informal care providers and family physicians to plan and implement a range of preventive interventions. There were no statistically significant differences between intervention and control groups on: (a) health-related quality of life scores (HUI3) and Quality Adjusted Life Years, (b) functional status, (c) mortality (10 persons died per group), and self-rated health. Results related to use and costs of health and social services will be discussed. In conclusion, there is insufficient evidence to justify widespread adoption of this intervention with this population of older adults.

593. PAIN AND MOBILITY IN LATER YEARS: FINDINGS FROM THE ENGLISH LONGITUDINAL STUDY OF AGEING (ELSA)

E. Breeze (*University College London; e.breeze@ucl.ac.uk*)

Background: Perceived pain is likely to impact on several aspects of daily life; the first limitation arising from pain in the back or lower limbs is expected to be on mobility. Sample: 8250 people aged 50 and over in England in 2002, taking part in the first two waves of fieldwork of the English Longitudinal Study of Ageing. *Methods:* Changes over a two year period in two self-report and one objective measure of walking ability are assessed according to the number of sites in which respondents reported severe pain, using logistic regression. Smoking status, BMI, diagnosed arthritis, angina and MI, symptoms of depression and anxiety, cognitive function measures, wealth, and working status were considered as possible confounders. *Results:* Severe pain (scored 6 or more out of 10) was reported in 3 or 4 of knee, back, hip and foot by 2.7% men and 5.0% women in the sample; higher percentages of younger than

older men reported this. It was most common among people who reported being permanently sick or disabled, with a diagnosis of arthritis or angina and with higher BMI. It was least common among those with good memory or no depressive symptoms or greater wealth. The associations between number of sites and deterioration in self-reported walking ability were weaker among those aged 70 and over than among younger people. Odds ratios for transitions compare 3–4 sites to none and are adjusted for sex, age, and the main confounders. For transition from reporting no or some difficulty with walking $\frac{1}{4}$ mile to much difficulty or being unable to do so the odds ratios were 29 (95%CI 18,47) among the younger, and 8.2 (3.7, 18) among the older, people after adjusting for depression and wealth. For transition to having difficulty in walking 100 yards the equivalent odds ratios were 32 (20, 53) and 6.7 (3.5, 12.8) after adjusting for depression. Gait speed was measured among people aged 60 and over. The equivalent odds ratio for change from a gait of at least 0.5 m/sec to slow gait or being unable to do so was 6.8 (3.4, 13.6) after adjustment for BMI and depressive symptoms ($n=3800$). The odds ratios increased with number of sites but not in a log-linear fashion for the self-report measures. *Conclusion:* Pain at multiple sites greatly increases the chances of deterioration in walking, especially in young old age. Depressive symptoms account for some of this.

594. COHORT DIFFERENCES IN SOCIAL PARTICIPATION OF THE YOUNG OLD: THE IMPACT OF CAPACITIES, CONTEXT AND NORMS

M.I. Broese van Groenou, D.J.H. Deeg (VU University, Amsterdam, the Netherlands, VU Medical Centre/LASA, Amsterdam, the Netherlands; mi.broese@fsw.vu.nl)

Nowadays people speak of the 'new' generation of young old that should be healthier and more socially active compared to the earlier generation. Using data from the Longitudinal Aging Study Amsterdam it was examined to what degree this is true. The study compared the social participation level of 55–64 year olds in 1992 and the same age group in 2002, and examined to what degree differences in participation were due to cohort differences in individual capacities (level of education and health), social context (paid employment and partner status) and norms (religious involvement). Descriptive analyses showed that the younger cohort was more actively involved in voluntary organisations and participated more often in cultural and recreational activities compared to the older cohort. In addition, the younger cohort was more highly educated, reported more functional disabilities, more often hold paid jobs, and were less religiously involved compared to the older cohort. No cohort differences were found with respect to the proportion of single persons. Multivariate logistic regression analyses showed that the higher level of social participation of the younger cohort was mainly due to the higher level of education, but that this effect was reduced by the larger disability and lower religious involvement of the younger cohort. Job and partner status did not explain the cohort differences in social participation. It is concluded that the current young old are more socially active and higher educated than their predecessors. Their (somewhat) worse health status, however, asks for a more nuanced image of the 'new' young old.

595. THE USE OF INFORMAL AND PROFESSIONAL CARE BY OLDER PEOPLE LIVING ALONE IN THE UK, ITALY AND THE NETHERLANDS

M.I. Broese van Groenou¹, K. Glaser², C. Tomassini³
(¹VU University, Amsterdam, The Netherlands, ²Kings College, London, UK, ³University of Molise, Campo Basso, Italy; mi.broese@fsw.vu.nl)

Due to cultural and demographic developments, the number of persons living alone is increasing in all western societies. Persons living alone face more problems receiving informal care when health problems arise in old age and are more likely to depend on professional home care. The marital history in part reflects the availability of informal carers, as the never married and divorced singles are known to have smaller personal networks compared to widowed elderly living alone. This study examines the use of care from informal and professional sources by older people in one-person households in three European countries: the United Kingdom, Italy and the Netherlands, all participating in the FAMSUP network on family support for the elderly. Data are used from national representative samples on older persons aged 65 or higher. In all countries, the majority of the divorced elderly used no care at all (63% in the UK, 72% in the Netherlands and 90% in Italy), whereas singles and widowed were more likely to use informal and/or professional care. Logistic regression analyses showed that differences in use of care by marital status varied across countries. In the UK and the Netherlands, the divorced received significantly less professional care than the widowed, even after adjustment for gender, age, socioeconomic status and disability, but differences in the use of informal care were only found between the never married and the widowed in the UK. In Italy the never married and the divorced received less often informal care compared to the widowed, but no differences were found regarding the use of professional care. Pooled data showed no significant interaction-effect between country and marital status on the use of informal or professional care. It is concluded that in all countries widowed elderly are more likely to receive either informal or professional care, than the never married and the divorced. Results are discussed with respect to the long term social consequences of divorce, and the national differences in attitudes and policies on care provisions for the elderly.

596. COHORT COMPARISONS OF HEALTH AND SOCIAL RELATIONSHIPS IN THE LONGITUDINAL AGING STUDY AMSTERDAM

M.I. Broese van Groenou, D.J.H. Deeg, T.G. Van Tilburg, E. Hoogendijk (VU University, Amsterdam, the Netherlands; mi.broese@fsw.vu.nl)

Demographic as well as cultural developments in the past decennia have led to a generation of young elderly with different characteristics compared to their predecessors. These characteristics are not all benefiting the level of social participation and the health status of the young elderly. In the Netherlands, the new generation of older adults is more highly educated, but the hours of paid employment have increased and family size and religious involvement has decreased. In addition, there is evidence suggesting that the new generation of older people reports a less healthy lifestyle than the former generation.

597. ENVIRONMENTS FOR GOOD AGING

J.E.M.H. van Bronswijk¹, J.L. Fozard² (¹*Technische Universiteit Eindhoven, the Netherlands*, ²*University of South Florida, Tampa, USA*; j.e.m.h.v.bronswijk@tue.nl)

Growth, development and aging essentially describe the same process: the biological and psychological aspect of a life course. In addition to DNA and other aspects of heredity, environments play a leading role in the course of life. It is a human trait to use technology for altering environments to live in. Technology generations of the past focussed mainly on reducing mortality. They have been named after their new technological inventions, such as Stone-age, Bronze-age, Iron-age and the Industrial revolution of the 17th century in England propelled by the steam engine. These inventions provided more and better food and shelter, but in the end led to higher infection rates due to crowding and an enormous increase in newborn and child mortality. Together with the emergence of the mechanical-electrical technology generation in the Western World around the turn of the 19th into the 20th century the hygienic problems were solved step by step, and child mortality due to environmental causes became almost negligible. It appeared, however, that after World War II the resulting increase in life expectancy included more and more non-vital years burdened with chronic conditions due to environmental factors that caused a varied pace of aging of the different organs and systems such as lungs, brains, locomotory and circulatory systems. A decrease of quality of life and an increase in costs of care became the results. As people age, the interaction between them and their environment strengthens. At any point of time, the person-environment interaction may be analyzed using the well-known human factors approach. The medical profession called for an analysis focussed on the compressing of morbidities into only a few weeks or months before death occurs. This is the foundation of designing wise environments for good aging. Gerontechnology took as its aim to supply these environments supporting compressing of morbidity of chronic conditions to the end-phase of life; in addition to the reduction of mortality that has been technology's reason of existence from the beginning. Providing such environments from cradle to grave calls for intelligent coaching services, as well as home automation and robotics technology for environmental control. And of course, we will need more research to provide extra knowledge of impact, target, intervention site and intervention type for each single technology and technology system to be installed. Built environments will become smart. Interestingly both the currently young and old German citizens expect smart houses to be practical, comfortable and secure. However, around 20% do believe the technology will not work, while 10% fears to loss control of his/her own live, and only 5% is really afraid of these innovations. What is just clever, smart or wise about environments for good aging depends not only on the needs and abilities of each individual, but also on acceptability of the technology offered. The Italian designer Stephano Marzano therefore proposed to let these new technologies behave as well educated maids, valets and butlers to improve living environments. Speaking the modern language of ambient intelligence, the next technology generation where compressed morbidity has been environmentally supported, will describe a domestic environment for good aging as a desirable community with

cottages containing kitchen, bathroom, living room and 3 bedrooms, with each about 100 butlers built-in for leisure, support and education.

598. MORTALITY IN OLD AGE IN RELATION TO SELECTED LIFESTYLE FACTORS

P. Brzyski, B. Tobiasz-Adamczyk, M. Kopacz (*Jagiellonian University Medical College*; mylisy@cyf-kr.edu.pl)

Introduction: In the perspective of –life course approach,» one may assume that certain cohorts of older people earlier subscribed to a lifestyle not geared towards health as a value. This can be found in efforts to explain mortality difference among Western and Eastern European men. *Aim of the study:* This presentation is based on an 18-year longitudinal study of mortality among elderly residents of Kraków. The aim was to assess the role of the different elements of lifestyle as a predictor of mortality. *Materials and methods:* Cross-sectional epidemiologic and sociomedical studies were performed in 1986/87 on a random sample of older persons aged 65 years and over, resident in the Old Town area of Kraków. The study was performed using a structured questionnaire gathering demographic data, information on self-reported chronic diseases, current and previous lifestyle, occupational activity, marital status, living conditions, everyday activities and leisure time activities, self-rated health status, and attitudes towards positive health behaviors. 2605 individuals were involved in this cross-sectional study. Over 18 years, their vital status was monitored and mortality (all causes) was systematically analyzed. Mortality patterns were analyzed in relation to select lifestyle elements using uni- and multidimensional Cox proportional hazard model. *Results:* During the 18-year study period, 67.2% (N=1751) of the study population died, this includes 674 men (74%) and 1077 women (63%). Statistical analysis found mortality decreased for men with a higher activity level (HR=0,91, 95%CI=(0,84; 0,98)), as measured by the recreational activity scale. Mortality increased for men who currently smoked (HR=1,51, 95%CI=(1,22; 1,87)) and had vary low BMI (HR=1,71, 95%CI=(1,20; 2,43)). Among women, the risk of mortality was lower for those with a higher activity level, measured using both functional (HR=0,89, 95%CI=(0,80; 0,99)) and recreational (HR=0,88, 95%CI=(0,81; 0,96)) activity scales, and higher for those who smoked (HR=1,54, 95%CI=(1,19; 2,00)). *Conclusions:* The results of this study allow for the following conclusions: (1) An active lifestyle was a significant predictor for reducing the risk of mortality in both men and women. (2) Unhealthy behaviors, such as continuing of smoking in older age, were found to be an independent predictor increasing the risk of mortality in both men and women.

599. SOME DEMOGRAPHIC CHARACTERISTICS OF RUSSIAN SCIENTIFIC ELITE IN 20th CENTURY

A.L. Bulyanitsa¹, V.G. Berezkin² (¹*Institute for Analytical Instrumentation of RAS, St.Petersburg, Russia*, ²*A.V. Topchiev Institute of oil-chemical synthesis of RAS*; lavrovas@yandex.ru)

It is well known, that scientific elite has significant role in the modern society's life. In this reason, the estimation of the different demographic characteristics of Russian scientific elite is the famous actual task. The authors estimated

demographic life characteristics for full and corresponding members, which was elected to the Russian Academy of Sciences (RAS) in the 20th century, and determined the relationship between their birth and death dates. The following demographic characteristics and relationships of the RAS members have been defined: a) The average length of life for full RAS members is 75 yr, for corresponding members 72.1 years. b) The average length of life of full RAS members after election is 16.6 yr and that for corresponding members is 17 yr. c) The average age of election for the Academy is 58.4 yr for full members and 55 yr for the corresponding members, d) the proportion of women among the members of the Academy is very small (2%). These characteristics were used to analyze the social status of the group, which represents potential academic elite, and to evaluate changes in that status caused by the fact of election for the Academy. It has been found that the average, maximum and minimum ages of election for the Academy actually coincide with respective characteristics of Nobel Prize winners (this result was presented at [1]). However the life length of the latter after being awarded is significantly greater, over 3 yr, than that of full RAS members after being elected. It is interesting that proportion of women among the Nobel Prize winners is also very small (3.2%) [1]. It is shown that a week's period within ± 3 days of the birth date for the members of Academy is characterized by a much higher mortality level exceeding the average one by about 60%. A similar tendency was shown earlier [2] for the eminent persons of the world community in literature, science, business and politics of the 18th-20th centuries. The next relationship was determined: the mortality level in the half-year period *after* the cyclic birth date significant (near 15%) increase analogical level in the half-year period *until* the birth date. This law can be interpreted as the «after-action» (or «consequence») of the birth date is more powerful risk factor than «presentiment» of this date. *References:* [1] V.N. Anisimov, A.I. Mikhalski. Are Nobel prizewinners getting older? Mathematical analysis of age and life span of the Nobel prizewinners, 1901–2003 // *Adv. Gerontol.*, 2004.6Vol. 15.6P. 14–22. [2] V.G. Berezkin, A.L. Bulyanitsa, D.B. Arkhipov. Some Demographic Characteristics of Elite Part of Society (XVIII–XX centuries), M.: Flinta, 2006.660 p. (in Russian).

600. WORLD WAR II VETERANS' PERCEPTIONS OF SOCIAL SUPPORT AND RELATIONSHIP TO NARRATIVE COHERENCE OF WAR MEMORIES

K.J. Burnell¹, P.G. Coleman¹, N. Hunt² (¹University of Southampton, UK, ²University of Nottingham, Institute of Work, Health and Organisations, Nottingham, UK; Karen.Burnell@soton.ac.uk)

Aim: This qualitative study investigated the relationship between perceptions of social support and narrative coherence of war memories to explore the process of reconciliation throughout life. *Method:* Ten World War II male veterans ranging from 80–86 years participated in semi-structured one-to-one interviews concerning perceptions of social support during and after service. Narrative analysis was applied to the interviews at two levels; content and form. Content related to themes of social support, whilst narrative form assessed the coherence of war memories as indicative of reconciliation. Coherence was conceptualised as an oriented, structured, consistent in affect, and integrated narrative (Burnell, Hunt & Coleman, 2006).

Findings: Three groups were determined. These were; narrative coherence, reconciled narrative coherence, and narrative incoherence. For all groups, themes included the importance of comradeship, family support, and societal support, and the impact of ageing on war-related memories. However, differences were discovered across groups. Veterans with coherent narratives indicated the importance of supportive familial and societal interactions, and communication throughout life. Veterans with reconciled coherence spoke of improving relationships and communication in later life. Veterans with incoherent narratives spoke of negative societal and familial interactions and the desire to communicate, but the absence of support to do so. *Discussion:* Findings highlight potential factors related to achieving coherence after trauma with special mention to the impact of ageing. By increasing our understanding of reconciliation, interventions can be developed to promote the natural process of making meaning for veterans with traumatic memories, particularly in earlier life.

601. ATTITUDES OF TURKISH PEOPLE ABOUT AGING AND ELDERLY: AN APPLICATION OF PALMORE'S FAQ

A. Canatan (Gazi University, Ankara, Turkey; canatan@gazi.edu.tr)

This study utilized Palmore's facts of aging quiz (FAQ) as a tool to learn the attitudes of Turkish people towards to aging. Today Turkey's population is not older as in European countries but it has an inclination to rise in the future. The ratio of 65+ age is increasing in our population. This fact leads to answer the questions: «what is old age?», «what are the issues related to elderly people?», «how can understand and study these issues?» Therefore Turkish translated form of this quiz (FAQ) applied to the sample (n=220), their ages are 20 to 90 in Ankara. Results will be given after the study will be completed.

602. THE DEMOGRAPHIC CORRELATES OF WORRYING IN AN ELDERLY FREE-LIVING AUSTRALIAN POPULATION

R. Cant, K. Brock, L. Clemson (The University of Sydney, R.Cant@fhs.usyd.edu.au)

Arthritis is a chronic condition resulting in pain and loss of mobility. This study considers the effects of arthritis on well being in terms of 'worries'. *Sample selection:* The data analysed were originally collected to test a falls programme in a population (n=320) of Sydney elderly Australians, aged over seventy years, living in the community who had each had at least one fall in the previous twelve months or who were concerned about falling. Exclusion criteria were cognitive problems associated with dementia, inability to speak conversational English and being housebound. It was not selected on the basis of a chronic condition but nevertheless included some with arthritis, some who had been diagnosed as having Parkinson's disease, some who had previously experienced a stroke, and some who had broken a hip but had recovered mobility. *Instruments and data:* The worry scale (Wilsocki, 1988) used was designed for use among free-living elderly to identify the degree to which aspects of daily lives are troubling. It has three sub-scales of worry: one pertinent to finances (5 items), one to health (17 items) and one to social issues (13 items). In addition a fourth domain pertaining to falls with two items was added. *Results:* While worrying was not recorded by the measures in the scales as high

among the elderly, arthritis (and Parkinsons' sufferers) scored consistently higher on both subscales results and a number of items than those without these conditions. They also scored higher than those who had suffered fractured hips or strokes. Two items of difference were related to the need for care, the first by family and the second by strangers; also relating to lifestyle were worries about death of family or friends and loss of decision making. They shared with older elderly fears of institutional living but also fears of vandalism and violent crime. Worry to do with possible future loss of physical abilities also emerged from the data. These results are consistent with sociological trends that suggest that it is not status per se but a change in status that triggers anxiety (Berger and Berger, 1972). It is those with changing health status rather than those with poor health status or good health status who have higher worry scores.

603. SOCIAL INCLUSION AMONGST OLDER PEOPLE NEEDING LONG-TERM CARE: INTERNATIONAL COMPARISONS SEEKING SOLUTIONS

H.L. Chen (University of Loughborough, UK;
H.L.L.Chen@lboro.ac.uk)

Quality of life is one of the main concerns in long-term care amongst ageing populations in many countries. This problem is historically unique and increases the demand for research material. This examination forms a part of PhD research to understand and evaluate current long-term care systems of social inclusion support at levels of macro, meso and micro welfare. The engagement with social inclusion was carried out in response to the fact that most service users in the research support the view that been support in social well-being would improve their quality of life. The research was designed to include the views and experiences of all the actors in the three examples of contrasting welfare systems from the EU and East Asia (England, the Netherlands and Taiwan) concerning the demand and supply of care resources and the impact of policy upon the provision of social inclusion in long-term care services. These aims will be achieved through a comparison between three examples of contrasting welfare systems from the EU and East Asia. A total 177 interviews have conducted on three levels in each country: national, county and municipal.

604. THE INFLUENCE OF TRANSFER-FACTOR ON BIOLOGICAL AGE OF MEN

A.Y. Chizhov¹, V.A. Santalova¹, V.N. Krutko², V.I. Dontsov² (¹Russian People Friendship University, ²National Gerontology Center; ma21@mail.ru)

The problem: It's known that the reduce of functional activity of immune system is tightly connected with the process of aging (F. Bernet). That's why it seems to be actual to study the influence of perspective immune modulators on parameters of biological age. Transfer-factor is a miraculous discovery that was first made in 1949 — a tiny molecule in white blood cells, a communication molecule that helps alert immune system cells to what they ought to be doing. *Material and methods:* Transfer-factor produced by 4Life company (the USA) was applied to 12 men at the age between 55 and 73 years old 300 mg a day 5 times a week during 6 weeks. The parameters of biological age were estimated with a help of special apparatus and com-

puterized complex, elaborated by National Gerontology Center (Moscow, Russia). The biomarkers used for calculation: blood pressure, pulls wave speed, vital volume of lungs, static balance, Shtange's test, accommodation, body weight, Veksler's test, frequency threshold of hearing, Shulte's test, force of the left arm, percussion test. The activity of functional systems of human body was defined with a help of electropunctural diagnostic Nakatani's method. *Results:* Average calendar age in this group was 63.5±0.7 years old. The average biological age before application of Transfer-factor was (-4.2)±0.6 (from +0.5 to -6.6). Most of man had reduced functional activity of endocrine and immune systems as well as hyperfunction of liver and urinary bladder and hypofunction of pancreas. After Transfer-factor course the average biological age in the group was (-8.2)±0.5 (p<0.05). The activity of disturbed functional system became normal. Decrease functional disbalance from 25% to 11% is noted also. *Conclusion:* The original research gives the possibility to expect optimistic prognosis in application of Transfer-factor as an effectible geroprotector in complex antiage therapy.

605. AGEING AND THE PHYSICAL ENVIRONMENT

A. Churchman (Technion-Israel Institute of Technology, Haifa, Israel; arzac@tx.technion.ac.il)

The goal of the design and planning of the physical environment is to provide the opportunity for each individual to achieve as high a level of quality of life as possible (according to his/her definition), given existing personal, social, economic, and environmental constraints, without injury to others in this generation and in future generations. Quality of life is defined as the subjective judgment by an individual as to the degree to which her or his needs in the various domains of life are met. These domains include the degree of self actualization, health, family life, social relations, dwelling place, work situation, services, income level, safety, environmental quality, social justice and equality, etc. However, the achievement of this goal is complicated by the fact that there are differences between groups of people in their definition of what is important to them and what is necessary for their quality of life, and it is possible that the needs of one group conflict with those of others. The elderly are one such group, which has many common characteristics and needs despite their heterogeneity. The physical environment is particularly critical for this age group, because the developmental processes that take place are in the direction of a reduction in their abilities. However, we now know that the physical environment can have a significant impact on this process by either facilitating their ability to continue to be independently active, or by hindering it. The basic principles that should direct the design and planning are those of universal design and the enabling of freedom of choice and independent functioning. These principles can be applied with regard to the following elements of physical environments at all scales- city, neighborhood and dwelling: comfort, safety; security, accessibility, legibility, aesthetic quality, fit for desired activities, fit for privacy, fit for social interaction, environmental quality and health. Ignoring the physical environment may lead to circumstances in which it hinders rather than facilitates the achievement of as high a quality of life as possible for particular groups or individuals.

606. IDENTITY LOSS AND RECOVERY IN THE LIFE STORIES OF SOVIET WORLD WAR II VETERANS

P.G. Coleman¹, A.I. Podolskij² (¹University of Southampton, UK, ²M.V. Lomonosov Moscow State University, Russia; P.G.Coleman@soton.ac.uk)

Purpose. Adjustment to societal change following the fall of communism was examined in a group of Soviet war veterans from Russia and the Ukraine. The focus of the present study was on the dynamics of identity development, and especially generativity, in a period of intense social upheaval. *Design and Methods.* Measures of self-esteem, life satisfaction, and generativity were administered to 50 World War II veterans from five distinct areas of the former USSR. In addition life history interviews were conducted with thematic analysis of the transcripts. *Results.* Despite loss of the system of government and values that had dominated their lives, most participants demonstrated positive well-being, and especially a high sense of generativity. They described their experience of societal change as having disturbed their past, present and future sense of self. Most, however, had found ways of reaffirming a generative identity. For some, this meant maintaining Soviet identity, and for others taking a critical view of the history they had lived through. But the principal sustaining element among the participants as a whole was hope in their own family's future. *Implications.* Major societal change of the kind experienced by Soviet war veterans in later life poses a challenge to a continued sense of generativity. These elderly veterans were able to meet this challenge, providing evidence of their resilience and the continuing strength of family bonds in the former USSR at this time of debate about national identity.

607. ONCOGERIATRICS IN PNEUMOLOGY: A GROWING ACTIVITY

T. Cudennec, S. Moulias, S. Belliard, S. Labrune, T. Chinet, L. Teillet (CHU Ambroise Paré, APHP, Boulogne, France; sophie.moulias@apr.aphp.fr)

Background: More than half of cancers occur after the age of 65 and this should grow progressively. Unfortunately elderly people are rarely included in therapeutic surveys and in screening tests, so they miss optimal treatment of their cancer (surgery, chemotherapy, radiotherapy) most of the time. At the Ambroise Paré academic hospital, a 440 beds urban hospital, a geriatric intervention team (GIT) has been created since February 2004. One of its aims is to help others specialists to assess the better treatment for their patients. *Patients:* in 3 years, 2800 evaluations were done by the GIT in the whole hospital, 234 on inpatients of the pneumology department. On those, 53 were hospitalised for the diagnosis or the treatment of a cancer. *Results:* patients average age was 80±6 years old, 53% were female. The mini-GDS was positive in 53% and a time and space disorientation was observed in 41%. 67% patients had cognitive troubles, with high risk of falls for 86%. In 28%, patients received chemotherapy. In the end, 4 groups of patients could be observed: «primary» (2%) who will have an optimal treatment, «intermediate» (37%) at whom will be proposed an adjusted treatment, «secondary» (50%) who will have a symptomatic treatment, «near death» (11%) with palliative care. *Conclusion:* this collaboration has afforded us to identify better patients likely to receive an optimal treatment. The main contribution of the EIG in this collaboration was to afford a fast geriatric

assessment to the others physicians in order to make up one's mind to the best treatment.

608. FILIAL NORMS AND EXPECTATIONS IN A COMPARATIVE EUROPEAN PERSPECTIVE

S.O. Daatland (Norwegian Social Research, Oslo, Norway; sod@nova.no)

Public concern over family solidarity tends to focus on the younger generation and the reasons for giving or not giving help. We know far less about the parental motives for accepting or not accepting help from their adult children. This paper explores the balancing between filial obligations and filial independence from the older parent perspective in a comparative perspective by contrasting a southern (Spain) and northern (Norway) context. Findings show filial responsibility norms to be stronger and more unconditional in Spain. Filial independence stands comparatively stronger in Norway in that older parents are reluctant to oblige their children and to prefer services over family care. Both responses may be family motivated, but in different directions. The southern gives priority to the older while the northern gives priority to the younger generation. Data are drawn from the OASIS study, based on personal interviews among the urban population aged 25 and over in four European countries (Norway, England, Germany, and Spain) and Israel.

609. CUSTOMER SATISFACTION AS A TOOL TO IDENTIFY NEEDS OF A COMPLEX ELDERLY POPULATION

C. Danastasio¹, L. Muraro², M. Coveri¹, R. Ciarrocchi¹, E. Ferriani¹, T. Talerico¹, C. Ruggero¹, B. Castaldini¹, V. Pedone¹ (¹Memory and Cognitive Disorders Unit, AUSL Bologna Ospedale Maggiore, Largo Nigrisoli, 2-40132 Bologna, ²Quality Unit, AUSL Bologna, Via Castiglione 29, 40125 Bologna, Italy; clelia.danastasio@ausl.bologna.it)

Aim of the study: to evaluate, through customer satisfaction investigation, whether services offered by a specialized memory clinic meet the needs of patients affected by cognitive disorders. *Methods:* a preliminary investigation has been carried out through two focus groups, the former composed by caregivers and the latter by professional personnel. Thanks to indications from focus groups, a questionnaire addressed to relatives and a scheme of interview directed to patients has been elaborated. In the definitive form, after a pre-test on 30 caregivers, the questionnaire summed up to 25 questions, 22 with closed and 3 with open answers. Patients' interview consisted of 6 questions about those same domains investigated by caregivers questionnaire, particularly focusing on perception of the service. *Results:* 300 caregivers (mean age 58,75±11.71) and 30 patients (15 M and 15 F, mean age 75.97±7.6, mean MMSE score 22.99±5.33) have been involved in the study. 69.33% of relatives answered the questionnaire; 70% of them would not change the actual performing of the Unit, and for the 44% of them the Unit is the most important reference to face problems concerning dementia. In the opinion of 72% of relatives, patients attend the clinic without difficulty and for 21% they do it gladly. 90% of the interviewed patients assert to attend the clinic willingly and 86.67% would not change anything. Major positive issues stressed by relatives and patients were: quality of human relation, empathic attitude by personnel, quality of professional performance, the supporting course in the whole, counselling availability. Criticisms regarded structural and environmental aspects, difficulty to gain informations and

access to assistance services on the territory. *Conclusions:* results of this study have been helpful in identifying some of the needs reported by patients attending our Cognitive and Memory Disorders Unit, so allowing us to elaborate improvement plans about information, health and social assistance net-work, involvement and competence of the general practitioner.

610. PERSPECTIVE TRENDS OF GERONTO-SOCIAL POLICY ON THE EUROPEAN NORTH OF RUSSIA

R.I. Danilova, E.Yu. Golubeva (*M.V. Lomonosov Pomor State University, Archangelsk, Russia; danilova@pomorsu.ru*)

In accordance with the UN principles (1991), Madrid International Plan of Action on Ageing (2002) and Project of the social policy concept of Russian Federation towards the elderly people the main trends are as follows: support, assistance in increasing well-being and quality of life of an elderly person, safety of living, ability to manage own life as well as creation of conditions for effective life and equitable participation with regard to the potential of an elderly person. For the last 10 years social service on the European North has been going through the reforming and development process. It is resulting into the system which includes various institutions, services that render social help at the state and municipal levels, non-governmental sector. However the geronto-social policy does not yet include the following trends which should become priority in the regional social policy: Creation of conditions for independent living of the elderly people as long as possible; Establishment of houses-internates of low capacity for the elderly people with an opportunity of temporary stay for the trouble period in independent life provision, especially in winter time; Development of differentiated social services in accordance with socio-cultural needs of the elderly people; Establishment of gerontological educational and scientific-practical centers which provide elaboration and introduction of new geronto-social technologies and constant monitoring for the quality of life of an elderly person as well as training and re-training of specialists in the field of geronto-social work; Development of voluntary movement among the elderly people, voluntary centers for the elderly people.

611. SYMPOSIUM: CROSS-NATIONAL COMPARISONS OF SOCIAL ENGAGEMENT AND QUALITY OF LIFE

D.J.H. Deeg (*VU University Medical Centre, EMGO-Institute/LASA, Amsterdam, The Netherlands; djh.deeg@vumc.nl*)

Recently, the popular perception of older people has shifted from frail and needy to active and well-off. The new perception represents a change to a more positive image of old age. However, each popular perception is to some extent a stereotype. This symposium addresses the question how socially active older people really are. In particular, by comparing activity levels across countries, the role of societal and cultural factors on social engagement is addressed. Furthermore, most important for older people themselves, this symposium's contributions examine the relation of social engagement with quality of life. Which kind of social engagement is beneficial, and how does this depend on the socio-cultural context? Does a possibly beneficial effect apply to all older people or to young-old only? Social engagement is conceived as personal relationships (having a partner, children nearby, social network

size and social support) on the one hand and social activities (religious activity, participation in organisations and clubs, volunteering, caring) on the other hand. Observed similarities and differences across countries contribute to further empirically founded theory building. Eventually, this will provide insight into best practices of social engagement of older adults.

612. IS THE NATURE OF CHRONIC DISEASES CHANGING OVER TIME? A STUDY AMONG 55–64-YEAR-OLDS IN THE NETHERLANDS IN 1993 AND 2003

D.J.H. Deeg (*VU University Medical Centre/LASA, Amsterdam, the Netherlands; djh.deeg@vumc.nl*)

Despite continuing declines in mortality in Western countries, the prevalence of chronic diseases has been shown to increase. This may be due in part to the improved life expectancy of people with chronic diseases, in part to the earlier diagnosis of diseases. This study addresses the question if the nature of chronic diseases is changing. In particular, it examines their fatality and their association with disability. In the Netherlands, based on the nationally representative 1992–93 and 2002–03 cohorts of the Longitudinal Aging Study Amsterdam (ages 55–64 years, $n=1968$), a rise in the prevalence of several chronic conditions was demonstrated, in particular for diabetes, arthritis, lung diseases (COPD) and depressive symptoms. The prevalence of other observed conditions (heart diseases, peripheral artery disease (PAD), stroke and cancer) did not show significant changes. Mortality over three years declined by a factor 0.63 in this age group, from 3.8% to 2.5%. At the same time, self-reported disability (defined as difficulty with at least one of the activities: climbing stairs, cutting toenails, and using transportation) was observed to increase, from 18% to 29%. Most conditions, with the exception of PAD and arthritis, were associated with 3-year mortality. A change in fatality over time could not be demonstrated for any condition, perhaps due to the low mortality rate in this age group. All chronic conditions were associated with disability, except cancer. Over time, three conditions showed stronger associations with disability: PAD, cancer, and depressive symptoms. No condition showed weaker associations with disability. It can be concluded that several chronic diseases have become more disabling. In particular for PAD, cancer and depression, better disease management seems necessary.

613. WHERE WOULD YOU GO FOR HELP? OLDER ADULTS AWARENESS OF COMMUNITY SUPPORT SERVICES

M.A. Denton¹, J. Ploeg¹, J. Tindale², B. Hutchinson¹, N. Akhtar-Danesh¹, M. Quinlan³, J. Lillie², J. Millen¹
(¹McMaster University, Hamilton, Ontario, Canada, ²University of Guelph, Ontario, Canada, ³United Way of Burlington and Greater Hamilton; mdenton@mcmaster.ca)

Community support services enable persons coping with health or social problems to maintain the highest possible level of social functioning and quality of life. Access to these services in Canada is challenging because of the multiplicity of small agencies providing these services and the lack of a central access point. A review of the literature shows that most service awareness studies are marred by acquiescence bias. We used a novel approach to address this issue. Service providers developed a series of 12 vignettes to describe common situations faced by older adults for which community supports services might be appropriate. In a telephone interview 1152 adults aged 50 and over

were read a series of vignettes and asked if they were able to identify a community organization or agency that they may turn to in that situation. They were also asked about their most important sources of information about community support services. Findings show awareness of community support services varied by the situation described and ranged from a low of 1% to 41%. The most important sources of information about community support services included informational and referral sources, the telephone book, doctors offices, and through word of mouth. Ten percent would seek information on the internet.

614. AN 8-YEAR FOLLOW-UP OF ELDERLY DEPRESSED PATIENTS

J.K.D. Djernes (*The Northern Jutland Psychiatry Unit, Department of Old Age Psychiatry 1, Broenderslev Psychiatric Hospital and Unit for Psychiatric Research 2, Aalborg Psychiatric Hospital, Aarhus University Hospital, General Practice 3, Assentoft, Research Unit for General Practice 4, Aarhus University, Department of Old Age Psychiatry 5 and Centre for Basic Psychiatric Research 6, Aarhus University Hospital, Denmark; jensdjernes@webspeed.dk*)

Objective: The study aims to establish the predictive value of a diagnosis of depression among elderly according to the 10th revision of the International Statistical Classification of Diseases (ICD-10). *Material and methods:* During an 8-year follow-up 76 depressed elderly inpatients and 38 community-living depressed patients were compared with 116 controls. *Measurements:* Morbidity, medication usage, health service utilization, and mortality. *Data sources:* GPs' medical records and health statistics registers. *Results:* At baseline, no significant differences were observed between the two cohorts of depressed patients and the controls in terms of prevalence of cardiovascular, respiratory, or cerebrovascular morbidity. During follow-up both cohorts of depressed patients had significantly increased rates of recurrent depressions, consumption of antidepressants, psychiatric in- and outpatient admissions, and home visits; inpatients used more psychiatric hospital days. Health service utilization in somatic hospitals and somatic diagnoses was not significantly increased. Inpatients used significantly fewer GP office hour services but more out-of-hours services than the control group. Community-living depressed patients experienced no significant increase in use of GP services after adjustment for multiple testing. Survival was unaffected in both cohorts. *Conclusion:* In agreement with other studies, especially inpatient depression predicted increased rates of recurrent depressions and increased use of psychiatric hospital services, indicating poor long-term outcome. Inpatients consumed fewer GP office hour services but more out-of-hours services, possibly due to less office hour contact. Contrasting with other studies, ICD-10 depression among elderly predicted no increase in the use of somatic hospital facilities.

615. THE EFFECT OF SEX, OBESITY AND SMOKING ON HEALTH TRANSITIONS: A STATISTICAL META-ANALYSIS

G. Doblhammer, R. Hoffmann (*University of Rostock; doblhammer@demogr.mpg.de*)

Context: Sex, obesity and smoking have been found to affect health transitions between non-disabled, disabled and death. *Objective:* To determine the impact of sex, obesity and smoking on four different transitions between non-

disabled, disabled and death, and to assess which risk factors and transitions are studied most. *Data Source:* Expert recommendations, the electronic databases Medline, PsycINFO and SOCA (Sociological Abstracts) and the references in the articles. *Study Selection:* The search is confined to the years 1985–2005 and produced a total of 8016 articles. 55 articles selected by two independent researchers met the selection criteria regarding the study population, longitudinal design of at least one year, risk factors, the transition and the outcome measures. *Data Extraction:* The study characteristics and results were extracted and entered by hand into Excel tables. *Data Synthesis:* 48 studies focused on the transition from non-disabled to disabled. For the other transitions the number of studies ranged between 11 and 17. The meta-analyses showed that being male, having a normal weight and nonsmoking reduces the risks on the transition from non-disabled to disabled and increases the chances to recover. Women have lower mortality risks than men, disregarding of whether they are disabled or not. Obesity seems to prevent both disabled and non-disabled persons against premature death. For the impact of smoking on the transitions from non-disabled to death and from disabled to death the number of studies was too limited to perform a meta-analysis. *Conclusions:* Being female, smoking and obesity have unfavorable effects on the risk of disability and the chances to recover. More studies of modifiable risk factors on health transitions are needed, particularly on transitions other than from non-disabled to disabled.

616. RECONCILIATION OF PAID WORK AND CARING FOR OLDER PEOPLE IN EUROPE: CORE FINDINGS FROM EUROFAMCARE

H. Doehner¹, G. Lamura², E. Mnich¹ (*¹University Medical Center Hamburg-Eppendorf, Hamburg, Germany, ²INRCA and University Medical Center Hamburg-Eppendorf, Hamburg, Germany; doehner@uke.uni-hamburg.de*)

Objectives: In all countries family carers provide the majority of care for dependent older people, experiencing often, when employed, difficulties in conciliating their paid work with their caregiver role. In the light of the growing demand for elder care to the increasingly aged European population, the EU-funded research project EUROFAMCARE (www.uke.uni-hamburg.de/eurofamcare) has provided an overview of the availability, use and acceptability of supporting services for family carers of older people in six European countries. This presentation focuses on the multifaceted relationship between paid work and family care of the elderly, in order to identify core challenges and policy options currently existing to better combine family caregiving and employment. *Methods:* Personal interviews have been carried out with 6,000 family carers of over 65 year old persons in six European countries (Germany-DE, Greece-EL, Italy-IT, Poland-PL, Sweden-SE, United Kingdom-UK), recruited by means of a saturation method in selected regions, reflecting different socio-economic backgrounds and availability of support services. *Results and Discussion:* In our sample, carers in working age (i.e. younger than 64) represent the great majority throughout Europe (73%), with strong cross-national variations (Greece: 82%; Sweden: 45%), reflecting deep cultural differences in family care patterns. Employed carers represent 41% of the total, but reach peaks of about 60-70% among those younger than 55, with two oppo-

site exceptions: Polish carers under 35 (only 42%) and Swedish carers aged 55–64 (over 67%). EL, IT and SE show more male working carers, DE and UK no difference and only PL more female working carers. Relevant proportions of carers reported restrictions to their working situation due to caregiving: 15% of employed carers (highest in DE: 21%, lowest in PL: 6%) had to reduce the amount of working hours due to caring; 8% of the non employed working carers (highest UK: 15%, lowest SE: 2%) had to give up work because of caring; 8% of the total could not develop their professional career or studies; 7% could work only occasionally. These restrictions were more frequently reported by women. By a cluster analysis six care profiles have also been identified, in order to show which types of support and characteristics of services are more relevant for working carers. These results can be helpful for carers' organisations, decision makers, researchers and practitioners to identify change management needs at various levels, to promote more appropriate policies and practices to facilitate the reconciliation of caring and working responsibilities.

617. WHAT INFLUENCES CAREGIVERS OF PATIENTS WITH DEMENTIA IN THE USE OF HEALTH CARE RESOURCES?

C. Donath¹, E. Graessel¹, M. Grossfeld-Schmitz¹, R. Holle², S. Neubauer², J. Lauterberg³, S. Wunder⁴, H. Mehlig⁵, M. Gaudig⁶ (¹University Clinic Erlangen, Psychiatric and Psychotherapeutic Clinic, Medical Psychology and Medical Sociology, Erlangen, Germany, ²GSF — National Research Center for Environment and Health, Institute of Health Economics and Health Care Management, Neuherberg, Germany, ³AOK Bundesverband, Bonn, Germany, ⁴AOK Bayern, Nuremberg, Germany, ⁵Eisai GmbH, Frankfurt, Germany, ⁶Pfizer Deutschland GmbH, Karlsruhe, Germany; carolin.donath@uk-erlangen.de)

Background: In Germany, a lack of research concerning dementia care in the primary care setting is evident. Therefore, project «IDA (Initiative Demenzversorgung in der Allgemeinmedizin)», a three arm cluster-randomized trial in the primary care setting in «Mittelfranken», a region in the center of Bavaria, with dementia patients, their family caregivers and their general practitioners is currently being carried out. **Aim:** To determine the objective amount and kind of given care through family caregivers as well as the subjective burden of family caregivers and its relation to utilised health care resources. **Method:** 388 patients with mild to moderate dementia syndrome according to ICD-10 criteria, aged 65 and older have been recruited by 128 practitioners between 07/05 and 12/06. Up to now, baseline data from N=305 patients and their caregivers are available, 12- and 24-months follow-up assessments will be carried out. **Results:** Patients have an average MMSE-score of 18.9, mean Barthel-Index of 73.8 and are on average 80.3 years old. The mean age of primary family caregivers (N=281) in this sample is 59.9 years, 72% are females. In the sample the average objective amount of given care (support with ADL's, support with IADL's, surveillance) by primary caregivers is M=5.47 hours per day (SD=6.09) and M=0.88 hours per day (SD=2.08) by secondary caregivers. Seven percent of the caregivers have visited family caregiver information centers as one possibility for health care resource utilisation. Differences in health care resource utilisation concerning objective amount of given support, subjective burden and rural ver-

sus urban residence, education of family caregivers and degree of dementia will be analyzed. **Conclusion:** Data will help to understand the interdependence of objective given care and subjective burden and related differences concerning the acceptance and the use of health care resources by family caregivers of dementia patients. Thus, insights will be gained in how to design offers in the health care system in order to meet the needs of caregivers.

618. SYSTEM THEORY OF AGEING

V.I. Dontsov, V.N. Krutko (Institute for Systems Analysis; dontsovi@mail.ru)

Purpose: The great versatility and variety of the whole organism ageing processes demands of necessity to research its by special methods — the methods of analysis of complex systems. **Material and methods:** The system analysis is the most perspective and fast developing method for this purpose now. The theoretical methods of system analysis were applied for consideration of questions of occurrence of ageing as phenomenon of life and the global reason of ageing and main types, to which it is possible to be reduced all variety of special ageing mechanisms. **Results:** Global, fundamental reason of ageing for any complex systems (multicellular organisms), is the separate form of existence of modern organisms on the Earth. The separation of systems (organisms) from external environment puts the basic limit of its ability to internal evolution with preservation of its quality as separate system, that may be overcome only in the form of the evolution of species. It is thus possible allocates the following general types of ageing: — the insufficiency of the flowing of systems («pollution» mechanism); — insufficiency of self-copying of systems elements (wreck of non-regenerated elements — structures of organism); — insufficiency of action of selection mechanisms (generation of diversity on the all structures leveles of organism); — change of different regulatory mechanisms. The general global direction of counteraction of ageing is the increase of degree of system uncovering and its further evolution as a whole and all its subsystems in particular. Private are the measures, affecting particular types and mechanisms of ageing, that only partially prevent of ageing, only for separate function of ageing organism. **Conclusion:** System method is the central principle for analysis of ageing as whole and global phenomenon of life. System principle is displayed as harmony of various vital functions of ageing organism and ageing mechanisms may be reduced to small number of fundamental principles — types of ageing, despite a lot of particular mechanism of ageing processes.

619. PARTICULARITIES OF THE INTERHUMAN RELATIONSHIPS BETWEEN THE ELDERLY IN THE DAY CARE CENTRES FROM TIMISOARA, ROMANIA

E.A. Draghia (Timisoara, Romania; amalia_draghia@yahoo.com)

According to the new Legislation in Romania, private and public social work granted to elderly persons are divided into three main categories: attendance at home, day care centres and the residences for the retired. The day care centres are an alternative method of institutionalizing the elderly and also a pleasant and at the same time helpful way of spending one's spare time. Unfortunately, in comparison with the number of possible eligible persons,

the number of these centres in Romania is extremely reduced. At the same time it is also to be noticed that there is a reduced number of a specially prepared personnel in this domain. That is why there should be given special attention to these institutions which have as main aim the improvement in the quality of life of the elderly. The quality of the relationships between the elderly in the day care centres and the personnel with whom they interact, their mates, and the members of their families, represent an important factor which influences positively the fitting in of the elderly to their new way of living, the activities at the centre and so on. Consequently, according to a survey done in the day care centres in Timisoara regarding interhuman relationships between the institutionalized in such centres, a high degree of sociability can be noticed in the case of these people, not only with the personnel of the centres, their colleagues, the members of their families, but also with the outsiders. For instance, some persons said that before coming to this centre they were reserved when having to interact with young, unknown people. At the same time it has been noticed a higher degree of responsiveness to all kind of new things (group activities with the young, attendance to different local events and so on). It has also been observed a higher self-esteem and satisfaction for being given responsibilities and for being appreciated for their materialized ideas during the activities at the centre. The research methods used for obtaining information were the interview and the survey. All in all, it is of utmost importance the development of the gerontological system of social work in Romania mostly because the number of the elderly is in constant and permanent growing, and those who are institutionalized in such centers maintain positive relationships and are satisfied with the existence of such institutions. Moreover, the days they don't attend the centre lack of interhuman closeness (communication and interaction) and sometimes they are even more restless.

620. AVAILABILITY OF INTEGRATED SERVICE DELIVERY (ISD) AND UNMET HOME CARE NEEDS AMONG COMMUNITY-DWELLING ELDERLY PEOPLE

N. Dubuc¹, M.F. Dubois¹, M. Raiche², N.R. Gueye², R. Hebert¹ (¹University of Sherbrooke, Canada, ²Research Center on Aging, Sherbrooke Geriatrics University Institute, Sherbrooke, Canada; nicole.dubuc@usherbrooke.ca)

Background. A wide range of services are required to meet the care needs of older adults living in the community. Many studies have shown that for people with equivalent needs, services provided by home care organizations vary widely. Therefore, unmet needs related to disabilities should be assessed. **Aims.** To evaluate the prevalence of unmet needs among community-dwelling elderly people and to identify associated factors. **Methods.** We used data from the fifth wave of the longitudinal Prisma survey, a study comparing a region with and without an integrated service delivery network (ISD). This wave included 801 older adults aged over 78 and living in the community in the Province of Quebec, Canada. Study participants were evaluated in their own settings on functional disability (SMAF), cognitive status (MMSE), social functioning, empowerment, provision of health and social services during the previous year. From the SMAF, the resources available to compensate for the disability were evaluated and a handicap score (unmet needs) was deducted. When the handicap score is equal to zero, all the needs are filled. Sociodemographic data included age, gender, level of edu-

cation, living alone, living in an urban or rural environment, as well as living in a region with or without an ISD network. Multivariate regression analyses identified factors related to the handicap score. **Results.** On average, subjects were 84.1 (SD=4.4) years old and 64% were women. They had a mean MMSE of 23.7/30 (SD=6.7) and a mean SMAF of 21.5/87 (SD= 11.6). Overall, more than a half (35% in the ISD region and 67% in the other region) of the disabled population lived at home with at least one unmet need (handicap > 0). The highest rates of unmet needs were for grooming (25%), washing (13%), vision (11%), hearing (16%), bowel (5%), and walking outside (5%). Significant correlates of unmet needs included: higher level of disability, living alone, better social functioning, less hours of help provided for personal care during the past year, and, for regions without an ISD network, lower empowerment. The regression model explains 31% of the variance. **Discussion:** In spite of home care services established for more than thirty years in the Province of Quebec, disabled older adults living in the community continued to express unmet needs. However, ISD networks such as the Prisma Model seem to be a more efficient way to answer their long-term care needs.

621. ENVIRONMENTAL ASSESSMENT OF INSTITUTIONAL CONTEXT PUBLIC VERSUS PRIVATE — BEHAVIOURAL STUDY OF ELDERLY

V. Duarte (Institute of Biomedical Sciences Abel Salazar, University of Porto, Portugal; mafaldaduarte@hotmail.com)

This study focus the production of knowledge about the influence of the institutional environment in the behaviour and health of institutionalized elders, is still scarce. A multidimensional study on differentiated institutional environments for elders has been performed — Non Profitable Nursing Home *versus* Profitable Nursing Home — so as to investigate the adjustment capacity of the elders to the environment and its influence in the well-being and health. The purpose of this quantitative study consists of the presentation of the environmental profile of the two distinct institutional environments, based on SERA — «*Sistema de Evaluación de Residências de Ancianos*» (Fernández Ballesteros, 1998). In this sense the Private Home was generically assessed more positively than the State one. Nevertheless, we must look more closely at each dimension. In what concerns the **Structural and Architectonical Characteristics** the state home was considered more uneficient, in prosthetic help, in guidance help, and in space availability than the private home. As for the **Functioning-Organisational Characteristics**, the state home was characterized by an insufficient ability to respond to functioning expectations, policy and informational transparency, availability of health care services and social-recreational activities. In rms of **Residents and Staff**, the state home residents were more functionally autonomous, which allowed them a higher level of participation in the activities and a higher level of integration in the community. The residents of the private home were older, more dependent, which made the process of adjustment to the environment more difficult. The **Social Climate** was different in both institutions. In the state home residents needed a strong support by the staff. The **General Assessment** made by the researcher was notoriously more positive in the private home because it gathered a set of pleasant structural features, and the personal component seemed to function well. As for the need for **Improvements** these have a great importance in what con-

cerns the interaction between residents/staff, space availability, issues related to the management, food and visitors schedules. From the gathering of **Personal Information** we concluded that the elder residents at the state home have higher activity, but that doesn't mean that they sustain personal interaction among them. In fact the elders living in a private context were characterized by being in unfavourable health and functional situations. Finally in what concerns **Satisfaction**, the elders living in a private context display more satisfaction towards the setting in which they live in, specially with their family fabric.

622. COMBATING AGE DISCRIMINATION THROUGH ADVOCACY WITH OLDER PEOPLE

A. Dunning (*Swansea University; andrew@hdunning.freereserve.co.uk*)

This paper explores the development of advocacy as an essential means of combating age discrimination against older people. It draws upon the work of the researcher since the European Year of Older People 1993, and has largely been undertaken with older people as advisors, commissioners and key informants within the research process. Firstly, in terms of definition and development, advocacy is described as being a one-to-one partnership between a trained independent advocate and an older person who needs support in order to secure their rights and interests. Advocacy in the UK has emerged as a fundamentally grassroots response to age discrimination, elder abuse and the exclusion of older people. The provision of advocacy projects working with older people has grown from only 16 projects across the UK in the early 1990's to 136 projects in England alone today. Whilst advocacy has been slowly gaining official recognition in recent years, its development has been limited by the competing discourses of policy makers and older people. Secondly, the main challenges to the development of advocacy in combating age discrimination are highlighted as being the struggle for advocacy to maintain its independence, identity and integrity as it becomes colonised and compromised by policy makers and those providing services to older people. There are also internal challenges for the advocacy movement itself, including capacity and quality standards. However, an unprecedented number of «top down» and «bottom up» opportunities are now manifest, such as the rise of human rights legislation, the creation of a Commission for Equalities and Human Rights and (in Wales) the appointment of an Older People's Commissioner, as well as the development of the Older People's Advocacy Alliance, a UK-wide alliance of advocacy projects and organisations for and organisations of older people. Finally, the proposed priorities for future research are identified as being the conceptualisation and modelling advocacy; mapping and monitoring its development; and creating a broader evidence base. This agenda should be pan-European as well as local and national in its scale and scope in order to enhance the development of advocacy with older people.

623. OLDER ADULT LONELINESS: MYTHS AND REALITIES

P.A.I. Dykstra (*Netherlands Interdisciplinary Demographic Institute, The Hague, Netherlands; dykstra@nidi.nl*)

This paper focuses on loneliness, as an indicator of quality of life in the social domain. Loneliness is generally described as the unpleasant experience that existing relationships do not meet desired levels of contact and

intimacy. Using findings from 25 years of European and North American research on loneliness, three often-held assumptions are challenged. The first is that loneliness is a problem specifically for older people. The second is that people in individualistic countries are lonelier. The third is that loneliness has increased over the past decades. Though there are good theoretical reasons for making the three assumptions, they find little support in the research literature.

624. THE EUROPEAN OBSERVATORY OF GERONTO-IMMIGRATION

M. Echezarreta¹, R. Caro¹, R. Duran¹, A. Rodriguez¹, M. Martin¹, B. Alvarez², R. Gomez² (¹*Faculty of Law, E-29071, 2Carlos Haya Hospital, Málaga, Spain; mtechezarret@uma.es*)

The EUROPEAN OBSERVATORY OF GERONTO-IMMIGRATION (UOGI) has recently set up at the University of Málaga, Spain aiming the building of a regular structure and a research team for the analysis of retirement migration, and of a tool to provide with related information for the academy, the institutions and companies and to assess commercial and social policies. To a precise definition of the European Places for Retirement (EPR), UOGI will try to establish itself as a reference for European citizenship, ageing and dependency policies in the places for retirement. Its main expected contributions will lead to (i) remove barriers to a full intra-European mobility of the elderly to build the real European citizenship, (ii) overcome the participation, integration, social and health protection problems of older foreigners, mainly due to language, cultural and legal barriers, (iii) establish political actions to get those people integrated in the local social cultural, economic and political life, in line with local regulations, (iv) enrich the interpersonal relations and behaviours at local scales between native and foreign residents, (v) strengthen solidarity among generations and national groups, (vi) contribute to the improvement of legal conditions of foreigners in civil, family and economic rights spheres. The paper will propose materials and methodologies to go deeper into the social, behavioural and legal life of elderly foreigners in Spain.

625. PREVALENCE OF CEREBROVASCULAR DISEASES AMONG ELDERLY ADULTS AND OLD-TIMERS OF YAKUTSK CITY

A.I. Efremova¹, O.V. Tatarinova², L.S. Kylbanova², V.N. Neustroeva², Y.P. Nikitin³ (¹*Hospital #1 of Health Care Ministry of Sakha Republic (Yakutia) Geriatric Centre, Yakutsk, Russia, 2Yakutsk Scientific Centre RAMS and Government of Sakha Republic (Yakutia), Dept. of Internal Medicine, Yakutsk, Russia, 3Research Institute of Internal Medicine under the Siberian Branch of the AMS, Novosibirsk, Russia; tov3568@mail.ru*)

Cerebrovascular diseases are considered to be one of the main causes of death, early disability, morbidity rate of the Sakha Republic population. Purpose of this research was to study prevalence of basic cerebrovascular diseases among population of elderly and senile ages including old-timers within Yakutsk city. Standardized epidemiologic methods and evaluation criteria were used in observational cohort study involving 475 subjects aged 60 and over (258 women and 217 men). Based on data obtained the prevalence of cerebrovascular diseases was estimated at 207 men (44.8%) and 255 women (55.1%). 171 sub-

jects aged 60–69 years composed a separate age group (75 men and 96 women). In this group initial manifestations of cerebrovascular insufficiency (IMCVI) were observed in 14 subjects (3%). Discircular encephalopathy (DE) was noted in 139 (30%). Transient functional apoplexy (TFA) was diagnosed in 7 (1.5%) and cerebral insults (CI) in 11 subjects (2.3%). The next age group included 192 subjects (88 men and 104 women) aged 70–79. Of them 7 (1.5%) had IMCVI, 183 subjects (39.6%) were with DE, 11 of those (2.3%) with TFA, 14 (3%) with CI. 83 subjects (36 men and 47 women) were examined in the age group of 80–89 years. DE was noted in 71 (15.3%), TFA in 3 subjects (0.6%), CI in 9 (1.9%). 16 old-timers (8 men and 8 women) underwent the examination separately. DE was diagnosed in 7 (1.5%), TFA in 3 (0.6%), CI in 5 subjects (1%). The high prevalence rate of CVD was estimated among women aged 70–79 (22.5%), while men and women aged 90 and over (1.7% each) had lower rates of CVD. DE was considered to be the cerebrovascular pathology noted more frequently among the elderly — 400 subjects (86.5%). The female cohort had DE more often — 47.6% (220 subjects) as compared with the males — 180 subjects (38.9%). The prevalence of TFA was noted among the 14 female elderly (3%), while it diagnosed in 8 men (1.73%). CI was detected in 39 (8.4%). 25 of them were men (5.5%) vs 14 women (3%). Thus, in the structure CVD there were positions established regarding the prevalence as following: 1 — DE, 2 — CI, 3 — IMCVI, 4 — TFA in men, 1 — DE, 2 — TFA and CI, 3 — IMCVI in women.

626. QUALIFYING VOLUNTEERS AT THE UNIVERSITY OF DORTMUND GERMANY: 27 YEARS OF EXPERIENCE

A. Ehlers, M. Reichert (*University of Dortmund, Germany; aehlers@fb12.uni-dortmund.de*)

Against the background of the demographic change, using the potentials and competences of older people in the framework of volunteering becomes increasingly important. The University of Dortmund faced up to this challenge at an early stage: Since 1980 Continuing Academic Studies for Seniors are offered. The study course is open for persons older than 50 years of age. On the one hand, it aims to prepare students for assuming voluntary activities in domains of their choice. On the other hand, the curriculum enables the participants to develop and/or expand skills for a conscious and self-determined ageing. This presentation delivers insight in important results of evaluation which are the following: In the first place, senior studies in Dortmund are proceeding successfully. Until now, more than 1200 people have participated and demand is still lively. The majority has finished course of studies with a certificate. Second, about 80 % of the senior graduates volunteer in different fields. These include social and political participation, care for young or old people, sports, culture and education. Third, participants report that the course has enhanced their individual well-being and life-satisfaction. This is due to the fact that for many of them (especially women) the participation means to make up with absent or refused opportunity to study after school. Furthermore, positive implications result from various new contacts with older and younger students. In addition, characteristics of three study groups (education level, average age, proportion of men and women) are presented.

627. OLD AGE: TEMPORAL APPROACH

M. Elutina, N. Bexaeva, E. Chekanova (*Saratov State Technical University, 006023@saronline.ru*)

(1) The foundation for socio-psychological generalizations of old age could be the original interaction of time modi as determining, structuring basis for all architectonics of elderly people daily routine. In different age periods different models of vision, time organization are reproduced. In the old age on the foreground comes the problem of the present in its fluid integrity, it dominates «here and now», characterizing the certain model of life: immersion in urgent, without superfluous distractions for illusions, awareness of life «acceleration», when «the time runs». Any fact becomes an event; this or that action is planned ahead of time. To the traditional determination of the present by the past and the future, the change of the ratio between these two is added: the past is increased at the expense of the future. Two kinds of memoirs are allocated: firstly, reconsideration, reassessment of the past life; secondly, episodes from the time past long ago, the elements of the previous impressions are spontaneously flashing in the consciousness. Alongside with psychological conditions for mental returning to the previous life there is a biologically caused simplification of memoirs realization. The phenomenon «of mental returning to the past» becomes universal in the special vital situations, when there is a necessity to adapt to the existence. (2) The shift of the situation to the past is considered as a pathological symptom. «Torment of conscience» in elderly age, when the man realizes wrongfulness, but nothing can be already corrected, set the imperative to his behaviour, emotional experiences, quite often, there comes a situation, which is possible to designate as «life becomes unbearable». (3) The presence of the mechanism of memoirs actualization lies in the basis of psychotherapy methods protecting the internal world from deformations and destructions.

628. SOCIAL CAPITAL AND RESILIENCE IN OLDER ADULTS

C.G. Emes, N. Marlett (*The University of Calgary, Canada; cemes@ucalgary.ca*)

This paper explores the data collected by older adults while setting a research agenda about resilience. Focus group data from 120 older adults were subjected to three stages of analysis, a computer aided content analysis, interpretive discussions with older adults as researchers, and finally an exploration of the convergence between the emerging constructs of resilience and the writings related to social capital. Social capital informs the premise of the paper, that is, that resilience can be viewed as a component of social capital along with anticipation and productive function. These data suggest that this particular cohort of older adults considered resilience to be learned, strengthened, shared and passed on during times of challenge and struggle and thus resiliency acts as a social currency.

629. THE INFLUENCE OF THE QUALITY OF LIFE OF SENIOR CITIZENS THROUGH LONG-LIFE LEARNING

P. Escuder (*Senior Citizens' University, Jaume I University, Castellon, Spain; mollon@uji.es*)

Introduction. An objective of modern societies is that their citizens have a high quality of life (QoL). Education is essential in a civilised community, not only from childhood to adolescence, but also in adults and senior citizens.

Long-life learning is a right (as recognised by the United Nations and other organisations) which highly benefits society. Offering people an access to education, to senior citizens (people over the age of 55 years) in our case, not only provides knowledge, but also new experiences, it increases people's critical sense and allows them to participate in society. Education is a psychosocial activity that not only highly benefits senior citizens, but also relatives, friends and society. *Methods.* The Senior Citizens' University at the Universitat Jaume I has 10 years experience in teaching senior citizens (currently with more than 600 students). In the last 3 academic years (2003/04, 2004/05 and 2005/06), surveys and monitoring QoL have been analysed in students to consider basic human needs and their own perception (the QoL scale by Schalock). Although the results were obtained from this framework, this work offers conclusions that are extrapolable to other educational centres which offer an integral education to senior citizens. *Results.* Firstly, the background is described and analysed. Secondly, it is necessary to study at what level and to what extent education influences QoL, and how it may increase. Qualitative and quantitative surveys show a high level of QoL among senior citizen students. Moreover this study shows that considering the LoQ scale by Schalock (life satisfaction, independence, support networks, etc.) and the students' self consideration (self image, feelings, etc) results in highly beneficial processes (interaction among senior citizens, intergenerational relationships, increased self-esteems, social participation, etc.) that influence QoL. The lack of education means that quality of life lowers, as occurs with Information and Communication Technologies (mainly, but not only, Internet and computer skills). Effects are also analysed (disinformation, non communication, loneliness, discrimination, etc.). *Conclusions.* We can consider that education (understood as a psychosocial activity) positively influences people's QoL. Life-long learning in senior citizens is particularly important because the benefits derived from such an activity will be relatively greater than in younger students. Education and digital literacy are two excellent weapons to fight against a lowering of QoL in senior citizens.

630. ONLINE VIRTUAL TEACHING IN SENIOR CITIZENS. A CASE STUDY AT THE SENIOR CITIZENS' UNIVERSITY

R. Esteller¹, P. Escuder¹, V. Querol² (*1Senior Citizens' University, Jaume I University, Castellon, Spain, 2Department of Philosophy, Sociology and Audiovisual Communication and Advertising, Jaume I University, Castellon, Spain; esteller@uji.es*)

Background. Access to education, regardless of age, is a right that more and more governments and organisations put into practice knowing that it greatly benefits society. Courses must be developed with the main aim that students learn new knowledge, and that they also share experiences, develop their critical sense and form part of society. Education is a psychosocial activity that greatly benefits not only senior citizens, but also relatives, friends and society. However, the educational system should endeavour to cater for those people who cannot attend classes, whether it is due to being disabled or because of distance. In this sense, these students could enjoy the benefits that education offers. *Introduction.* The Senior Citizens' University has 10 years experience in teaching senior citizens (people over the age of 55), and currently has more than 600 stu-

dents. With those senior citizens who cannot travel to class, we carried out a pilot scheme to test how a virtual on-line class could be developed. This scheme was conducted with 80 students who were divided into groups (different scenarios) or remained at home alone. *Methods.* The virtual on-line class was constructed with the intention to simulate a real class as much as possible. The characteristics that a virtual class must have to fulfil the initial aims have been analysed. After giving the virtual class, we did surveys about this activity. The results have been obtained after studying the teaching experience of the teachers, staff and students. Objective and subjective assessments were used to obtain the results. *Results.* After analysing the experience, which took the framework and aims into account, the following results were obtained; The attributes and characteristics that an on-line virtual class should have as far as possible. Advantages and disadvantages. Assessments by the teachers, staff and students. What the methodology and didactics should entail and how they must be modified in this kind of class. The classification of potential technologies and structures and how these may improve or worsen the fulfilment of objectives. *Conclusions.* Giving virtual or online classes is beneficial in some cases, and offers advantages and disadvantages. All factors must be analysed and balanced, they will be important for the success or a failure of the class.

631. METHODOLOGY AND DIDACTICS IN ICT COURSES TO SENIOR CITIZENS AT THE SENIOR CITIZENS' UNIVERSITY

R. Esteller¹, S.J. Monstad², P. Escuder¹ (*1Senior Citizens' University, Jaume I University, Castellon, Spain, 2Landstorget Seniorcenter; Norwegian Health Association, Bergen, Norway; esteller@uji.es*)

Introduction. Modern society's reliance on the use of Information and Communication Technologies (ICT) is climbing to a point where those who master the technology benefit from it. Older adults are using ICT less than other groups in society and should be offered suitable educational opportunities to increase ICT knowledge and proficiency. The presentation will focus on the methodology and didactics of ICT courses, like basic computer skills and use of the Internet, at The Senior Citizens' University (SCU). *Methods.* Over 400 students have attended ICT courses since 2002. Results for this presentation have been obtained by synthesising qualitative data concerning the experience of teachers, staff and students. In addition, course content and curriculum have been reviewed. Furthermore, quantitative data from annual surveys of students are presented. *Results and discussion.* Older adults form a very heterogeneous group that deserves special consideration. Traditional ways of teaching have not always proven suitable. In many instances, ICT presents concepts that are new to older adults, involving skills and concepts that may be difficult to acquire. The satisfaction rate of students has increased annually. In the 2006/07 introductory course 80 % of the students that finished the course said it was well developed and wish to continue to a higher level. There is however some problems with drop-out from the courses, but this tendency has declined in the last years. Analysis of the experience and surveys will result in concepts and recommendations that must be considered while teaching. The methodological and didactical concepts that are considered successful at SCU include: To understand and to be able to successfully deal with the limitations that elderly students

may have in learning and acquiring new skills. Teachers should be good communicators, with a dedication to motivate and show the possibilities in the field. Furthermore, the technical facilities that are to support the learning process need to function well for the intended group. There is also great need for sufficient knowledge of the social environment of target group. Education is a psychosocial activity that greatly benefits not only older adults, but also their relatives and friends. Courses may not only help older adults to learn and become more apart of our digital society, but also may also in turn benefit their network and their ability to live an active and meaningful life.

632a. IMPROVING SOCIAL WELL-BEING IN LONG TERM CARE ENVIRONMENTS

S.C. Evans (University of the West of England, Bristol, England; Simon.Evans@uwe.ac.uk)

An increasing number of older people in the UK are choosing to live in new forms of accommodation such as extra care housing and retirement villages. These environments are designed to meet the physical care needs of residents, often through flexible care packages, but the extent to which their social and emotional needs are provided for is less clear. Despite this, social well-being and quality of life are key aspirations, both for older people and for government policy. This paper reports on a qualitative study that aimed to explore social well-being for older people in extra care housing, one of the most popular housing with care choices for older people in the UK. Following a review of the literature on quality of life and social well-being for older people, data was collected through in-depth interviews with residents and managers of extra care housing schemes across the UK. Overall, respondents reported high levels of social well-being and quality of life. These were linked to levels of social interaction both within and beyond the housing scheme. The very nature of extra care housing supports high levels of social interaction, particularly where it is designed around indoor 'streets' incorporating shops and other community facilities. A range of other factors were identified that contributed towards social interaction and well-being, including organised social activities, the provision of facilities, links with local communities, the role of family carers and the philosophy of care. A number of challenges to social well-being and quality of life were identified. These included impaired mobility, poor public transport, isolated location and membership of minority groups. This paper will also explore how the impact of these barriers can be minimised.

632. MULTI-FACETED RESEARCH METHODS: IDENTIFYING DETERMINANTS OF POOR SLEEP IN CARE HOMES

I. Evers, E. Cope, T. Roberts, R. Meadows, S. Arber (University of Surrey, UK; I.Evers@surrey.ac.uk)

Identifying the determinants of poor sleep in care homes as a part of a multi-site, cross-disciplinary research project is a complex undertaking, especially in light of the vulnerable group of older people involved. This paper presents the methodology developed to undertake research that involves sociology, bio-sciences, nursing and engineering. Improving the sleep of older people living in care homes can contribute towards improving their quality of life. To enable this to occur the key determinants of poor sleep need to be known. Taking a multi-method approach the data collection consists of ethnographic data to

evaluate the care home environment in which sleep takes place. Care home residents wear actigraphy watches to collect physiological data over a period of two weeks. This is complemented by a 24 hour grid diary recording additional information relating to food and drink, medication and activities for a period of two weeks. To understand the institutional context of care home life semi-structured interviews are conducted with care home managers, staff and residents. The paper discusses the challenge of combining these diverse sets of data to provide a further understanding of sleep in care home. The methodology developed incorporates quantitative and qualitative data that will inform the development of technological devices and models of care that will enhance older people's lives.

633. RETIREMENT TRANSITION IN BANK SYSTEM EMPLOYEES: THE PORTUGUESE CASE

M. Ferreira (Escola Superior de Educação do Porto, Portugal; marianela.f@netcabo.pt)

With this study we pretend to understand and analyse the complexity of the passage to retirement in bank system employee's, in their modalities and consequences. We relied in a sample of Portuguese early retired individuals, many of them with perfect health, which makes more relevant to know and evaluate the impacts of this transition process on the identity, the economical resources and the relational life of these professionals, as well as their expectations and needs in regard to their quality of life in the new cycle of personal biography. More than to inquire about their predisposition to re-enter in active life, the aim was to identify possible activities that allow them to keep a positive representation of themselves, feelings of social utility and dignity, as well as the maintenance of social relations and economical autonomy. Recognizing the importance of studies that emphasize the character of social construction of old age, as well as those that identify retirement as an accelerator process of growing old (as they can precipitate the individuals on a kind of social anonymity and isolation), it's fundamental to elucidate if the specific professional category of individuals in study can keep the quality of life necessary to give continuity, in new conditions, to the construction of their personal projects. Relying in a representative sample of 172 individuals, mean age 57.9 (SD=4.45), 84.9% male, recently retired, our findings revealed that they presented and increased quality of life, that the transition process had no influence in their self-esteem and that they maintained their overall economic status. The majority of participants recognized the importance of engaging in an «active life» after retirement. These findings are discussed within the Portuguese context and specificities of that professional category in that country.

634. THE WEIGHT OF ADULT DEVELOPMENT SCORES OF GENERATIVITY AND TRANSCENDENCE ON POSITIVE AND NEGATIVE AGEISM

*J. Ferreira-Alves*¹, M. Lima², R. Novo³, M. Commons⁴, P. Lopes dos Santos⁵, R. Levenson⁶ (¹University of Minho, Braga, Portugal, ²University of Coimbra, Coimbra, Portugal, ³University of Lisbon, Portugal, ⁴Harvard Medical School, Cambridge, Ma, USA, ⁵University of Porto, Porto, Portugal, ⁶Oregon State University, Corvallis, Oregon, USA; alves@iep.uminho.pt)

Introduction. Human development and aging are in some aspects two very interrelated phenomena. In our view,

to conceptualize or to look at aging in a developmental perspective can contribute to a more positive image of old age and aging and enhance cultural change on what means to be aged and about aging. In this study we will explore if higher levels of self-transcendence and higher levels of Generativity on young adults and adults — two different measures of human development — are associated with positive and negative ageism as stated by Palmore (1999). In aging societies, what Erikson called Generativity is probably changing to include not only the care of the next generation but also the care of earlier generations, not only the future, but also the past history from where we can get a sense of the future. We hypothesise that caring for children or for the next generation implies too the care of older citizens. Self transcendence is a measure that reflects the way people use spiritual knowledge to attain a more cosmic awareness of the living things and a decreasing reliance on externals for definition of the self, and the others (cf. Levenson, 1996, Tornstam, 2003). We suppose that higher levels of self-transcendence are related negatively to negative ageism e positively to positive ageism. *Goals.* Explore the relationship between Generativity, self-transcendence and negative and positive ageism. Explore the (changing) ways by which people relate with older adults and its relationship to different scores of Generativity and self-transcendence. *Method. Participants:* About 700 participants (ages 17 till 64) answered to the following instruments: *Instruments:* Loyola Generativity Scale (McAdams & de St Aubin, 1992) — Portuguese version (Ferreira-Alves et col.), Generative Behaviour Checklist (McAdams & de St Aubin, 1992; McAdams, Hart & Maruna, 1998) — Portuguese version (Ferreira-Alves et col.), Adult Self-Transcendence Inventory (Levenson, Jennings & Aldwin, 2004) Portuguese version (Ferreira-Alves & Levenson, 2006), Relating to Old People Evaluation (Palmore & Cherry, 2004). Portuguese version (Ferreira-Alves e col. 2006). *Results:* Generativity is related significantly with positive and negative ageism. Self transcendence is related positively only to positive ageism. Generativity concern and generativity behaviour are significantly related to self-transcendence. Age and gender has important relationships with Generativity but not with self-transcendence. These concepts seems to be an important agenda for understand more the phenomenology of human development and its relationships with some cognitive interpersonal processes related to the evaluation of older persons.

635. CAREGIVING STRESSORS AND LIFE SATISFACTION: FAMILY CARERS OF DEMENTED AND NON-DEMENTED ELDERLY

D. Figueiredo, L. Sousa (University of Aveiro, Aveiro, Portugal; dfigueiredo@essua.ua.pt)

Caregiving to an elderly dependant relative can produce a variety of stressors that might adversely interfere on health and well-being of the family carer. Research on family caregiving has focused mainly the negative impacts on well-being (such as, depressive symptoms and anxiety). Simultaneously, there has been a paucity of research on the relationships between caregiving stressors and positive impacts on subjective well-being, such as life satisfaction. Additionally, caregiving impacts and outcomes have been studied mainly on family cares of demented elderly, becoming essential to compare the consequences of this activity on family carers of dependant elderly with and

without dementia. This study aims at comparing family carers of demented and non-demented dependant elderly in what concerns: i) the relationship between primary objective (activities of daily living dependencies) and subjective (role overload and role captivity) stressors and life satisfaction; ii) the relationship between secondary role strains (family conflict and financial strain) and life satisfaction. The sample comprises 99 family carers of elderly, divided in two subgroups: 52.5% care for a demented elderly and 47.5% for a non-demented one. The Caregivers' Stress Scales (Pearlin *et al.*, 1990) was administrated to assess primary and secondary role strain stressors (activities of daily living dependencies, role overload and role captivity, family conflict and financial strain). Life satisfaction was measured through the Portuguese version of Satisfaction with Life Scale (Diener *et al.*, 1985). Main results suggest that: i) no significant correlations between primary objective stresses and life satisfaction for both sub-samples; ii) significant correlations between role overloaded and life satisfaction for both groups, i. e., feelings of being overwhelmed are likely to accompany a decrease in life satisfaction; iii) significant relationship between secondary role strain (financial strain) and life satisfaction, specially among those who have a demented relative on their own, i. e., caregivers who experience economic strain tend to be less satisfied with life. These findings are consistent with prior research, providing some evidence to support the importance of subjective appraisals on caregiver well-being, contrarily to the objective conditions of caregiving. Moreover, results emphasize the importance of financial support in order to attenuate one of the major needs reported by the literature on family caregiving.

636. DIFFICULTIES, COPING AND SATISFACTIONS: WHAT DIFFERENTIATES FAMILY CARERS OF DEMENTED AND NON-DEMENTED ELDERLY?

D. Figueiredo, L. Sousa (University of Aveiro, Aveiro, Portugal; dfigueiredo@essua.ua.pt)

Previous research on caregiving has focus on family carers of demented elderly, becoming essential to compare the impacts of this activity on family carers of dependant elderly with and without dementia. Additionally, impacts have been described mainly based on negative aspects, such as burden. The exclusion of positive aspects hinders a comprehensive vision concerning the outcomes of family care provided to the elderly. Coping has been described by transactional models of stress as an important moderating variable that help to regulate the relationship between stressors and outcomes. This study aims at identifying and comparing, in family carers of demented and non-demented dependant elderly, the following dimensions: i) main sources of stress/difficulties; ii) major coping strategies; iii) the existence of satisfaction sources. The sample comprises 99 family carers of elderly, divided in two sub-samples: 52.5% care for a demented elderly and 47.5% for a non-demented one. The instruments administered were the Portuguese versions of: CADI (Carers' Assessment Difficulties Index); CAMI (Carers' Assessment Managing Index); CASI (Carers' Assessment of Satisfactions Index) (Nolan, Grant & Keady, 1998). The results suggest that: i) difficulties coexist with satisfactions in both groups of family carers; ii) the major problems for both sub-samples are centred in the physical demands, restrictions in their

social life and financial problems; iii) significant statistical differences have been found in what concerns poor professional support, where the family carers of demented elderly tend to feel more disturbed; iv) the main sources of satisfaction, for both sub-samples, are those where the elderly is the main beneficiary (maintain their self-dignity, provide for their well-being, keep the elderly away from an institution); v) it was not found significant statistical differences concerning coping strategies, however those focused on problem solving seem to be the most useful for both sub-samples. These findings suggest that the identification of family carers' satisfactions constitutes a factor that increases family carers' adaptation to caregiving and the use of effective coping strategies.

637. DISASTERS AND LONG-TERM CARE FACILITIES: A STUDY OF MASSACHUSETTS' NURSING HOMES' DISASTER PREPAREDNESS

K.G. Fitzgerald (University of Massachusetts Boston, Boston, USA; kellyfitzgerald@hotmail.com)

Are long term care facilities' prepared for a major disaster? A review of the existing United States federal and several state nursing home regulations suggests that nursing home administrators in Massachusetts, and possibly many other states, are prepared for emergencies like fires and snowstorms, but are most likely not ready to respond to a major disaster such as one caused by bio-terrorism. The events on September 11, 2001 and the devastating 2004 and 2005 hurricane seasons have revealed that human-made and natural disasters adversely affect the safety and well-being of nursing home residents. While the public sector has begun to address issues surrounding security and emergency preparedness, it has not focused closely on the ability of nursing home administrators to respond to a disaster. Additionally, the limited amount of research on nursing home emergency preparedness illustrates that not much attention has been placed on evaluating the effectiveness of emergency preparedness plans for catastrophic disasters. This presentation will address how facilities in Massachusetts have prepared for disasters and identify key areas for improvement. The goal of the study was to examine the current status and evaluate the potential efficacy of Massachusetts' nursing homes' disaster plans. Data was collected through the following sources: survey of all Massachusetts nursing home administrators, case studies of four select homes, a review of current facility disaster plans and state regulations, and interviews with experts from local emergency and response agencies. Findings from the study suggest that the Massachusetts nursing home industry is not adequately prepared for a major disaster and that steps should be taken to develop or enhance existing plans. Administrators are beginning to think about their disaster plans but most are not prepared for a catastrophic event. Training and communication were two areas found to need major improvement. For example, while administrators conduct some training, they most likely need to increase drills and education to improve staff knowledge of disaster plans. Secondly, communication within and outside of the organization was found to be lacking, and many times non-existent. In addition, evidence revealed that state regulations should be updated to reflect the minimum requirements that the facilities must meet. Overall, findings from the study can be used to enhance nursing home prepared-

ness for future disasters and increase awareness of the importance of disaster preparedness among stakeholders and policymakers, and most importantly, improve safety and care of residents.

638. ETHICS COMMITTEES: DO THEY IMPACT GRADUATE STUDENT RESEARCH?

*K.G. Fitzgerald*¹, *K.J. Baker*², *A. Kupferschmidt*³
(¹University of Massachusetts Boston, Boston, USA, ²University of Southampton, Southampton, England, ³Simon Fraser University, Vancouver, Canada; kellyfitzgerald@hotmail.com)

Research that involves human subjects must be conducted in an ethical manner so that subjects' safety, rights and dignity are preserved. In many countries, university ethics committees have been formed to address this issue. They are necessary to assure that human subjects who participate in research studies are protected from harm and that the research benefits outweigh the associated risks. When students begin to develop their thesis projects, they take into consideration the requirements placed upon them by their university's ethics committee. It is possible that student research is therefore not as robust as a student might like it to be. For example, because of the strict requirements of ethics committees and the time it can take to be granted approval for a thesis project, a student may be deterred from conducting projects involving interaction with human subjects that will be designated more than 'minimal risk.' In this presentation, graduate students will describe and compare their experience with ethics committees in the United States, England, and Canada and the process they had to endure to obtain approval for their research. Each student will discuss issues they faced and how the ethics committee process influenced the type of research they are conducting or plan to conduct. While ethics committees are very important, each student found that the requirements of the committees impacted their research. Therefore, the presenters will offer suggestions on how ethics committees and education programs may better assist students as they prepare the design of their research project and their ethics committee application.

639. SOCIAL WORK WITH 'ELDERLY' PEOPLE IN RUSSIA

V. Fokin, *I. Fokin* (Tula State Pedagogical University; fokine@mail.ru)

The population of Russia is getting older. In 1998 the elderly in Russia numbered 17,2% of the whole population and by the year 2025 their number is predicted to be 23%. The elderly are the most unprotected part of population in reforming Russia. As the result they feel lonely and disillusioned; their whole life seems useless and needless for them now because they don't understand most radical changes in modern Russia. Social work helps the elderly solve their problems. We participated in the founding of the social work profession in Russia in 1991 and want to show some perspectives of its development in the nearest future. These perspectives include: the development of law base of social work with the elderly and state stabilization in its realization; the understanding of the historical and national roots of Russian social work with the elderly; the individualization of social work with the elderly beginning with considering sex, national traditions, health, welfare location and ending with individual peculiarities of every

person; the creation of new and expansion of existing social services. rising the quality of its work; the internalization of social work with the elderly through developing contacts of social workers. educators, NGO of different countries, the usage of Internet's resources, the rising standards of social work education to the world-recognized level. These and other not mentioned directions of the development of social work with the elderly would help to state a Russia model of social work with aging population.

640. EFFECTIVENESS OF A METROPOLITAN, MULTI-DISCIPLINARY GERIATRIC DAY REHABILITATION CENTRE ON SUBJECTIVE AND OBJECTIVE OUTCOMES IN A CONSECUTIVE SAMPLE OF OLDER ADULTS

A. Foley¹, S. Hillier¹, R. Barnard² (¹University of South Australia, Adelaide, Australia, ²Centre for Physical Activity in Ageing, Royal Adelaide Hospital Hampstead Rehabilitation Centre, Adelaide, Australia; Foley.Amanda@saugov.sa.gov.au)

Methods: Pre and post testing was conducted on community-dwelling older adults referred to a geriatric Day Rehabilitation Centre (DRC) for a twice-weekly treatment program consisting of a minimum of two therapies per visit. Consecutive DRC clients were screened for inclusion over a 16 month period and were eligible if: aged 60+ years, cognitively intact and reason for referral involved spinal or lower limb musculoskeletal impairment, disability or surgery, reduced functional mobility or falls. Clients were excluded if they had a neurological disorder, or did not complete the program. All participants were assessed prior to commencing the DRC, and re-assessed at the time of discharge. Outcome measures included: lower limb strength, balance, mobility, self-reported pain, activities of daily living and quality of life. Data were analysed using descriptive statistics and paired t-tests. **Results:** Of the 137 participants recruited, 110 were females, and mean age was 79.5±7.3 years. Primary reasons for referral included: chronic pain (n=29, 21.2%), reduced strength/balance/mobility (n=25, 18.2%), falls (n=23, 16.8%), and joint replacement (n=13, 9.5%). 106 participants completed the DRC program and were re-assessed at time of discharge. Mean length of stay was 12.4±2.9 weeks and 21.4±5.4 attendances. From baseline to discharge, statistically significant differences were found for self-selected and maximum gait speeds, 30-second Chair Stand Test, Timed Up and Go Test, 6-Minute Walk Test, Berg Balance Scale, and for all lower limb strength tests (p<0.0001). Glasgow Pain Scale demonstrated statistically significant improvements in all five domains of the scale (p<0.0001). Barthel Index and Multi-dimensional Functional Assessment Questionnaire both showed a statistically significant improvement in the level of independence with activities of daily living (ADL) (p<0.0001). Assessment of Quality of Life Questionnaire showed a statistically significant improvement in self-reported quality of life (p<0.0001). The Falls Efficacy Scale showed a positive change, however the improvement was not statistically significant (p= 0.80). **Discussion:** The study's results indicate that clients attending the multi-disciplinary geriatric DRC, significantly improved their lower limb strength, balance and physical function, and also showed significant improvement in self-reported pain, independence with ADLs and quality of life. Whilst it could be argued that some of the clients were experiencing spontaneous recovery (e.g. those post-surgery), the majority of study participants had no specific pre-intervention event

and were referred for general deconditioning or chronic conditions (n=103, 75.2%). This study therefore confirms that community-dwelling older adults can improve in both subjective and objective domains of physical functioning with targeted services.

641. LONGEVITY, HEALTH AND WEALTH, A CHALLENGE FOR EUROPE

F. Forette¹, M.A. Brieu² (¹ILC-France, University, Paris V, ²Univversity Paris V Alliance for Health and the Future; francoise.forette@brc.aphp.fr)

The striking increase in longevity is a privilege of developed nations as long as the aging population remains healthy and active. In the middle of this century Europe will become the oldest continent in the world due to a continuous rise in mean life expectancy and a rather low fertility rate. Deep inequalities persist within and between the different European countries in terms of health status and rate of employment of senior citizens. Western Europe inhabitants may expect to live 6 years longer than in Central Europe and 10 years longer than in the New Independent States born after the dissolution of the Soviet Union. An inescapable consequence of the demographic evolution is a worldly increase in the dependency ratio (65+/15-64), particularly marked in Europe. The challenge of the nations is to promote simultaneously health and activity as a lifelong perspective. Indeed, health as measured by life expectancy is a significant predictor of subsequent economic growth (WHO 1999). The key factors of mortality reduction and health promotion are the economic level, the educational level, particularly of adult females and the generation and utilization of new knowledge. Over the past three decades in Europe, the premature mortality by cancer has been reduced by 12%, this by ischaemic heart disease diseases by 42%, stroke by 57%, diabetes mellitus by 36% and asthma, emphysema, bronchitis by 73% (WHO 2003). Degenerative diseases such as Alzheimer's will also represent an important challenge in terms of research and care. They are responsible of 70% of the causes for institutionalization. Besides the promotion of health, the main objective of the nations must be to guarantee that the labor market fosters productive engagement of seniors and does not compromise the rights of the expanding aging population. Indeed, research shows that a healthy and active later life age brings with it enormous economic and societal benefits for individuals, communities and nations. The goal of the Alliance for Health and the Future is to address this issue by working with governmental and non-governmental organizations, institutions and companies and by promoting the principle that all countries, in the North and the South of the Planet, must equally benefit of the fantastic venture of longevity.

642. SOCIO-DEMOGRAPHIC FEATURES AND MEDICAL CONDITIONS ASSOCIATED TO DEPRESSIVE SYMPTOMS IN A «STROKE-SURVIVORS» POPULATION

C. Forlani¹, A.R. Atti¹, V. Morini¹, B. Ferrari¹, P. Casadio¹, E. Dalmonte², D. De Ronchi¹ (¹Institute of Psychiatry «P.Ottonello», University of Bologna, Bologna, Italy; www.istitutopsichiatria.unibo.it, ²Unit of Geriatric Medicine, Local Health Authority of Ravenna, Ravenna, Italy)

Background. Stroke is the first cause of disability in the elderly [1] and the third cause of mortality [2]. Studies concerning post-stroke depression found that depres-

sive symptoms were more likely to be associated with disability [3, 4], whilst no relationship emerged between depressive symptoms and somatic chronic diseases [4, 5]. The influence of female gender was conflicting [3–5]. The aim of the study was to evaluate which socio-demographic features or medical conditions were associated to complaint of depressive symptoms among stroke-survivors from the «Faenza Community Aging Study» [6]. *Methods.* 816 stroke-survivors (aged 61–102 years) were cognitively examined and underwent a semi-structured interview assessing socio-demographic data, health status and complaint of depressive symptoms. Associations between socio-demographic or medical factors and presence or absence of depressive symptoms were evaluated by logistic regression analyses, that allowed us to compute the Odds Ratios (OR) and relative 95% confidence intervals (95%CI). *Results.* The mean age of stroke-survivors was 77.5 years (standard deviation 8.4), and 58.9% of them were women. Depressive symptoms were referred in the 14.3%; an underestimation [3] might have occurred because of the diagnostic procedures. Female sex was strongly associated to presence of depressive symptoms, even after adjustment by age, education and degree of self-sufficiency (OR(95%IC)=1.91(1.23-2.96)). Partially or totally dependent subjects were more likely to have low mood, as detected in sex, age, education adjusted models (OR(95%IC)=1.83(1.17-2.87)). A score equal or below 24 on the Mini-Mental State Examination was associated to more frequent complaints of depressive symptoms only in the crude model (OR(95%IC)=1.58(1.05-2.36)), whereas dementia (DSM-III-R diagnosis) was not associated to low mood. Cardiovascular disease was positively associated with depressive symptoms, also including sex, age, education and self-sufficiency levels as possible confounders (OR(95%IC)=1.64(1.09-2.47)). When hypertension was separately considered, an OR(95%CI)=1.83(1.21-2.76) was detected. Osteoporosis and osteoarthritis were associated to an higher prevalence of depressive symptoms (OR(95%IC)=2.45(1.55-3.88)) in a sex, age, education and self-sufficiency levels adjusted model. No other conditions or voluptuary habits were related to low mood. *Conclusions.* Together with motor symptoms, depressive symptoms are known to be important determinants of post-stroke quality of life [7]. Since therapeutic strategies are nowadays available, detection of conditions that are frequently associated to low mood is relevant. *References:* [1] Murray et al, 1997; [2] Wolf et al, 1989; [3] Paolucci et al, 2005; [4] Burvill et al, 1997; [5] Li et al, 2003; [6] De Ronchi et al, 2005; [7] Haacke et al, 2006.

643. MENTAL HEALTH OF THE OLDER PEOPLE IN MADEIRA AUTONOMOUS REGION

I. Fragoeiro (University of Madeira Higher School of Nursing; isabelfragoeiro@hotmail.com)

The WHO and the European Council (2005) consider elders to be a priority intervention group with regard to mental health. The intervention emphasis should be put on the community, foreseeing and working out the best responses with regard to primary health care. In the Madeira Autonomous Region the older population has increased gradually and it has become important to develop policies and set out responses to meet the needs identified for this population group. Scanning enables different situations to

be detected and this is of fundamental importance for setting out policies and defining specific programmes which are better suited to the realities identified. Mental health was assessed in this study in accordance with the structure proposed by Ware & Veit in 1984, which considers a positive dimension — psychological well-being — and a negative one — psychological distress. The objectives of the cross-sectional study we performed were to characterize the mental health of Madeira older people and to determine the prevalence of a good mental health level's and psychological distress of the elders. Sixty hundred and thirty elders aged 65+ were randomized chosen by gender, age and municipalities, from the Regional Health Service User Card data base. To assess the cognitive capacity of the elders who accepted participate (427) we used the Mini Mental Health Examination and 19,9% of them had cognitive dysfunction. The remaining 342 elders were included in the sample. Most of them belonged to the lower social classes (Graffar Social Classification) and had relatively extensive social networks (Lubben's Social Network). They could also carry out Daily Life Basic Activities (Katz Index) and were autonomous in Daily Life Instrumental Activities (Lawton and Brody's scale). The older people who had their mental health assessed through the Mental Health Inventory (MHI) had an average score for all of the items making up the inventory of 160,91 with a standard deviation of 34,14. The median was 166,50. This score was greater than that found by Ribeiro (2001) in Portuguese secondary and university students (150,65). This reveals a high average mental health level for the older people studied and shows a positive situation in relation to their mental health. We have determined that 67% of the elders had good mental health and 3,2% had a higher level of distress. This result provides us with an initial characterization of the mental health of older people of Madeira Region.

644. PERSONALIZED CARING PLAN (PCP) FOR ELDERLY IN NURSING HOME

M. Gandelli, I. Santi, A. Fasolino, M. Baiardi, M. Monti, F. Nitti (Nursing Home Department, Geriatric Institute «Pio Albergo Trivulzio», Milan, Italy; concorsi@pioalbergotrivulzio.it)

Assessment and discussion of institutionalized old patients' needs for physical, psycho-social support should be undertaken at key points. Each multidisciplinary team should implement processes to ensure effective inter-professional communication within its members and between them and patient/family system. The PCP is a tool to highlight the problems, to find suitable solutions and to achieve real objectives. It should be used following a comprehensive assessment of an individual's care needs, as a way of bringing together and recording various needs in a single, understandable format, to facilitate logical and consistent decision-making. The elaboration of PCP by the caring team in Nursing Home (NH) residents allows the holistic and multidimensional approach to patient and his/her family. The PCP was periodically audited; in our experience the main domains were the following: clinical, nursing, rehabilitative, psycho-social. The goal of the present study was to value the effectiveness of this tool for elderly residents in NH. Fifty females admitted to NH for 98 months have been valued (mean age: 87,3 yrs); 10 pts were institutionalized in a «Alzheimer Special Care Unit» (ASCU). Each patient had a comprehensive geriatric assessment (using: Barthel

Level of objectives' achievement	Clinical		Psycho-Social		Nursing		Rehabilitative	
	NH	ASCU	NH	ASCU	NH	ASCU	NH	ASCU
Totally	70%	70%	55%	80%	100%	80%	30%	80%
Partially	20%	30%	35%	20%	0%	20%	20%	20%

Index, Mini-Mental State Examination, Cumulative Illness Rating Scale). The PCPs of each patient and their periodical audits have been retrospectively evaluated according to prearranged criteria. *Results:* Level of objectives' achievement in institutionalized elderly (derived from PCP).

The objectives' achievement was satisfying in both NH and ASCU residents. The greatest difficulty in NH patient was to maintain the functional autonomy. So, formative programs focused on this theme have been organized for team members. Instead, among the ASCU patients it was more difficult to control behavioural and psychological symptoms and to continue both the rehabilitative and recreational activities. Furthermore, some caregivers have been actively involved in PCP. *In conclusion:* the periodical elaboration of the PCP enables to involve, increase in value, train and gratify all professionals who take care of the institutionalized patient. PCP represents a guideline for team members to focus on quality of care provided to residents and their quality of life allowing a periodical audit both of team's work and patient's needs. However, more shared criteria are needed to implement the use of this tool and improve his utility.

645. BACK SAFETY IN GERIATRIC PATIENT HANDLING

J.S. Geiger, O. Bachar (Golden Tower Hospital, Bat Yam, Israel; joansas@netvision.net.il)

Healthcare workers are at high risk for musculoskeletal injuries incurred at work. Healthcare workers in the geriatric setting have been shown to have an injury rate almost twice that of workers in other sectors. Biomechanical and epidemiological studies have related a high proportion of nursing staff injuries to patient transfer and handling activities. In long-term care wards, these activities are particularly intensive, as many patients are transferred between bed and chair or wheelchair six or more times daily. These repeated transfers pose serious risks to the safety of staff and patients alike. In the past, emphasis has been placed on instructing nursing staff in body mechanics for patient transfer and manual lifting techniques. More recently, government agencies and nursing organizations worldwide have recommended minimizing patient handling risks by implementing ergonomic no-lift programs in primary and secondary hospitals. In a pilot program in a geriatric hospital in Israel, an ergonomic training program was implemented in several stages, first on a rehabilitation ward, and subsequently on a skilled nursing care ward. The purpose of the program was threefold: First, to institute criteria for defining a transfer policy for each patient, including the type of transfer equipment required, if any, and the amount of assistance needed. Secondly, a program of communication between the physical therapy and medical and nursing staff was established to ensure the most appropriate transfer procedures for patient and staff safety. Thirdly, all nursing and physical therapy staff were provided with instruction in proper use of lifting equipment and back care techniques to prevent injury. Emphasis was placed on minimizing manual patient lifting except where specifically indicated. Additional aspects of the ergonom-

ic program included continued follow-up and support of nursing staff and ergonomic involvement in purchasing decisions regarding lifting equipment.

646. CHANGES IN HOUSEHOLD COMPOSITION AND THE CONSEQUENCES FOR SUPPORT ARRANGEMENTS OF OLDER ADULTS

J. Gierveld (Netherlands Interdisciplinary Demographic Institute; gierveld@nidi.nl)

One of the most dramatic changes of the last century is the extension of life. Life expectancy has risen at a rapid pace and changed people's lives over the last century. These changing patterns of mortality together with the changing patterns of fertility and changes in marriage patterns (e.g., the increasing instability of partner relationships) have led to changes in the size and composition of the household and in the architecture of families: a decrease in co-residence, increase in older adults living in one-person households, family members being alive together for increasing lengths of time, and a growing heterogeneity and complexity in the spectrum of marital and partner experiences. In this paper the size and composition of the households in which older persons live, and the related familial embeddedness, more in particular the familial support given and received by older men and women will be addressed, taking into account country and regional differences in Europe. Data about the household composition, familial embeddedness, and support arrangements come from the databases of the Gender and Generation Program, initiated by the Population Activities Unit of the UNECE. The data consist of an international comparative macro level data base and international comparative micro level data, based on the outcomes of the Gender and Generation Surveys executed in more than 12 countries in Europe. First outcomes of this program will be presented (data from Russia, Bulgaria, and the Netherlands). The absence of a partner in the household is strongly negatively related to quality of life in each of the countries. However, the effect of the number of household members (co-residence of children and grandchildren), and the number and proximity of children living outside the parental household, on support exchanges and quality of life differs significantly between Eastern and Western European countries.

647. CHANGING HOUSEHOLD COMPOSITION, FAMILIAL TIES AND QUALITY OF LIFE OF OLDER ADULTS IN WEST AND EASTERN EUROPE

J. Gierveld (Netherlands Interdisciplinary Demographic Institute, The Hague, The Netherlands; gierveld@nidi.nl)

In this paper the size and composition of the households in which older persons live, the related familial embeddedness, and loneliness will be addressed, taking into account country and regional differences in Europe. Data about the household composition, familial embeddedness, and quality of life come from the database of the Gender and Generation Surveys, initiated by the Population Activities Unit of the UNECE. First outcomes of this program will be presented (data from Russia, Bulgaria, and the

Netherlands). The absence of a partner in the household is strongly negatively related to quality of life in each of the countries. However, the effect of the number of household members (co-residence of children and grandchildren), and the number and proximity of children living outside the parental household, on support exchanges and quality of life differs significantly between Eastern and Western European countries.

648. COMMUNITY CONTRIBUTIONS OF RURAL ADULTS

J. Gierveld¹, J. Fast² (¹*Netherlands Interdisciplinary Demographic Institute, The Hague, The Netherlands,*
²*University of Alberta, Edmonton, Canada; gierveld@planet.nl*)

Age and/or activity limitations are often assumed to restrict individuals' ability to contribute to their social network and broader community, limiting opportunities for full participation. Rural communities have been argued to be both inclusive and hostile to people with chronic health problems or disabilities because of culture, climate, built environment and service limitations. The purpose of this presentation is to describe the contributions and social networks of rural Canadian adults, with and without activity limitations, at different stages of the adult life course. We also explore the extent to which contributions and social networks are associated with community connectedness. (While adults with activity limitations do contribute to their communities in meaningful ways (by performing volunteer work, making charitable donations, helping others, and belonging to community organizations), they are less likely to do so than those without limitations and in turn report a weaker sense of belonging to the community. On the other hand, rural adults' sense of belonging is stronger than that of their urban counterparts, even if they are confronted with limitations. This sense of belonging is also stronger among older adults with or without activity limitations, as compared to younger adults, and is stronger among those with large social networks. We discuss the meaning of these findings with regard to whether rural communities are good places to grow old, with and without disability.

649. CYBER-SENIORS: DETERMINANTS OF INTERNET USE AMONGST RESPONDENTS IN THE ENGLISH LONGITUDINAL STUDY OF AGEING

C.J. Gillieard (*Centre for Behavioural and Social Science in Medicine, UCL, London, UK; CGillieard@aol.com*)

This paper describes PC home ownership and Internet use amongst a large representative sample of the over fifties in England surveyed in 2002/3. PC ownership was a key determinant of Internet use. PC ownership was associated with higher education and income status, residency in areas of minimal deprivation, membership of younger age cohorts, work vs. retirement status and absence of AD impairment. Amongst those who did not have their own PC, the main distinction between those who did and did not use the Internet was in terms of education, health and family relationships. The implications of these findings are discussed in terms of an emerging 'digital divide' within the retirement age population of Western society.

650. GLOBAL APPROACH TO SENIORS AND DISASTERS

M. Gillis (*Division of Aging and Seniors, Public Health Agency of Canada; Margaret_Gillis@hc-sc.gc.ca*)

The Madrid International Plan of Action on Aging, 2002 issued a call for action to ensure equal access by older

persons to food, shelter and medical care and other services during and after natural disasters. To raise awareness of the vulnerabilities and unequal treatment of older persons in disaster situations, a Presidential Symposium on the 2004 Tsunami was convened at the 2005 World Congress of the International Association of Gerontology and Geriatrics. Participants/audience included representatives of key UN agencies (e.g. WHO, UN Programme on Ageing, UNFPA), international NGOs focused on aging (e.g. ILC, Help the Aged, HelpAge International, IAGG) as well as government agencies, among them, the Division of Aging and Seniors (DAS), Public Health Agency of Canada. In December 2005, DAS hosted a meeting of international participants attending the White House Conference on Aging who were interested in creating a framework and principles for international cooperation on issues of seniors in emergency situations. A small expert working group met in February 2006 in Toronto, Canada, to follow up on this commitment and facilitate the exchange of knowledge and best practices on emergency preparedness and seniors among international, provincial, and territorial governments, and non-government experts. This was followed by the larger Winnipeg International Workshop in February 2007. This presentation will describe recommendations from the Winnipeg workshop, with special emphasis on their implications for intersectoral policy development. As well, it will describe actions taken to date by DAS and its national and international partners to assist in global efforts to reduce the risks faced by older people in disasters and to facilitate their contributions to emergency response and rebuilding.

651. ACTIVITY ENGAGEMENT, FRAILTY AND WELL-BEING IN LATER LIFE: A TEN-YEAR LONGITUDINAL STUDY IN SWITZERLAND

M. Girardin¹, J.-F. Bickel², Ch. Lalive d Epinay¹ (¹*Center for Interdisciplinary Gerontology, University of Geneva, Switzerland,*
²*University of Fribourg, Switzerland; Myriam.Girardin@cig.unige.ch*)

The goal of our communication is to investigate how the continuity in activity engagement is related to well-being among chronic frail oldest old. The empirical data are issued from the Swiss Interdisciplinary Longitudinal Study on the Oldest Old (SWILSOO) — an interdisciplinary study on aging in the French-speaking region of Switzerland. A cohort of 340 community-dwelling octogenarians, aged between 80 and 84 years old at baseline, was interviewed at intervals of 12 to 18 mos. from 1994 to 2004. The analyses were processed on the sub-sample of those living at home, directly interviewed and suffering from chronic frailty. We define as frail the individuals who have no incapacities on five basic ADL but suffer from at least two deficiencies in the five following dimensions of health: mobility, memory, energy, physical or sensory capacities. We examine the affective and the cognitive dimensions of well-being. We use affective well-being (mean index of positive and negative affects) to measure the first dimension of well-being and the perception of health (mean index of two items: self-rated health and the frequency of worries about one's own health) to evaluate the second one. We take into account in the analyses an index of types of activities (media, reading, leisure, manual, external-physical, social and religious activities). As statistical procedure, multi-level models were applied. After having controlled by the level of well-

being and health at time T, we have observed the effects of continuity in activity engagement on well-being at time «T+2». The two dimensions of well-being were considered separately. Results show that chronic frail oldest old who have maintained their initial level of activities have a better well-being than those who have reduced their level of activities. These results confirm that continuity in activity engagement plays an important regulatory role which allows for adaptation the frailty process in later life.

652. FRAILTY PROCESS AND WELL-BEING: AN EVALUATION OF THE DOWNWARD SOCIAL COMPARISON EFFICIENCY IN LATER LIFE

M. Girardin¹, D. Spini², V.A. Ryser² (¹Center for Interdisciplinary Gerontology, University of Geneva, Switzerland, ²Center for Life Course and Life Style Studies, Universities of Geneva and Lausanne, Switzerland; Myriam.Girardin@cig.unige.ch)

This study deals with the efficiency of downward social comparison as a mechanism for adaptation during the frailty process. We investigate the relations between health evolution, well-being and downward social comparison in two age classes of later life (80–85 and 86–94 yr of age). Data are issued from the Swiss Interdisciplinary Longitudinal Study on the Oldest Old (SWILSOO): 295 community-dwelling octogenarians, aged between 80 and 84 years old at baseline, were assessed at intervals of 12 to 18 mos. from 1994 to 2004. We examine the affective and the cognitive dimensions of well-being. We use an index of affective well-being to measure the first dimension and an index of perception of health to evaluate the second one. Downward social comparison was measured by the question: if you compare your health to that of your peers, would you say it is better, equivalent or worse? To assess health, we used three health statuses: robustness, frailty and ADL-dependence. Then, we constructed individual health trajectories on two successive waves in order to observe health evolution. Our analyses were based on Wilcoxon tests, measures of association and variance analyses (Anova). The analyses show that, before 85 years old, social comparison is positively associated with well-being stability even when health declines. But after the age of 85 years, well-being decreases as soon as health declines even when the association between well-being and social comparison is positive.

653. GROWTH OF DEPRESSION AND AGGRESSION LEVEL IN ELDERLY AGE

V.V. Glebov (State Pedagogical University, Russia, Biisk; vg44@mail.ru)

The world organization of public health services marks that the quantity suffering depression in the world has made 121 million people. And, first of all the number suffering this disease has increased as a result of the increased life expectancy. Older persons are especially inclined to occurrence of depressive frustration or aggressive behaviour. With continuing falling a standard of living, deterioration of social and economic and ecological conditions in Altai region the number of people grows, is especially in elderly age suffering depressions and aggressive displays. For revealing a level of mental health of elderly citizens by us it has been undertaken pilot research in which has taken part 730 person. *Methods of research.* Psychological tests (the Bass-Dark), Questionnaire Kettell PF-16, Spylberger-

Khanin's teSt. Psychophysiological testing — EEG. *The received results and their discussion.* Results of psychological and psychophysiological testings have revealed a high level of depression (56%) and aggressive behaviour (44%) at examinees. The data on revealing aggressive behaviour under psychological tests have shown a high degree of irritation, negativism, insult, suspiciousness, indirect aggression, verbal aggression and feeling of fault. The analysis of interval histograms has revealed lengthening of cycles of sleep at patients with depression; shortening of a latent period of its occurrence, reduction of an index delta and increase of tetra-activity. Taking into account known communication of negative emotions with the right hemisphere of a brain and a role of sleep in the sanction of psychological disputed motives, we have revealed at patients with depression the increased asymmetry of parameters EEG with its maximum in stages of sleep, and also a plenty of activity in all ranges in a right hemisphere. At group of patients with disturbing depression character of electrophysiological parameters specifies increase of a tone of a sympathetic department of vegetative system though attributes and its functional insufficiency have been marked. This type of depression, has been connected to deficiency as serotonin (in the greater degree), and noradrenalinum, and was shown disbalance their interactions. In our electrophysiological researches during depression infringement interhemisphere balance, frustration of dream (duration of general time of dream is reduced, its latent phase is increased, duration slowundular (slow-wave) stages is considerably reduced, the latent phase of fast movements of eyes is reduced, frequency of fast movements of eyes is raised and the fourth phase of sleep is reduced), change of natural biological rhythms (a rhythm «sleep — wakefulness»), rhythms of change of a body temperature (changes within day has been revealed, reaching the highest point in second half, and by the lowest — during sleep), arterial pressure, secretions of hormones, periodic changes hypomaniacal and depressive conditions. Thus, the lead research shows disturbing growth of depressive and aggressive displays in sample of older persons of town of Biisk. All this negatively influences social-psychological conditions in a region which is shown in growth of suicides and to increase of the general level crimina.

654. PLACEMENT IN NURSING HOME VERSUS HOME MAINTENANCE IN BRUSSELS: PROCESS ANALYSIS

M.N. Gobert, M.C. Closon (CIES-SESA — UCL; gobert@sesa.ucl.ac.be)

Introduction. The process of nursing admission is very complex: several factors must be taken account: age, gender, relational support, incomes, education, subjective health, functional and cognitive abilities. In a medico-functional approach of frailty, the presence of one or several factors is associated to nursing admission. But these factors cannot explain all process of elderly placement. But only 6% of elderly (>65 years) lived in nursing home. Our question was: at same level of objective health status, why some elderly rested at home and other, with the same characteristics, was placed? Which process can explain this difference? *Method.* A qualitative study was conducted to examine the decision-making process, the negotiation process of weakening, process of placement acceptance, process of autonomy's loSt. In-depth interviews were con-

ducted near 2 different elderly convenience samples with the same characteristics of age (> 65), gender and functional decline. For each elderly living in nursing home (6 month or less), an elderly living at home with the same characteristics were also interviewed (N=20). Inductive analyses were conducted according the principles of the Grounded theory. *Results.* Live story and ageing perception contributed to explain the process of institutionalisation versus home maintenance. Elderly at home lived the ageing as an accumulation of years; they took, a long time ago, several dispositions (professional services, informal aids, accommodation). For them, the ageing was more lived than subjected; this was a collective problematic taking into account by the society. For elderly living in nursing home, they underwent to their ageing without using help of professionals and other services. The placement occurred at crisis time, a situation of no return. The ageing was a personal or familial problem without interest for society. In the light of these results, we can assume the assumption of 'a double trajectory'. For elderly at home, the ageing is a normal process and internal and external adaptations were natural. For elderly in nursing home, the ageing was a lost, an individual problem and the nursing home admission a unique solution. *Discussion.* The socio-environmental approach was privileged. The old age is a precarious balance requiring a permanent work of adaptation for elderly, family, caregivers; without adaptation, the old age can lead to maladjustment of life sphere, withdraw attitude, disinvestments in social sphere. Our attention was focused on subjective perception of elderly in the light of «déprise» theory.

655. IMPACT OF CONTEXTUAL EFFECT ON SUBJECTIVE HEALTH STATUS AMONG ELDERLY

M.N. Gobert, J. Pierart, V. Lorant, M.C. Closon (CIES — SESA — UCL; gobert@sesa.ucl.ac.be)

Introduction: With ageing, elderly reduce the quantity of their relations with neighbourhood for the benefit of quality of them. This is a phenomenon of «strength economy» called «déprise» by Clement. But living in a neighbourhood with good community facilities and services and feeling safe in ones neighbourhood contributes to quality of life for the elderly. The impact of compositional effect (individual socioeconomic status, age, gender) on health was not easy to discern of contextual factors because «people make places and place make people» How do share out the impact of compositional versus objective and subjective contextual factors on health of elderly? The study aim is to select the main compositional and objective and subjective contextual factors to explain a maximum of variance into subjective health status among elderly people. Our hypothesis was: the subjective contextual characteristics, after standardisation with compositional effect, explained more the subjective health than the objective contextual characteristics. *Methods:* Our hypotheses were tested among aged more 65 years living in an urban area — Brussels in Belgium. The 2001 census and URBIS databases were used. Our health outcome was the subjective health status; several independent variables were individual characteristics, objective and subjective characteristics of neighbourhood. We have tested several models (hierarchical linear model) and compared their power

of explained variance about subjective health status. The analyses were conducted in SAS software. *Results:* There are strong variations of the risk of subjective bad health from one district to another (variance estimated at almost 0,13). With the introduction of individual characteristics (age, sex), the variance to explain was 0,16. This model constituted our standard. Taking the educational level and working activities into account, the part of variance to explain decreased to 0,06 and to 0,04 with accommodation' characteristics; the part of variance to explain decreased 63% and 21% respectively. The subjective contextual factors explained 45% of variance and the objective contextual factors only 12% (part of variance =0,025 and 0,022 respectively). *Discussion:* Our results confirmed that each individual variable contributed differently to the reduction in the inter-district variation. Thus it is noted that some variables located between individual and context that make the difference: To understand the effect of subjective contextual effect, «it is less a matter of the immediate physical effects of inferior material conditions than of the social meanings attached to those conditions and how people feel about their material circumstances and about themselves». Elderly were more affected by subjective characteristics of their neighbourhood than objective characteristics.

656. VULNERABLE AND INVISIBLE? — CHALLENGES OF A VICTIMOLOGY OF THE FOURTH AGE

T. Goergen (Criminological Research Institute of Lower Saxony, Hannover, Germany; goergen@kfn.uni-hannover.de)

Large-scale surveys in adult populations international-ly show a strong age-related decline of victimization risks (with regard to crimes, but also to domestic violence). At the same time, a growing body of elder abuse research highlights older people's vulnerability and the specific victimization risks associated with old age. This paper discusses the opposing views of old age as a risk factor for victimization and as a protective factor. It argues that large-scale fully standardized surveys can give a fairly accurate picture of victimization risks in the «third age», but are rather inadequate to measure risks in the «fourth age», especially with regard to care recipients and dementia sufferers.. These surveys presuppose that people are able (and willing) to report their experiences as victims in the required format. Whereas high age does not preclude this ability, age-related changes and losses simultaneously affect people's vulnerability, their ability to demand criminal prosecution, and the probability that victims will be part of the sample of a large-scale victim survey. This creates the danger that the most vulnerable segments of the elderly population become «invisible» both for the criminal justice system and for social science research. Proceeding to a more comprehensive picture of the extent and nature of victimization risks in the «fourth age» requires methodological approaches going beyond standardized victimization surveys and integrating medical and other non-survey data, surveying people other than the possible victim in their role as potential offenders, witnesses, or experts, and adapting instruments of victimization research to make then applicable to samples of old people with functional and cognitive deficits. An outline of a «victimology of the fourth age» is sketched, stressing the necessity of multi-method approaches and multidisciplinary research.

657. OLD AGE AS A SAFE HAVEN? PREVALENCE AND RISK FACTORS OF ADULT VICTIMIZATION IN GERMANY

T. Goergen¹, S. Herbst¹, W. Greve², C. Tesch-Roemer³
 (¹Criminological Research Institute of Lower Saxony, Hannover, Germany, ²University of Hildesheim, Institute of Psychology, Hildesheim, Germany, ³German Centre of Gerontology, Berlin, Germany; goergen@kfn.uni-hannover.de)

The paper reports findings from a population-based victimization survey conducted in 2005. The random sample consists of 2,096 subjects in age range 60–85 yr (mean age 69.7 yr) and 914 in age range 40–59 yr (mean age 49.0 yr). Data are from face-to-face interviews on property, violent and sexual offences and from a self-report questionnaire on violence/abuse by family and household members. With regard to criminal victimization, 12-month and 5-year prevalence rates are significantly lower for 60–85 yr olds than for younger adults (e.g. 12-month: 6% vs. 13% for men and 7% vs. 12% for women). The risk of victimization during the last 5 years is higher for people who live in metropolitan areas, have experienced critical life events, perceive their informal social support as insufficient and participate in outdoor activities frequently. Comparisons with findings from a 1992 survey using a similar methodology point to a general decline of victimization risks for middle-aged and older adults. With regard to domestic violence, prevalence of both physical and psychological victimization is significantly higher among middle-aged adults than among those beyond age 60 (e.g. 12 month rates for physical assault: 4.5% vs. 1.6% for women and 3.4% vs. 1.3% for men). In a subsample of 241 people 60y+ who had required care within the last 5 years, 15% reported problematic behaviour by carers. The risk of severe domestic violence during the last 5 years is higher for people who have experienced verbal aggression and serious conflict with intimates, claim a lack of social support and are out of the home frequently. Women are more at risk than men. Findings are discussed with regard to the relative importance of chronological age as a predictor of victimization risks, the limitations of cross-sectional victimization studies and the limits and opportunities of conducting victimization surveys with regard to old age.

658. THE MEASUREMENT OF PSYCHOLOGICAL PERFORMANCE IN ELDERLY PEOPLE WITHIN THE CONTEXT OF THE THEORY OF COMPETENCE IN AGEING

J.J. Gomez-Gude (jgude@uvigo.es)

This study discusses the appropriateness of using one or another method of measuring cognitive performance in the elderly, and other aspects of personality. We present the conditions in which the cognitive performance of the elderly can improve, based on the following postulation: senescence as a stage of competences. The skills which we aim to measure in ageing and the adaptation to these of the instrument employed, in accordance with whether that instrument corresponds to a method based on resources, or on the contrary, corresponds to a method based on competences. This work forms part of a broader research project which has examined a number of individuals aged over 65 and who are still in charge of various companies or have high-level responsibilities. The technique used in the study was that of observation in the workplace, interviews and

clarification by the elderly person studied. Various factors were uncovered as influencing successful performance, factors which are not measured by the intelligence tests in use: Planning/causal thought, diagnostic information searches, conceptual/synthetic thought, capacity for influence, interest in influence, directive influence, collaborative influence, symbolic influence, additional competence, self-confidence. The results obtained concur with other studies undertaken in this field.

659. IMPACT OF AGING ON HORMONAL REGULATION ON ANTI-OXIDANT ENZYME ACTIVITIES

N.D. Goncharova¹, T.N. Bogatyrenko², B.A. Lapin¹
 (¹Institute of Medical Primatology of RAMS, Sochi-Adler, Russia, ²Institute of Problems of Chemical Physics of RAS, Chernogolovka, Moscow; ndgoncharova@mail.ru)

Previously we reported that the diurnal changes in the erythrocyte superoxide dismutase (SOD) tightly correlate with the diurnal changes in the plasma levels of cortisol (F) and dehydroepiandrosterone sulfate (DHEAS) in monkeys and these diurnal rhythms of SOD, F and DHEAS are flattened with aging. *The aim* of the study was to examine chronobiological characteristics of the hypothalamic-pituitary-adrenal (HPA) axis functioning and the antioxidant enzyme activities in stress and aging. Female *Macaca mulatta* of 6–8 yr (young mature) and 20–27 yr (old) were subjected to acute psycho-emotional stress (two hours immobilization) at 9.00 or 15.00. Levels of ACTH, F, DHEAS, and testosterone (T) in peripheral blood plasma were measured before the stress and 5, 15, 30, 60, 120, 240 min and 24 h after the challenge. In parallel, activities of SOD, glutathione peroxidase, glutathione reductase (GR), and glutathione-S-transferase were measured in hemolyzed erythrocytes. Young monkeys demonstrated much higher increase of ACTH, F, T, DHEAS levels and GR activity in response to the stress imposed at 15.00 than to identical stress imposed at 9.00. However, no such circadian differences in dynamics of the hormonal secretion and GR activity after the stress were found for old animals. Young monkeys demonstrated also much higher accretion of ACTH, F, T, DHEAS levels and GR activity in comparison with old monkeys in response to the afternoon stress. The changes in GR activity with stress and aging correlated well with the changes in the corticosteroids level. SOD activity in old monkeys also increased in response to the stress and the dynamics of SOD activity correlated well with the changes of the corticosteroids levels. In contrast to old monkeys, young ones demonstrated decrease of SOD activity in response to the stress and there was no correlation between stress dynamics of F, T, DHEAS levels and SOD activity. The decrease of SOD activity with stress in young monkeys was accompanied by pronounced increase of T level. These results suggest that the HPA axis plays an important role in regulation of erythrocyte antioxidant enzymes defense not only in basal conditions but also in stress conditions and that this regulation shows marked age differences. The age-related changes in hormonal regulation of the antioxidant enzyme activities may induce disorders in redox homeostasis, antioxidant defense and erythrocyte functions. *Supported by the RFBR (grant 06-04-97616-r_yug_a).*

660. INTERVENTION PROGRAMME FOR CAREGIVERS OF DEPENDENT ELDERLS

I. Gonzalez-Abrales, A.I. Pedreira, L. Fernandez, M.C. Sieiro, P. Marante, J.C. Millan-Calenti (*Gerontology Research Group and Adult Day Care Center La Milagrosa, University of A Coruna, 15006 A Coruna, Spain; isag@udc.es*)

Adults aged over 65 are one of the population's fastest growing segments worldwide. This aging process will imply an increase in the prevalence of the age-dependent pathologies (including those with loss of functional ability and need of a third person to manage the basic daily life activities). This fact entails the need of care-related requirements, usually covered by family caregivers. The increase in the psychological burden experienced by these caregivers, together with a higher dependence degree of the patient, are factors to be taken into consideration. On the basis of decreasing this caregiver burden, professionals from the Adult Day Care Center «La Milagrosa» have defined a support program focused on family caregivers. We have based this program on our previous experience to identify and integrate beneficial elements in order to improve the well-being of the patient-caregiver couple delaying the patient institutionalization. The services provided by the Support Program to family caregivers were firstly adapted and performed considering the current state of other support programs. After this, caregivers were interviewed to know their opinion about the most demanded resources and services. Their requirements included: assessment and functional adaptation of homes, social resources, phone attention, adaptable transportation, remote gerontology assistance, custody service... These needs were taken into consideration to define the support program in order to evaluate the bio-psychosocial condition of the caregiver before and after intervention. The intervention program consisted of five sections of activities: group support, formation courses, home support with a specialised professional, relaxation techniques and therapeutic inactivity techniques. It lasted 6 months. A personalised itinerary agreed by consensus with the caregiver was established on the basis of their requirements. This program tried to give response to their needs, making up a stable support network. The primary results of this study are that caregiver support is an important fact to be assessed in intervention programs provided by health and social services. Besides avoiding institutionalization, intervention programs guarantee the quality of life in the elderly. The findings suggest a need for future additional investigation of the usefulness of this intervention program in the improvement and maintenance of these caregivers well-being and quality life.

661. TELECOGNITIO, AN ON-LINE COMPUTER-BASED COGNITIVE REHABILITATION PROGRAM FOR OLD ADULTS

I. Gonzalez-Abrales, A. Maseda, A. Balo, A. Lopez, M. Villanueva, J.C. Millan-Calenti (*Gerontology Research Group and Adult Day Care Center La Milagrosa, University of A Coruna. 15006 A Coruna, Spain; igonzalezabraldes@udc.es*)

Cognitive impairment represents one of the most frequent problems associated with the aging, entailing an important decrease in the quality of life and the loss of personal autonomy. The neuropsychological assessment and rehabilitation are indispensable elements to the treatment of this cognitive impairment. These elements have experienced a remarkable advance throughout the last years thanks to the adoption of information and communication

technologies (ICTs) for long-distance medical care. For this, on-line computer-based cognitive rehabilitation programs constitute a new resource to carry out research aimed at avoiding the institutionalization for the older adults and fomenting the active aging at home. On the basis of these needs, the main aim of this study was to develop an on-line telematic tool for cognitive stimulation focused on the elderly in order to: a) maintain cognitive abilities and prevent cognitive impairment; b) elaborate the guidelines for the design of this tool from its access to the viewpoint of its interface and contents; c) make the remote psychological assessment and cognitive rehabilitation, within more suitable surroundings and getting over accessibility barriers; and finally d) to foment the active aging and the improvement in the quality of life through a non-pharmacological intervention at a very low cost. Therefore, considering the current state of research regarding the available tools for cognitive stimulation using ICTs and taking into account their characteristics and effectiveness, a new on-line tool (Telecognitio) was designed and developed to be able to go beyond them. This new cognitive program is divided into seven areas of cognitive intervention: orientation, perception, attention, memory, language, calculation and praxias. It consists of four levels of difficulty according to the cognitive impairment of the patients: I: moderate cognitive impairment; II: mild — moderate cognitive impairment; III: mild cognitive impairment and; IV: age-associated memory impairment. The remote assessment allows a continuous monitoring of people to guarantee a personalised and suitable intervention in accordance with their level of cognitive impairment. Telecognitio, as an interactive program between patient and computer, means a new useful tool for people with cognitive impairment. It can be seen as a potential reinforcement in nonpharmacological rehabilitation. This kind of programs foment a higher motivation, indispensable aspect for a good rehabilitation practice. So, it could be a promising approach to maximize the cognitive functions of a person in the context of a progressive degenerative disease. Telecognitio will improve the quality of life on both patients and caregivers.

662. THE IMPACT OF SOCIAL NETWORK AND SUPPORT ON THE QUALITY OF LIFE OF FUNCTIONALLY IMPAIRED ELDERLY

V. Green¹, G. Auslander² (¹*Golden Tower Maccabi Healthcare, Israel, ²School of social work, Hebrew University of Jerusalem; grin@012.net.il*)

One of the most important resources of elderly with functional disabilities is their social network which provides love and assistance to maintain their quality of life. *Research* (Ph. D. Thesis in social work, Hebrew University of Jerusalem). *Goals*: The study (2001) examined the relationship between social networks and social support systems of disabled elderly, and their quality of life. The networks included informal systems (family, relatives, friends, neighbors), as well as formal systems (physician, nurse, and others). Fore hypotheses were put forth: (1) There will be a relationship between Socio-demographic variables and size of the social network and social support. (2) There will be a relationship between Socio-demographic variables and quality of life. (3) There will be a relationship between size and type of social network, and the type of support received. (4) There will be a relationship between the elderly individual's initial level of func-

tioning and level of functioning after receiving social support. *Research design.* The population included functional disabilities elderly up to 85 years, who belonged to the «Maccabi» Sick Fund. The sample included 211 elderly that were interviewed in their homes. The instruments: (1) Depression scale (HEDDS), Auslander et al (1988) (2) Affect Balance Scale (Bradburn, 1969). (3) Self-rating of health (SRHS), Auslander & Litwin (1991). (4) Reporting symptoms, the Duke-UNC Health Profile (Parkerson et al., 1981). (5) Activities of Daily Living (ADL) scale (Katz et al. 1963). Social networks and Social Support were mapped by the model of Cochran, et al (1990) examined dimensions related to structural and interactive aspects. *Results.* The participants had low subjective quality of life. Their social network consisted of 10 individuals on average, and included family, relatives, friends, and professionals. The larger the number of family members was, the larger the scope of support. More findings: Married men, younger groups, and elderly of Eastern origin had a more extensive family network. Married participants with higher education reported better subjective quality of life. The functioning of the elderly persons was higher at the end of the study than at the beginning. The more severe the patients' functional disability, the greater the decline in quality of life. The physicians were the most supportive formal helper. *Discussion.* This finding emphasizes the size of the network and the composition of the network.

663. CHAIN-WIDE SURVEY OF CUSTOMER SATISFACTION AS A DRIVER OF SERVICE IMPROVEMENT — «GOLDEN TOWER», A MEMBER OF THE MACCABI HEALTHCARE SERVICES GROUP

V. Green, A. Yunger (Golden Tower Maccabi Healthcare, Israel; varda_g@migza.co.il)

Background: In 2005, the «Golden Tower» Old Age Home commissioned «Dahaf» Research Company to hold a chain-wide survey of patients and family relatives across the geriatric and rehabilitation departments and the sheltered homes. The survey was unique in terms of size, breadth and the range of service and treatment areas surveyed. *Objectives:* Measure and compare the clients' satisfaction level in similar units; Identify areas with low satisfaction levels; Detect the clients' future needs trends. The target population: The residents of the following sheltered homes: «Beit Ildan», Kiryat Motzkin, «Golden Tower», «Ramat Hasharon, «Golden Tower», Jerusalem, Clients hospitalized in orthopedic rehabilitation departments; Family relatives in the nursing, skilled-nursing care departments and neurological rehabilitation departments. *Methodology:* Large, representative sample of 65% of the target population; Design of unique questionnaires for all respondents; Face-to-face interviews of residents and patients hospitalized in orthopedic rehabilitation departments; phone interviews of family relatives; Three-dimensional analysis: General analysis of the responses; Specific analysis of each department/sheltered home; Comparative analysis of the departments/sheltered homes. The findings were distributed to the managers. *Findings:* The findings testified for high satisfaction level. The main factors that account for differences in satisfaction levels were as follows: In the departments: treatment and attitude of staff caregivers; quality of consulting provided by social workers; nurses' attitude; physicians' availability; family involvement in the care regimen; cleanliness. In the shel-

tered homes: comfort level at the apartments; response to special requests; attention to personal concerns; quality of service provided by the bookkeeping department; cozy atmosphere; *Conclusions:* Improvement plans encompassing all areas and professionals were designed according to the findings. A timetable for implementation was set and execution was accompanied by consulting, training and regular monitoring. Examples of improvement programs: Design of clinical quality scales; Training, educational and enrichment activities for staff on Company values and code of conduct; Design of a new patient admission procedure; *Summary:* Most programs were implemented during 2006. A repeat, comparative survey will be held at year end, The survey has achieved its objective of driving improved service levels.

664. CROSSING AGE AND GENERATIONAL BOUNDARIES: METHODOLOGICAL QUESTIONS OF INTERGENERATIONAL RESEARCH

A.M. Grenier (McGill University School of Social Work, Montreal, Quebec, Canada; amanda.grenier@mcgill.ca)

Academics and professionals that conduct research on older people's issues are most often younger than study participants themselves. However, the appropriateness of such intergenerational practice is beginning to be questioned. In countries such as the UK, it has been suggested that only older researchers should interview older people. In an attempt to clarify methodological issues related to the questions of intergenerational research, this paper will ask the question: *what happens when researchers attempt to reach across age and generational boundaries?* Drawing on current debates and selected literature I will explore how moving across these boundaries may influence the research process and results. First situating *age* and *generation* as organizing principles, insights will be gleaned from the anthropological *insider-outsider* debate, linguistic work on age-based differences and negotiation in *talk*, and *transference/countertransference* phenomenon. Drawing on this literature, I will build a conceptual argument that the dynamics of research play a large part in the telling, construction and interpretation of stories. Results suggest that *age* and *generation* be considered one of the many social locations that may impact the process and interpretation of research results. Further, those intergenerational researchers should begin to reflect on the ways they construct, perform and experience *age and generational boundaries* within each research encounter.

665. ENGAGING THE GERONTOLOGICAL COMMUNITY IN EMERGENCY PREPAREDNESS

G.M. Gutman (Simon Fraser University, Gerontology Research Centre, Vancouver, Canada; gutman@sfu.ca)

While it is very important to raise awareness of seniors' vulnerabilities as well as their potential contributions, among agencies and individuals in the emergency planning and response sector it is equally important to do so among those providing health and social care to older persons on a day to day basis. The focus of this presentation will be on current and potential activities that home care agencies, long term care facilities, seniors' housing and assisted living projects, as well as geriatric units in acute care hospitals do/could engage in with respect to planning for and meeting the mental and physical health

needs, and material needs, of older persons in disaster situations and their aftermath. The presentation will also discuss the role of professional gerontological and geriatric associations, age-related specialized citizen advocacy and support groups (e.g. Alzheimer's, Parkinson's or Heart and Stroke Societies), as well as senior citizens' organizations with respect to advocacy, training and coalition building. The need for cooperation and collaboration between the emergency response sector and the gerontological community and how to achieve it will be an over-arching theme.

666. THE ROLE OF GRADUATE EDUCATION IN GERONTOLOGY IN ADVANCING THE RESEARCH AGENDA ON AGEING

G.M. Gutman (*Simon Fraser University, Gerontology Department, Vancouver, Canada; gutman@sfu.ca*)

Around the world, graduate programs in ageing are being developed at post-secondary educational institutions. Since gerontology is both a field of research and study as well as for some, a field of professional practice, graduate program developers have the option of focusing on the training of researchers or the training of practitioners. The latter may appear to be the more urgently needed — especially in geographic regions when there is a rapidly ageing population and only limited opportunity available in traditional professional education programs such as nursing or social work for specialization on ageing at the Masters or doctoral level. Funding may be available from governmental and non-governmental sources to supplement the costs of professional master's degrees in gerontology. It may take the form of direct payments to the educational institution offering the degree (a fixed sum for each seat filled) and/or by scholarships or bursaries or paid or unpaid-leave granted to the students themselves in some cases by employers who anticipate or require that the student will return to their organization upon graduation. The central purpose of this presentation, however, is to make the case that universities and their funders, and indeed federal and provincial governments, must also make an investment in research-oriented graduate programs in gerontology. Such programs are crucial if there is to be a sufficient supply of appropriately trained individuals to conduct the basic and applied research necessary to advance the research agendas on ageing that have been developed by various organizations around the world. In addition, research-oriented graduate programs in gerontology are crucial for the development of new knowledge. In the presentation, the global and regional research agendas on ageing developed under the joint auspices of the UN Programme on Ageing and the International Association of Gerontology and Geriatrics (IAGG) will be reviewed and their implications for graduate education highlighted. Attention is drawn to the IAGG website (www.iagg.org.br) where a worldwide listing of Masters and PhD programs in gerontology can be found.

667. VOLUNTEER WORK, INFORMAL HELP, AND CARE — DIMENSIONS OF PRODUCTIVE AGEING IN CONTINENTAL EUROPE

K. Hank, S. Stuck (*Mannheim Research Institute for the Economics of Aging & DIW Berlin, Mannheim, Germany; hank@mea.uni-mannheim.de*)

Unpaid productive activities performed by older citizens constitute a valuable contribution to our ageing societies' general welfare. Recent descriptive analyses of three important dimensions of such unpaid activities — volun-

teering, informal helping, and caring — suggest a pattern of cross-national variations that is very similar to the picture one gets when comparing labour force participation rates of the 50+ in Europe. Using micro-data from the 2004 'Survey of Health, Ageing and Retirement in Europe' (SHARE), we investigate determinants of productive ageing in 11 countries. In addition to controlling for a wide array of individual characteristics, we also consider the role of macro-level factors related to a country's welfare state, nonprofit, and gender regime. Preliminary results suggest that — net of effects resulting from differences in population composition — statistically significant contextual ('regime') effects persist for all three dimensions of unpaid productive activities covered in our study. The precise mechanisms through which 'regime' characteristics are linked with older adults' propensity to engage themselves in productive ways are yet to be determined. Our findings support welfare state policies and programs designed to encourage elder citizens to make use of their productive potential.

668. THE APPLICATION OF ATTACHMENT THEORY TO RESEARCH ON WAR VETERANS

A. Hautamäki (*Swedish School of Social Science, University of Helsinki; hautamak@mappi.helsinki.fi*)

Aim: How to explain the low prevalence of PTSD among Finnish war veterans, in comparison with other countries, paralleled with a relatively high level of subjective wellbeing, in spite of many medical problems and physical restraints (Hautamäki & Coleman 2001; Ponteva 1993, 1998)? PTSD was not associated with age. The formerly functioning self-protective strategy, in Finland frequently the avoidant-dismissive (Moilanen et al. 2000; Hautamäki 2006), had not broken down with advancing age and retirement. The fair stress-tolerance of Finnish people has been proposed as an explanation (Ponteva 1998). The aim is to analyze theoretically and empirically, how the avoidant-dismissive attachment strategy is associated with experiencing and processing trauma. *Method:* An attachment-theoretical approach is taken to trauma. Attachment patterns are defined self-protective strategies against danger (Crittenden 2000), and resolved trauma as a situation, in which the speaker has learned to take forward into the future information, which can help to predict, and protect from danger, and to leave in the past, what was unique to the specific event, and only relevant to the past. Thirty Finnish male veterans from the Winter War and Continuation War, ranging from 71–94 years took part in semi-structured one-to-one interviews concerning their wartime experiences, their recollections of dangerous events, and what the impact of the events was (Hautamäki & Coleman 2001). The transcribed interviews were analyzed qualitatively using the discourse analysis of the Adult Attachment Interview (Crittenden 2001, 2004), to identify preoccupied or dismissed trauma, and self-protective attachment strategies in regard to danger. *Results:* Results related to resolved trauma in regard to danger, as well as lack of resolution of danger, i.e., dismissed trauma and preoccupied trauma are presented. Resolved and contained trauma, as indicated by a logically coherent, plausible and nuanced episode accompanied by appropriate affect, e.g., ego-filtered sorrow, was frequently seen. The narratives were saturated by the collective significance and personal meaning given to war.

Personalized anger against Russians was found among those suffering from PTSD. Even if a great importance was given to the war, no idealized image of patriotic soldiers uncritically dedicated to their cause, the survival fight of a small country, should be painted. The fighting spirit was more like grumbling everyday persistence and tenacity («sisu»). The results were analyzed in terms of the avoidant-dismissive attachment pattern and the silent male ideal in Finland. To protect themselves from danger respondents combined careful planning with affective numbness. Those, who had resolved their trauma, emphasized the impact of military training on creating the instrumental-technological attitude towards war, and also their fair stress tolerance, their capacity to numb their affects in situations of extreme danger. Callous, self-ironical humor was used to deaden feelings and to create indifference toward the atrocities. The narratives of recovery dealt with how to share the past terrors in a cultural context, in which tough silence and the de-activation of affect were valued. Discourse analysis of themes of generativity and integrity indicated that the wartime experiences had been integrated in the life-stories in meaningful ways. *Discussion:* Selective survival may operate in the direction of psychological factors, e.g., resiliency by generativity and ego integrity. The respondents seemed to have gradually processed traumatic events by sharing them with insiders, in a spirit: let bygones be bygones, but still a deeply meaningful part of our lives. However, Hautamäki's (2006) results indicated that the proportion of securely attached have not increased across three generations in Finland, even if the external dangers have decreased. The predominant self-protective strategy is still the avoidant-dismissive, particularly among Finnish males. The dangers and terrors of the Wars may, through «ghosts in the nursery» (Fraiberg et al. 1975), have been built into the working models of attachment of the next generations?

669. MIGRATION OF ELDERLY NORWEGIANS TO SPAIN AND NORWEGIAN ELDERLY CARE IN SPAIN

A. Helset (NOVA, Oslo Norway; anh@nova.no)

The 1980s and 1990s saw a steadily increase in the number of disabled and retired Norwegians who chose Spain as their country of residence for much of the year. After 2000, the number of retired migrants has utterly increased. In 2006, Norway exported over 3 billions Norwegian kroner in pensions to retired Norwegians living permanently abroad. The seasonal removal of retired people to another country represents a phenomenon midway between tourism and migration. In a level-of-living survey we conducted among Norwegian retirees in Spain in 2002, we attempted to map this group's social background and health situation, and their plans for the future. Here, we found that most retirees reported their intention to move back to Norway if they themselves or their partner/spouse would be in need of assistance or care. It appears that these intentions are in large measure carried through. We registered few over-80s in our survey, and relatively few deaths are recorded among Norwegians in Spain. In fact the number of recorded deaths has remained fairly stable in a period in which the Norwegian population in Spain has shown steady growth. Generally speaking the retirees in our survey reported a fairly good state of health and physical mobility. Compared with a health survey of retirees in

Norway, Norwegian retirees in Spain reported a somewhat better health situation than elderly households in Norway. This is probably because the most infirm retirees are not the ones who opt to live in Spain. A mobile life in retirement requires not only financial means, but also physical and mental resources. However, for some, migration can be an adjustment to relative poverty and disability. Living abroad can offer a better quality of life for those with small pensions and/or deceases which are giving less discomfort or pain in a warmer climate. In spite of the main picture; some of the migrants opt to stay in Spain up to a very high age. But the Spanish elderly care system appears to have little to offer emigrant retirees who fall ill or become infirm. Based on our parallel study of Norwegian care facilities in Spain in 2002, we believed it was possible to glimpse the outline of what we defined as a transnational elderly care: an elderly care system in which both the operation of care institutions and users of the services they offer show a pendulum movement between Norway and Spain.

670. DO NURSES RESPECT THE BASIC RIGHTS OF THE SENIOR CITIZENS WHO LIVE IN GERIATRIC RESIDENCES?

E.J. Hernandez¹, B.C. Rodriguez¹, R. Chacyn¹, J.F. Jimenez¹, J.C. Hernandez², M.L. Estuvev³ (¹Las Palmas de Gran Canaria University, Canary Islands, Spain, ²Servicio Valenciano de Salud, Valencia, Spain, ³Servicio Canario de Salud, Canary Islands; Spain, jjimenez@denf.ulpgc.es)

Objectives: To know the patient's satisfaction level in relation to the nursing work as a defence to respect the Human Rights. *Material and Method:* Elder patients who live in a semi assisted residence. 37 old people with an average age of 74.83 yr old. 25.39% men and 74.61% women. We made a personal interview. *Results:* About if they feel fear to refuse their consent to take any diagnostic test, the 53.78% of patients answer positively, the 38.21% negatively and finally the 8.01% do not know or answer. The 83.97% out of the ones whose answer was positive would do it to prevent health professionals from having a negative attitude towards them and the 16.03% would do it to avoid «reprisals». Regarding the content of the information which has been transmitted to them before taking any diagnostic test, the 67.30% understand in general this information given to the professional, the 17.81% do not understand and the 14.89% say that on some occasions. As regards their right to privacy, the 70.10% answer that they are not respected and think that it is not due to the inexistence of means to prevent it, but to the work routine (83.62%). The 18.88% say that they are respected and the 11.02% say that it depends, above all, on the person in charge of the nursing care. Concerning the «right to solidarity» towards their own institutionalized partners and the way to guarantee an assistance towards them against the different situations or conflicts which could occur in the institution, the 93.3% answered that they had enough with their worries about their own problems and family conflicts, the 2.3% answered that they declared their solidarity with them and the 4.4% do not know or answer. *Discussion:* Since the old people do not feel they were correctly informed, they cannot carry out their right to consent and autonomy. They think that in order to give their consent they have to receive a clear and complete information without which they will not make any decision freely. *Conclusions:* Fear persistence when taking diagnostic tests: Right to be

informed: most of them understand the information given by the nurse, Right to privacy: when their privacy is not respected, it is due to the work routine, Right to solidarity: they do not declare their solidarity with the rest of their institutionalized partners because of the importance of their personal and family problems.

671. THE OLDEST OLD SUPPORT RATIO

E.R. Herrmann, J.M. Robine, J.-P. Michel (*University Hospitals of Geneva, Switzerland; francois.herrmann@hcuge.ch*)

Background: In the context of an important expected increase in the number of older persons, pressure might be exerted on families to increase their time contribution to long term care. *Methods:* Extending previous work, we propose to introduce the oldest old support ratio as the ratio of people aged 50–74 to those aged ≥ 85 for monitoring changes in the population age structure. This ratio provides information on the number of people potentially available to care for one person aged ≥ 85 , similar to the inverse of the dependency ratio — sometimes called the support ratio — which reflects the number of potential «breadwinners» for one person belonging to either the young or elderly age groups. This proposal is illustrated with population data coming from the Human Mortality (HMD) and the International (IDB) databases. Comparison with existing indicators published in the «world data sheet» from the Population Reference Bureau (<http://www.prb.org/>) will also be analyzed. *Findings:* The *oldest old support ratio* will fall from 13.4 and 13.9 persons in 2003 to below 5 persons in 2050 in Switzerland and the United States respectively. *Interpretation:* Current demographic change projects a decrease in informal care givers. To better anticipate the future long term care needs of the frail and dependent oldest old, it is necessary to use a «four age group population model». In theory, there are two ways to reduce the expected deficit of informal care givers: increasing the proportion of children, particularly men, providing care to their older parents, or prevention of disability in older age. Such an indicator will aid local, national and supra national organizations realize the implications of the substantial undergoing intergenerational changes.

672. PROFESSIONAL MANAGEMENT AS A PRECONDITION FOR GOOD PRACTICE IN NURSING HOMES

J. Heusinger, T. Knoch (*Institut fuer Gerontologische Forschung; heusinger@igfberlin.de*)

The study — Possibilities and Limits of a Self-determined Lifestyle in Nursing Homes« (MuG IV) on behalf of the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth included qualitative case studies within eight nursing homes in order to analyse examples of good practice in the field of nursing and care. The assessment of participant observations that lasted several days as well as the analysis of documents and face-to-face interviews allows quoting important preconditions and forward-looking examples for good care-practice. Criterion is the caregiver's orientation to the demands of the nursing home residents as well as their human dignity. The results show how a professional management, which counts on transparency and participation of employees, residents, relatives and volunteers, is able to release resources for a care with dignity. Those may guarantee high standards of care,

i.e. in the fields of *dekubitus* and nutrition as well as social involvement of the residents within and outside the homes. Considering examples of every day life in nursing homes, the detailed findings prove possibilities for various forward-looking concepts and ways for the realisation of those in inpatient nursing homes.

673. REVISITING AMBIVALENCE

S. Hillcoat-Nalletamby, J. Phillips (*University of Swansea, UK; S.Hillcoat-Nalletamby@swansea.ac.uk*)

The notion of ambivalence has recently been introduced to the study of family ties and intergenerational solidarity in an attempt to address criticisms that intergenerational relations demonstrate only two extremes, that of solidarity or of conflict. Ambivalence has been described as tensions experienced by people as they try to deal with the constraints of responding to multiple social, personal and family demands and expectations for support. As a conceptual and measurable construct, ambivalence has thus far only been examined as a cross-sectional phenomenon. It thus fails to reflect the possibility that the experience of ambivalence may be sensitive to life course factors and to the complexity of the structural composition of generations; for example, an individual whose family ties locate them within a triadic relationship of parent and child, may experience variation in their feelings of ambivalence depending upon the relationship they have with their ascending and descending generations of kin. Likewise, young parents, who themselves have relatively recently made the transition to full adulthood, may feel less ambiguous about supporting parents with regular visits than to providing them with intensive care in later years. Although researchers agree that the life course perspective would enhance the validity of ambivalence as a measure of intergenerational solidarity, and empirical findings from large scale, comparative studies such as the five-country OASIS project for example, confirm this need, there have been no significant theoretical or empirical developments undertaken to advance this idea. This paper therefore proposes to revisit the conceptual and theoretical foundations of the notion of ambivalence to consider how, as one dimension of intergenerational relations, it might be improved to accommodate a life course perspective, and to be used in the study of complex structures of family ties such as triads of generations. The paper will draw on a five-country research project (OASIS), which provides qualitative and quantitative data on ambivalence collected following a survey of 6,000 people. The focus of the analysis will be on data collected for England. Critical analyses of these findings show the relevance of developing a qualitative approach for the further elaboration of a life course perspective to ambivalence. The paper will look at the policy and practice implications for social workers of taking a life course perspective towards ambivalence.

674. NATIONAL, REGIONAL AND LOCAL SOCIAL INCLUSION STRATEGIES FOR OLDER PEOPLE IN EUROPE

A. Hoff (*University of Oxford; andreas.hoff@ageing.ox.ac.uk*)

In many European countries, old age and poverty are used synonymously. Old-age poverty and social exclusion have been most prevalent in the British Isles and in the Mediterranean countries, as well as in many of the new EU member states from Central and Eastern Europe. However,

there are specific groups of pensioners that are particularly vulnerable in all European countries, such as widows, separated/divorced individuals, or older migrants (Ogg 2005). This paper presents the findings of an exploratory qualitative study into social inclusion strategies for older people in the EU25. Telephone interviews using a topic guide were carried out with government and voluntary organisation representatives, as well as with independent academic experts. The interviews were tape-recorded and transcribed. The main objective of this research was to identify social inclusion strategies used in various European countries at national, regional and local level to integrate older people in their respective societies. The main hypothesis was that the welfare mix, i.e. the division of labour between the welfare providing sectors state, market, family, and voluntary sector in the respective countries would reflect the typical characteristics of the five European welfare state regimes — social-democratic, conservative-corporatist, liberal-residualist (Esping-Andersen 1990), Southern-European (Ferrera 1996), and Central-Eastern/Eastern-European (Standing 1996; Manning 2004). This hypothesis was tested in various respects, including the prevalence of social exclusion as a public discourse/public policy issue, the identification of main risks for older people to become socially excluded, and 'examples of good practice' of social inclusion strategies at national, regional and local level. Overall, the hypothesis had to be rejected. Lack of family ties and income poverty were universally identified as main risks, regardless of welfare state regime. The most common social inclusion strategy was using day-care centres as 'social clubs' for older people, again popular in most European countries. But in some respects, evidence for the welfare state regime hypothesis was found. Thus, social exclusion of older people was a major public and policy discourse issue in Southern Europe, very much in line with lack of social protection against old-age poverty in these countries. Moreover, the Central and Eastern European countries revealed an urgent need for (a more comprehensive) system of social services to support family carers.

675. ATTITUDES AND EXPERIENCES RELATED TO PHYSICAL EXERCISE IN ELDERLY PATIENTS

M. Hoff (University of Southern Denmark, Odense, Denmark; mhoff@litcul.sdu.dk)

Since early geriatrics established the connection between old age, disease and decline, numerous therapeutic regimes and institutions have been developed to counteract bodily ageing (Katz 1996). Around the end of the 20st century the political strategies of western welfare states aims at preventing disease and decline and hereby the focus, previously oriented towards curing disease, is now increasingly turned towards the personal responsibility for preventing disease, decay and visual signs of ageing (Lupton, 1995. Gilleard and Higgs, 2000). Organized training has been proposed as a supplement to medical treatment due to the physiological benefits. Training on prescription is one example of this development, and training in the hospital and in subsequent rehabilitation is another, the latter being the aim of this research. This research explores attitudes and experiences related to old age, disease, physical training and rehabilitation among elderly patients (aged 68–92) in a Danish hospital. Qualitative interviews with 10

elderly patients focused on the extent to which discourses related to personal responsibility towards health maintenance were accepted and taken up by elderly patients and expressed in narratives during rehabilitation. Each participant was interviewed twice. First interview was conducted at the hospital immediately after the onset of training. The second interview was conducted in the participant's home after six months of training or at the time of withdrawal from training. The paper analyses constructions of meaning related to elderly patients reasons for and experiences with participating in training as well as the background for resistance towards training and their reasons for stopping their training.

676. HOW TO DEVELOP COMMUNITY SERVICES FOR SENIORS?

I. Holmerova, H. Vankova, E. Jarolimova (Centre of Gerontology, Prague; h.van@seznam.cz)

The Centre of Gerontology in Praha 8 started its activity in 1991, soon after political changes in the Czech Republic. After 15 years of our experience as a community-based centre providing different professional health and social services for seniors, including rehabilitation care unit, dementia care, day care unit for persons with dementia, home care and home help etc., it has become clear that it is necessary to change the spectrum of services as a response to the progressive ageing of the population and changing needs and demands of seniors. After many meetings of our staff with seniors, local authorities and other stakeholders we decided to reorganize services and to cooperate more, both with informal caregivers and seniors themselves. We also investigated needs of family caregivers, asked them about the kind of possible upgrading. Most family caregivers answered that the most preferred type of care would be a short-term respite care and various services in the household. The new Act on Social Services that has been recently passed by the Parliament (Act No 108/2006) brings substantial changes into social services provision because it defines and guarantees financial allowances for providing care. In our presentation we are going to discuss our first experience with the «seniors for seniors» project and describe and evaluate its activities (friendly phone, healthy ageing activities, senior companions, seniors as the local authority advisors etc.). In addition, we are going to discuss the development of the community centre as a reaction to changes in social services provision and changes of legislation (care allowance), especially our experience with geriatric mobile teams. Conclusion: The care for seniors in the community should answer to changing needs and demands of seniors and to the changing society. *This presentation was supported by the grant No.309/05/0693 of the Czech Science Foundation.*

677. SOCIO-ECONOMIC DIFFERENCES IN FUNCTIONAL LIMITATIONS: COMPARISONS OF YOUNG OLDS IN 1992 AND IN 2002

E. Hoogendijk, M.I. Broese van Groenou, T. van Tilburg (VU University, Amsterdam, the Netherlands; emiel.hoogendijk@student.vu.nl)

Background: Socioeconomic health inequalities persist into old age, but information about changes over time is lacking. The aim of this study is to describe and explain socioeconomic health inequalities among two cohorts of people in early old age. *Methods:* Data were used from the

Longitudinal Aging Study Amsterdam. Elderly aged 55–64 years in 1992/93 (n=986) were compared with the same age group in 2002/03 (n=996). Health was measured by functional limitations. Socioeconomic status was indicated by level of education. *Main results:* Logistic regression analyses, carried out for each cohort separately, showed that socioeconomic health inequalities exist within both cohorts. The relative risk for functional limitations was higher for elderly with low levels of education. Lifestyle and psychosocial factors contributed to the explanation of inequalities within both cohorts, but educational inequality remained to a large part unexplained in 2002/03. Cohort comparisons among the low educated elderly showed that in 2002/03 their functional disabilities were larger, the behaviour was unhealthier and psychosocial factors more disadvantaged compared to the low educated in 1992/93. Logistic regression analyses with pooled data showed that an interaction effect exists between cohort and level of education. There is a larger difference in functional limitations between low and high educated elderly in 2002/03 than in 1992/93, even after adjustment for health behaviour and psychosocial conditions. *Conclusion:* Socioeconomic health inequalities increased among elderly aged 55–64 years. The number of elderly with a low level of education has decreased over time due to the improved educational opportunities, but the health situation and health behaviour of the lower educated have become worse. Future research should focus on the explanation of the increasing inequalities, whereas policy makers should focus prevention programmes directly on improving health and health behaviour of the lower educated in our society.

678. CONFLICTS IN DEVELOPMENT BETWEEN YOUNG AND OLD GENERATION IN TURKEY

J. Howe (*Technische Universitat Braunschweig, Germany;*
j.howe@tu-bs.de)

Ageing in Turkish society is a neglected theme. There is no public discussion about care of old people, care insurance, abuse and violence against old people, education of gerontological professionals and the role of the elderly in family and society. Common opinion is that there are enough children who honour their parents and grandparents and give care, if they will need. A lack of empirical studies, that analyse the relationship between young and old people can be identified. The aim of the reported survey is to get information about the relationship between young and old generation in Turkey. With the help of structured interviews 300 students of Akdeniz University in Antalya were asked in 2004 about their attitudes towards elderly people. The results show that there is no «war» against the old generation, but young students mistrust the elderly and that they have a lot of negative stereotypes to old people and being old in general. Most interviewed students think that they do not have a good chance to correct wrong decisions of old political leaders concerning their education and chances to live their own life in future. They don't believe in wisdom and authority of old people. More than 56% think that old people lose their ability to learn. 53% are convinced, that Turkish society doesn't need experience of man. Instead of that the knowledge of young people is more useful. The results of this study can be interpreted, that young people don't think that their fathers and grand-

fathers will do best for their future and the future of their country. It can be supposed, that young people in Turkey are dissatisfied with their decision-maker, who belong to the old generation and that in Turkey a conflict between generations is in the process of development. Harmony can be over soon.

679. WAR AND NARRATIVE: THE FINNISH EXPERIENCE

N. Hunt (*University of Nottingham, Nottingham, UK;*
Hunt@nottingham.ac.uk)

Aim: This exploratory study explored narrative development and cohesion in ageing veterans of the Finnish Winter War and Continuation War. *Method:* Five Finnish veterans ranging from 84–92 yr participated in semi-structured depth interviews concerning their war-related memories and coping. A narrative analysis was used to examine narrative coherence and reconciliation (Burnell, Hunt & Coleman, 2006). *Findings:* The initial analysis showed that several of the veterans had relatively high levels of narrative coherence and reconciliation. They showed little evidence of having war memories which still caused them distress. The other two veterans still showed signs of incoherence when referring to their war memories. These were associated with problems relating to social support, and there were behavioural issues with one veteran. Regarding socio-cultural factors, issues were raised which may impact on the social forces which affect narrative development. *Discussion:* These preliminary findings showed that narrative cohesion is still relevant to successful psychosocial functioning in the very old. There were some problems relating to whether we were observing narrative cohesion, socio-cultural factors, or the loss of resources due to very old age. Further research is being conducted to compare different cultural groups. Issues were also raised regarding conducting war-related research in another country.

680. REHABILITATION AND ASSESSMENT OF QUALITY OF LIFE IN OLDER ADULTS

T. Huusko (*The Social Insurance Institution of Finland;*
tiina.huusko@kela.fi)

Quality of life measurements are increasingly used in gerontological rehabilitation research and in clinical praxis in order to assess the effectiveness of rehabilitation and to justify the resources given to geriatric rehabilitation. However, quality of life (QoL) is a multi-level and amorphous concept with an enormous volume of literature. There is no consensus on theory, definition or measurement instrument on QoL in older age. In a gerontological rehabilitation project with two different intervention studies we compared the feasibility of three different QoL scales and specific questions on subjective health and psychological wellbeing. We compared three QoL scales: WHOQOL-BREF (WHO 2003), 15D (Sintonen 2001) and RAND-36 (Ware & Sherbourne 1992). The first intervention studied the effectiveness of psychosocial group rehabilitation on elderly people experiencing loneliness. The mean age of the patients was 80 years. 83 % were satisfied with their life. 12.5 % of the patients did not answer at least one of the questions in RAND-36 and 66.5 % of the patients did not answer the question about sexuality in 15D. Psychological wellbeing was associated with better quality of life with both instruments. In men QoL

was reported better with RAND-36 but with 15D it was better among women. RAND-36 had better discriminant validity for self-reported health. In the other study community care of elderly patients with dementia and their spouses was supported by a dementia coordinator. 62 % of the spouses (n=125) were women (mean age 75 years). 15D score correlated strongly with the physical domain (.71) and moderately with the psychological domain (.41) of WHOQOL-BREF. The corresponding correlations with the environment and the social relationship domains were .28 and .10. All four domains of WHOQOL-BREF correlated well with psychological wellbeing. The goals of gerontological rehabilitation are supporting the functional capacity and quality of life of an elderly patient and his / her family. The QoL of older people is generally measured by using scales developed for use with younger people. A multi-dimensional assessment should be used because these instruments can disadvantage older adults and because elderly people are a heterogeneous group.

681. THE PLACE AND ROLE OF MEDICO-SOCIAL PROBLEMS OF AGED PEOPLE IN KABARDINO-BALCARIAN REPUBLIC

A.M. Inarokova, M.R. Zakhokhova, Z.Z. Anzorova, F.H. Orakova, Ir.H. Almova (*Kabardino-Balkarian State University, Nalchik, Russia; ami_kbsu@mail.ru*)

In Kabardino-Balkaria these has been organized a conception of prolonged medico-social help to aged people and invalids. In the majority of models, the medico-social help to the aged and invalid people is carried out by means of combination of existing public health institutions, social defence boarding houses and rest homes-the combination of their means for financing them. A close interaction of geriatric doctors, medical sisters and social workers of service of aged people, which enabled in its turn to transfer those under wardship from one group to another and give medico-social assistance to a larger number of aged. *Contribution:* (1) Organization of republican geriatric rehabilitation centre on the basis of the war veterans' hospital, having a great experience of working with aged people and a highly qualified staff.(2) Organization of Kabardino-Balcar branch of the geriatric society of RSA in which Kabardino-Balcar State University parhripates. (3) Presence of the educational basis of the medical faculty of KBSU. (4) Presence of ministries and departments, interested in solving this problem. These terms may be positive if to integrate the efforts of social defense institutions, public health, educational institutions and science using all the life service, providing the quality of life and satisfaction with it. We have made a choice examination of pensioners according to a specially carried out questionnaire in 5 polyclinics. We have asked 435 people. We distinguish: 66,3% are not satisfied. With their material status, 21,7% complained of their health, 12%-had no complains at all. In worsening their health only 70,3% tended to go to polyclinics to get a medical assistance, 36% try to have a home-treatment and 2,8% refuse any treatment. This enables us to consider them such whose health will become worse and worse in future. The tendency to self-treatment may be connected with the opinion, that poor health is associated their age (30,3%). 73,1% consider that the reason of such situation is a general dissatisfaction with the quality of medical service. Of the opinion that the condition of the

society is determined by its attitude to children and aged is true, in such a case. We should live to believe that the interest to the aged people problems is connected not only with the changing demographic situation in the world, but also with the development of our self-consciousness and the development of our morals.

682. CARE SERVICES FOR MINORITY ETHNIC ELDERLY IN NORWAY

R. Ingebretsen (*Norwegian Social Research (NOVA), Oslo; rin@nova.no*)

The older immigrant population in Norway is increasing. The non-western ethnic minorities are especially in focus in the efforts to adapt the care services to their needs. An investigation is done in municipalities with more than 200 older immigrants of a non-western origin 60+ yr to map resources and needs in the communities and experiences with social care services for older people with ethnic minority background. Statistical information was used to find the municipalities. Staff in the care service staff answered questionnaires and were interviewed. A great variety of experiences and challenges were reported. Three issues were in particular highlighted: (1) Information, language, and communication, (2) Adaptation of services and expectations, and (3) training of staff. Ethnic minority elders are a challenge to the service system in terms of language and cultural competences. Interviews with staff resulted in suggestions to facilitate information, follow up and cooperation between the care systems and families. The expectations and experiences of the elderly themselves and their families are crucial. Conclusion: A good start is preventive work, arranging meeting points at senior centres and in cooperation with interest organisations and the organisations for ethnic minorities. Multicultural staff may ease the process of adaptation to the needs of ethnic minority elderly persons.

683. ESTIMATES OF LIFE QUALITY OF AGED BASED ON DATA ANALYSIS ABOUT HEALTH AND WELL-BEING (ACCORDING TO OPINION POLL 2004–2006)

L.V. Ivankova¹, O.V. Belokogne², Yu.A. Potanina³
(¹Moscow government, committee of interregional relations and national policy, ²Federal institute for organization and informatization of health services, federal agency for health and social development, WHO Collaboration Center, ³Ministry of economic development and trade; potanina@yahoo.com, ivankova@mail.ru)

The analysis of health self-assessments of aged living in rural localities has revealed the following results: 48% respondents estimate their health conditions as «good» or «normal», the age in selected group varies from 60 to 84, the age peak falls to 65–69 yr. «Bad» or «rather bad» health assessments accounted for 52% of all answers. Both in urban and rural localities the population live in stressful situation. This fact reflects the instability of our life and feeling of insecure unprotected lives of population. This conclusion is confirmed by the following data on well-being of aged population. Worse life conditions are found in rural localities, it is there where the people not hoping on anybody and having extremely low incomes are saving money for «funeral» purposes. So, 68% respondents save money for the above purposes and almost same percentage of aged put up for «a rainy day» (they hardly make ends

to survive from pension to pension). About 40% of rural respondents are married, 60% of them are widowed, 37% respondents live alone. 63% rural and 35% urban respondents are satisfied with their lives on the whole. 16% of rural and 26% of urban respondents are not satisfied with it, the rest have difficulties in answering this question. 66% of rural population hope to get the assistance and support from their relatives if necessary. As it is seen from these data, 34% of rural residents count only on themselves and do not feel sure of getting support from their relatives or from elsewhere if necessary. Both in urban and rural localities family links are found strong. The aged people do not demand anything that seems to be unrealizable. Having in mind that their financial conditions are limited to the survival level, they are satisfied with what they have. Aged, especially rural residents, namely two thirds of them, do not complain about housing conditions. About half of all aged in rural localities do not complain on their financial conditions though they hardly make both ends meet, have enough money only to survive from pension to pension, and in this respect they look wealthier than those residing in Samara, Moscow or town of Dubna. Half of population, two thirds in rural localities do not complain on nutrition, but the quality of medical services leaves much to be desired, their quality is very low in all surveyed localities, only in the capital it seems to be better than everywhere, though positive estimations do not reach the level of 50%. So, the analysis of subjective assessments of life satisfaction on the whole showed rather high estimations of housing conditions and nutrition level and low estimations of material conditions and medical services. High estimations of first two positions witness unpretentious unspoilt and appeased character of aged Russian. They have gone through much life difficulties: Great Patriotic War (26% of respondents), difficulties of after war years and all disorders and unjust moments of modern life.

684. PROFESSIONAL ACTIVITY AS SOCIAL ADAPTATION OF AGED PEOPLE

Ye.A. Ivanova¹, V.F. Lebedev² (1 St. Petersburg Technological Institute, Russia, 2Chlopin Radium Institute, St. Petersburg, Russia; yelena-spb@yandex.ru)

To create conditions for aged people wishing and able to continue their occupational activity is much more difficult than organizing entertaining or holiday events. Russia has many aged qualified specialists who could perform different kind of job not limited by the fixed working hours or fixed place of work, and their employment could be quite feasible through the Internet. The employment of such specialists could find place in any field of human activity, for instance, in designing, information and informatics, ecology, education. At present there are implemented (to some extent) designs and projects of our team, and a pack of different ideas for investors to consider. In this connection the report discusses the problem of working competitiveness of the aged and consequently, the possibility and necessity of further training or professional reorientation in the market conditions. A comparative analysis of the State laws concerning occupational activity and taxation of the aged in the developed European and Asian countries and America is carried out.

685. DIMENSIONS OF PARTICIPATION IN VERY OLD AGE AND THEIR RELATIONS TO HOME AND NEIGHBOURHOOD ENVIRONMENTS

S. Iwarsson¹, M. Haak¹, A. Fange¹, J. Sixsmith², V. Horstmann¹, S. Dahlin Ivanoff³ (1Lund University, 2Manchester Metropolitan University, UK, 3Institute of Occupational Therapy and Physiotherapy, The Sahlgrenska Academy at Gothenburg University; Susanne.iwarsson@med.lu.se)

This paper is based on a study with a mixed methods approach, combining quantitative and qualitative data form the Swedish component of the five-nation ENABLE-AGE Project. In-depth interviews with eight participants focused on experiences of participation in relation to home, revealing the core category «Home as the locus and origin for participation», with two main categories: «Performance-oriented participation» and «Togetherness-oriented participation». The findings indicate that the home is an origin for participation in very old age, both out of home and within the home. Next, utilising quantitative survey data from 314 participants, the two main categories were used to operationalise the concept of participation, and to investigate whether and how aspects of housing and neighbourhood environments related to participation in very old age. It was possible to statistically confirm the two main categories emerging from the qualitative study in the survey data. Both objective and perceived housing and neighbourhood aspects were significantly related to, in particular, Performance-oriented participation and to a lesser extent to Togetherness-oriented participation. As regards very old people, most health care interventions are accomplished within the home, while our results imply that there are potential interventions to accomplish on a societal level as well.

686. SPECIAL PROBLEMS IN CLINICAL TRIALS IN OLDER PEOPLE

S.H.D. Jackson (Kings College London; stephen.jackson@kcl.ac.uk)

The rise in per capita prescriptions in western populations is largely attributable to prescriptions written for the older population. Nevertheless the evidence to support the use of prescription medicines in the older population is less strong than in the middle aged population. The changes in pharmacokinetics and pharmacodynamics associated with ageing have been well described. These include a reduction in renal and hepatic clearance and an increase in the proportion of body fat (increasing the apparent volume of distribution of lipid soluble drugs and hence elimination half life). Pharmacodynamic changes relate to changes in receptor or transmitter function as well as changes in homeostatic function. The excess prevalence of adverse drug reactions in older patients relate not only to these changes but also to the multiple disease processes that may be present and the consequent drug therapy. In addition, other factors will also lead to changes in clinical trial design such as motivation, time scale, concurrent medication exclusions and the need for incarceration. When patients must be recruited who are cognitively impaired then additional considerations appropriate. Clinical trials must be designed with these points in mind.

687. CANCER AND NONCANCER ELDERLY PATIENTS NEED THE SAME CARE AT THE END OF LIFE

A. Jakrzewska-Sawinska¹, K. Sawinski¹,
K. Wieczorowska-Tobis², S. Dziegielewska² (¹Home
Hospice for Adults of Association of Volunteers of Palliative
Care in Wielkopolska, Poznan, Poland, ²University of
Medical Sciences, Poznan, Poland;
list@hospicjum-domowe.poznan.pl)

Background: Most people in contemporary society die of the chronic diseases of old age. Palliative care is mainly known as medical care and non-medical support for end stage of cancerous patients. However, we know that palliative care is for any end stage of non-curable disease. New view of palliative care brings difficulty of predicting when people will die and fear of causing distress by raising end-of-life issues. This old stereotype of palliative care reflects also in difficulties in law regulation in Poland. **Objectives:** to compare patients aged 65 years and older with end-stage cancer and non-malignant chronic diseases at the end of life and their needs for supportive care at home. **Methods:** systematic review using medical history of the patients from Home Hospice For Adults Of Association Of Volunteers Of Palliative Care In Wielkopolska. **Results:** Patients from Home Hospice For Adults Of Association Of Volunteers Of Palliative Care In Wielkopolska were identified for dementia, chronic obstructive pulmonary disorder, congestive heart failure, stroke, renal failure and cancers (colorectal, breast, pancreas). Key generic predictors of survival and cause of admitting were pressures ulcers, increased dependency of activities of daily living, presence of comorbidities, poor nutritional status and weight loss, and abnormal vital signs, total pain and laboratory values. In 2005–2006 we took care of 500 patients aged 65–104 yr old. 90% of patients 65 and older were patients with chronic, non-malignant diseases. 135 of them died within this time (90% of cancer). Total pains suffer 75% of cancer patients vs. 68% of non-malignant. All patients needed psychologist and volunteer help. Nurse support needed 76% of cancer patients and 92% non-cancer patients. Non-malignant patients more often (95% vs. 73%) needed many consultations in neurology, cardiology, pulmonology and others. **Conclusions:** There are no explanations to stop hospice care for patients with advanced nonmalignant disease. Palliative care specialists must collaborate with other specialists to evaluate appropriate, cost-effective services which meet patient for symptom control and psychosocial support.

688. GETTING QUALIFICATIONS IN LATER LIFE: WHAT IS THE POINT?

A. Jamieson (Birkbeck, University of London, Continuing
Education, London, UK; a.jamieson@bbk.ac.uk)

This paper is based on a major study of older adults in higher education, their socio-economic characteristics and the motivations and reported benefits of their studies. The research study consisted of a postal questionnaire survey of graduates from the two largest UK university institutions specialising in part-time provision for mature students. The study population was distinctive in two respects: their participation in the accreditation process and that they complete with a formal qualification. Just over 3,000 questionnaires were returned, representing a response rate of 58%. The quantitative data are complemented by qualitative material from in-depth interviews with 20 older students. It is

shown that, whilst a sizable proportion of the middle aged and older students were well-off and well educated, there was also considerable heterogeneity, and many were making up for opportunities lost earlier in life. A substantial proportion of the 'middle aged' graduates still saw qualifications as a pathway to enhanced employment opportunities, whereas the older graduates placed more weight on wider benefits. The qualification was seen as an important aspect of their chosen study. Using the responses to qualitative interviews, the paper explores the role of the qualification in the lives of the older graduates, and illustrates how this particular kind of study is an element of their strategies to manage the transition from work to retirement, and to make life in retirement more meaningful. One particular aspect is explored in detail, and that concerns the role of the examination process. Thus, although the emotional consequences and impact on self-esteem of 'failing' should not be downplayed, our evidence suggests that some older students appeared to see these risks as manageable. Indeed, rather than seeing 'stress' as a negative state, it is possible, as some research suggests, that under certain conditions, stress inducing events can be stimulating and beneficial to the functioning and health of individuals. It is argued that for many of the older learners of our study, the stress related activity entailed in assessment for a qualification added a positive aspect to their lives, because they had chosen this, and provided they received adequate support. It was part of their strategy for 'active ageing'.

689. QUALITY OF LIFE IN RETIREMENT: MEASUREMENT AND MEANINGS

A. Jamieson (Birkbeck, University of London, Continuing
Education, London, UK; a.jamieson@bbk.ac.uk)

In the last decade there has been growing emphasis among gerontologists on developing a greater understanding of the meaning of quality of life (QOL), which goes beyond a narrow health based definition. There are two opposing approaches to measuring QOL. First, a growing body of research focuses on the subjective meanings, that is: older people's own views of the constituents of QOL. In contrast to this, others argue that the use of proxy measures, whether defined by the researcher or the subject conflates the influences on QOL with QOL itself. This position argues for the development of objective measures. This paper will present a critical analysis of both approaches, using material from a longitudinal study of adults attending extra-mural (open access) classes at a London university. A postal questionnaire survey was conducted in 2000 of a random sample of 1600 of the newly registered students, yielding 765 responses (48% response rate). A follow-up questionnaire survey was conducted in 2005 (42% response rate). Of these, 31% were aged 60+. In depth interviews were conducted with a sample of respondents, of whom 18 were aged 60+. The interviews with the older students focused specifically on the meaning of study to people in later life and retirement, and also included some general questions on the meaning of quality of life. The paper will focus on the findings of these interviews, but report on selected aspects of the survey findings in order to give context to the interviews. The findings which emerged suggested a contradiction between the respondents' discourses on the role of studying, and their general discourse on QOL. On closer analysis, this appar-

ent contradiction resolves itself. Thus it is argued that in investigating the subjectively based constituents of QOL, it is important to distinguish between on the one hand what can be seen as individuals' general concerns in life, i.e. 'what matters' to them — their 'emotional priorities' and on the other hand how they spend their time — their 'time priorities'. Using illustrative material from the interviews it is further argued that the objective, needs based approach would seem helpful for the interpretation of the findings, and in understanding how different aspects of studying add quality in different ways to the lives of older people. Thus the outcomes were found to be inseparable from the process, and in combination added to the feeling of time well spent, and hence their quality of life.

690. THE INFLUENCE OF THE BURN OUT SYNDROM ON PROFESSIONAL CARERS' ATTITUDES TO OLD AGE

H. Janeckova, I. Holmerova, H. Vankova (*Gerontological Center Prague, Czech Republic; janeckova@ipvz.cz*)

Background and objective: The institutional care for elderly in the CR has been going through a radical change due to the new Social Services Act since 2006. The orientation of services from the medical model to the social model creates a big pressure on the professional carers. The requirements on the qualification, the work under time pressure, lack of personnel, unclear border between health and social area etc. create highly demanding environment. The aim of the project is to assess how the attitudes to old age are influenced by the burn out syndrom and by other factors. *Method:* 21 item Burnout Measure by Pines and Aronson and a 10 item questionnaire by Libigerova and the WHO EAAQ — questionnaire of the attitudes to the old age were used. *Sample:* 112 carers from the residential elderly homes, mostly women, 44% nurses and 56% social workers. *Results:* 28% of the carers showed higher risk of burning out, and 4% were really exhausted, needed help. According to both questionnaires, the burning out symptoms increased significantly depending on age and on the length of work in the profession. Nurses had been working in the field two times longer than social workers and were threatened significantly more by burning out (40% out of them while only 24% out of social workers). The linear regression proved years in profession as the most important predictor of burning out. Mild tendency to higher risk were also shown at carers living in towns, with elementary education and from lower socioeconomic classes. On the contrary the attitudes of the carers to the old age were dependent neither on age, nor on years in profession. They correlated significantly only with the burn out scores. People with higher exhaustion accepted old age worse. In EAAQ average scores showed that respondents believed the physical exercise was important in any age, old people were interested in love, one was as old as he or she felt, the old age brought wisdom and only on the fifth place they declared that abilities of old people decreased. The attitudes may have an impact on the quality of care especially when they correlate with burning out. The attention must be given first of all to nurses who not only work longer in their profession but are also touched more by the transformation of the social care system in the CR. *Supported by grant of the MoH CR No.NR8488-3/2005.*

691. INFECTION PREVENTION IN COLLECTIVE HOUSING FACILITIES FOR ELDERLY IN BELGIUM

B. Jans¹, C. Suetens¹, M. Struelens², O. Denis²
(¹Scientific Institute of Public Health, Epidemiology,
²ULB, National Reference Laboratory for MRSA, Brussels,
Belgium; bjans@iph.fgov.be)

Since the '80s, Methicillin Resistant *Staphylococcus aureus* (MRSA) is endemic in Belgian acute care hospitals and nursing homes (NH). The 2005 national prevalence study revealed that 19% of NH-residents were MRSA carriers. The control of transmission of resistant pathogens and new emerging strains in NH seems to be a real challenge. National NH-specific guidelines were created in 2005. Their implementation was evaluated in 2006. *Aims.* This study measures the implementation of the national guidelines for infection prevention in Belgian NH. *Methodology.* All 986 Belgian NH received a written questionnaire investigating the precautions implemented one year after publication of the guidelines. *Results.* 36% of all NH returned the questionnaire. 95% of the institutions knew of the guidelines and 84% used them as a reference for local MRSA protocols. Since the publication of the guidelines, 25% adapted their AB-policy. A therapeutic formulary was available in 86% of them, 18% had AB-agreements about the 4 most frequent infections in NH and 12% were able to quantify their AB-consumption. The biggest modification concerned hand hygiene practices: 91% of the NH adapted them, introducing or improving the use of hydro-alcoholic solutions and gloves and creating a written protocol. In 46% the use of gloves was still an individual decision. 61% of the NH adapted the additional precautions taken for MRSA-carriers. Excessive isolation of carriers was observed, 33% of the NH still limited social activities for low risk carriers. A carriers' room and the necessary precautions were not always clearly identifiable (25%). The screening policy was adapted: 14% never performed screening compared to 31% in 2005. Only half of the NH screened according to the guidelines. Currently, 3% never decolonize carriers compared to 16% in 2005. 89% applied the correct decolonization scheme. Besides high-risk carriers, nose-throat and intact skin carriers were decolonised (86%). After 3 failed decolonisation attempts, 77% of the NH considered the resident as a chronic carrier with periodic follow-up, decolonization with other products or sought advice from an expert. Unfortunately, 22% of the NH, an AB-treatment was started or the carrier remained isolated. Internal and external communication about carriership still remained insufficient. 80% of the NH kept MRSA-registers. *Conclusions.* This study includes only reported practices without observational confirmation. Tremendous efforts were made since the publication of national guidelines. The major message concerning the importance of hand hygiene has been received. Before, standardised use and consensus about hand hygiene practices was missing.

692. GERONTOLOGY VERSUS GERIATRICS: MOVEMENT AS A PROMOTIVE FACTOR OF AN ACTIVE OLD AGE

J.F. Jimenez, B.C. Rodriguez, R. Chacyn, R. Navarro, F.J. Hernandez, I. Monagas (*Las Palmas de Gran Canaria University, Canary Islands, Spain; jjimenez@denf.ulpgc.es*)

Introduction: Physical activity improves the capabilities of the individual gerontological. At the same time, movement is one of the most pressing needs in the geriatric institutionalized patient. *Objectives:* To assess the physi-

cal activity habits of elderly students in a university programme and to discover what technical assistance is provided in a geriatric hospital to make the mobilization of patients who are in hospital easier in a new environment. *Material and Methods:* Cross prospective study. *Results:* Walking seems to be the main physical activity engaged in by elderly students (100% for the men and 80.32 % for women). There men are capable of maintaining activity for longer. Around 9.83 % of women do not perform any physical activity although they perform more in social physical activities such as dance and aerobics. In 64.58 % of the geriatric patients who require the use of technical helps the proportional difference between women and men is 3:1. This type of help was usually of mobility nature accounting for 80 % of cases. *Discussion:* Using mobility to promote health in the elderly generates a series of benefits which are generally recognized by most of society although we still find a great number of old people who do not practice any physical activity at all. Therefore, it is important to consider that physical activity does not only provide personal benefits, but also, it is of great value as far as social relationships are concerned for example in the interaction of a dance class, etc. Requests for mobility aids are incremented in geriatric patients who are in hospital. In the traditional sense, technical aids have the aim of assisting the patient's autonomous mobility. However, several materials have now been developed for nurses to use when dealing with elderly patients in hygiene and comfort tasks. *Conclusions:* Obvious differentiation of physical activities (increasing difficulty and duration for men, greater flexibility and social integration in women) in elderly students. The request for technical aids in geriatric patients are clearly in correlation with the mobility needs of the patient and not in relation to other needs such as nutrition, etc. The cumulative effect of technical aids is more advantageous towards women in the patients studied. The need for mobility increases with age and so physical activity has to be promoted in women as a reaction to their lack of mobility in order to ensure they enjoy an active old age.

693. NEEDS AND EXPECTATIONS OF HOME MODIFICATIONS SERVICES AMONG PERSONS AGEING IN PLACE

K. Johansson, M. Lilja, S. Josephsson, L. Borell, I. Peterson (*Karolinska Institute; karin.e.johansson@ki.se*)

The amount of older people with functional limitations living in their own home are increasing in many countries as a consequence of the policies of ageing in place and a demographic change towards an ageing population. Persons ageing in place often face physical barriers in the home environment that has to be handled in order to manage everyday activities. One commonly used intervention to facilitate everyday activities is home modifications. Ageing in place can be understood as an ongoing process of place integration where needs, expectations and actions are continuously changing. The aim of this study was to identify perceived activity limitations and needs of home modifications in a sample of home modification applicants in Sweden. Further the aim was to explore the process of changing needs and expectations mediated by HM services. 102 participants were included in the study. Data on performance of ADLs was collected through interviews in the participants' home, using structured instruments. Four of the participants were invited to participate in a qualitative study. In this part data was collected with open ended

interviews and observations in the participants' home environment at repeated occasions from before the modification had been installed until the process relating to the HM was identified as ended. Results from the structured instruments show that participants reported high levels of independence in activities in daily living, and were using assistive devices to a large extent. However, the applicants clearly experienced difficulties in performing activities of daily living, especially in bath/shower activities and managing stairs. This was confirmed in the qualitative part, showing that the participants developed strategies to maintain independence while waiting for home modifications. As a consequence of the strategies used, activity performance was perceived as difficult, unsafe and complicated. The motivation for developing and use those strategies was a will to be able to make everyday decisions such as when to do an activity and what to buy where. Their needs and expectations of home modification services were to a large extent determined by the service process. The study indicates that the main reason for applying for Home Modification Grants was to reduce perceived difficulties in performance of activities of daily living that followed with strategies used to be able to make everyday choices while experiencing environmental barriers.

694. FAMILY NETWORK, LIVING ARRANGEMENT AND MORBIDITY IN 3 COHORTS OF ELDERLY ICELANDERS

J.E. Jonsson, H. Hansdottir, B. Magnúsdóttir (*Dept of Geriatrics, Landspítali-University Hospital, 101 Reykjavik, Iceland; jonejon@landspitali.is*)

Iceland has a fast growing segment of the population e.g. people aged 80 years and older. Of considerable interest is why a large proportion of this elderly population has chosen to change living conditions, eg. move to purpose built housing for the elderly, specially designed for disabled persons. The demographic profile of the population of Iceland 2006: Total number of inhabitants: 307.672, 80 years and older 9708 and living in the Reykjavik capital area are 4440, 35% male, 65% female. In the the R80+ study in Reykjavik, the cohort consisted of people born 1913, 1918 and 1923 a total of 689 individuals living in the capital Reykjavik. We find that the Icelandic cohorts show very closely knit family ties with many contacts with relatives' next of kin. One third (30%) report seeing their children daily and 69% daily telephone contact, the rich family network is prominent and influences living arrangement. The findings outline the family contact, support structure, perceived health and finances and its influence on living arrangement in the light of the severity of disease and function. There is a trend towards diminishing frequency of contacts in the 1923 cohort. The effect of the decision to move to a purpose built housing is explored in the 3 cohorts the main influences seem to be conceived health status and finances. The effects of moving to purpose built housing for the elderly on mortality is discussed.

695. INFORMAL STROKE REHABILITATION: WHAT ARE THE MAIN REASONS OF THAI CAREGIVERS?

P. Jullamate^{1, 4}, Z. Azeredo¹, C. Paul¹, E. Rosenberg², R. Subgranon³ (*¹Institute for Biomedical Sciences of Abel Salazar, University of Porto, Portugal, ²Appalachian State University, Boone, NC, USA, ³Burapha University, Chonburi, Thailand; jjullamate@yahoo.com*)

Rehabilitation in the home could be an effective alternative to stroke survivors who live in the community.

It may enhance functional recovery, minimize dysfunction and also promote the quality of life of the stroke victims. The aim of this qualitative study was to identify the reasons for providing informal rehabilitation at home to stroke relatives by Thai caregivers. Twenty primary informal caregivers were individually interviewed at their homes by using semi-structured questions elaborated by researchers. All interviews were recorded on audiotape. Content analysis was used to determine the reasons for performing informal rehabilitation. Four major reasons: (I) biological, (II) psychological, (III) social, and (IV) spiritual reasons, emerged from our content analysis to maintain for the stroke victims the highest possible quality of life. Improvement and prevention of further deterioration were the two main concepts in the biological and psychological reasons expressed by these Thai caregivers whereas maintaining human relations and maintaining usual social activities were the two main ones in the social reason. The main concepts in the spiritual reason were respecting the religious belief, respecting superstitions, respecting the culture of caregivers or patients, improving patients' empowerment, and improving caregivers' satisfaction. These four reasons encompassed the biological, psychological, social and spiritual aspects of a holistic approach to the definition of health. The health professionals in Thailand should encourage stroke caregivers to continue performing informal rehabilitation at home for their stroke relatives.

696. CAREGIVERS' NEEDS AND STRATEGIES USED FOR PROVIDING INFORMAL STROKE REHABILITATION: THE THAI CAREGIVERS' PERSPECTIVE

P. Jullamate^{1, 4}, Z. Azeredo¹, C. Paul¹, E. Rosenberg², R. Subgranon³ (¹Institute for Biomedical Sciences of Abel Salazar, University of Porto, Portugal, ²Appalachian State University, Boone, NC, USA, ³Burapha University, Chonburi, Thailand; jjullamate@yahoo.com)

Since stroke leaves devastating consequences; physical, psychological, and emotional impacts, to the survivors, informal caregivers have to play a crucial role providing all needed cares after being discharged from the hospital. Twenty primary informal caregivers were individually interviewed at their homes by using semi-structured questions developed by researchers to explore the methods used and to investigate needs during providing informal rehabilitation for stroke survivors at home. All interviews were audiotape recorded. Observations were also made during all interviews and some pictures of rehabilitation activities were taken during data collection. Content analysis was done on the collected data. Findings revealed that four major strategies used for providing informal rehabilitation activities were physical, psychological, social and spiritual rehabilitation activities. Biological rehabilitation was the most frequently undertaken by all Thai caregivers. Several methods were used to rehabilitate the stroke survivors in each strategy based on the scientific background and cultural beliefs of the caregivers and survivors. In addition assistance, information and social support were the three main needs of these Thai caregivers while providing informal stroke rehabilitation.

697. MENTAL HEALTH OF THE SINGLE ELDERLY IN KOREA

I.-K. Jung¹, K.M. Lee¹, C. Han¹, K.-S. Oh² (¹Korea University Medical Center, Seoul, Korea, ²Sungkyunkwan University School of Medicine; junginkwa@hanmail.net)

Objectives. In Korea, the number of single elderly has increased with noticeable speed. The single elderly get

a little economic support or assistance for their physical illness from their families and face with emotional problems like loneliness, frustration, and social isolation after losing their spouses. In this paper, we investigated the social and physical conditions of single elderly and tried to identify the difference between them and the elderly living with their family. *Methods.* The 3,209 elderly persons were randomly selected in proportion to age and sex from total 36,523 residents over age 60 living in a small city near Seoul, Korea. This study was composed of a detailed interview of socio-demographic characteristics, disease history, current disease profile and the recognition of stroke or dementia. It also included the Mini Mental State Examination, Beck Depression Inventory, Patients Health Questionnaire (PHQ) and the Mini-International Neuropsychiatric Interview. Interview and testing was conducted by trained field interviewers. The age of the subjects was from 60 to 84 years. *Results.* 81.1% of the single elderly were female. The proportion of the single elderly was significantly higher than those of elderly living with their family which was 53.4%. The single elderly showed overall lower educational levels compared to the elderly living with their family. 79.3% of the single elderly had monthly income below 500 dollars roughly. 35.6% of the single elderly and 22.5% of the elderly living with their family were possibly diagnosed as having decreased cognitive function. The prevalence of depressive symptoms in the single elderly was 76.2%, which was significantly higher than the rate of the elderly living with their family, 59.9%. *Conclusions.* Our study is novelty to investigate the general characteristics, prevalence of dementia and depression of single elderly compared with elderly living with their family. We suggest that special concerns and social welfare services for the single elderly are important to improve the quality of life and to prevent aggravation of depressive symptoms. To help these social efforts, more extensive and longitudinal study needs to be conducted.

698. AGENCY, EVERYDAY LIFE SITUATIONS AND SOCIAL WORK

J. Jyrkama (University of Jyväskylä, Tampere, Finland; jyrkama@yfi.jyu.fi)

Sociological discussion about human agency opens new and fruitful perspectives also in the gerontological research. For instance, studies on everyday competence of elderly people have concentrated too much on the characteristics of ageing individuals, and less on the situations where they act and use their capabilities. Here we need a new approach that moves the focus of analysis towards human agency: from individuals to situations, from «potential» competence to competence «in action». Based both on some ideas of Anthony Giddens' structuration theory and on so-called semiotic sociology, this paper elaborates a heuristic framework from the agency point of view for the analysis of daily interaction and social practices especially for the field of social work. According to this model, it is important to distinguish between different modal dimensions of situated human action and to approach the activity of participants from different perspectives. The paper shows how the model can be used for instance when analysing both action and its bodily, social and cultural aspects in everyday life situations. The aim of my paper is also show how the model can be used when for instance analysing local cultures in old age care institutions.

699. INCLUDING OLDER PERSONS IN EMERGENCIES IN INTERNATIONAL HEALTH ACTION: THE WHO PERSPECTIVE

A. Kalache (*World Health Organization Ageing and Life Course Programme; kalachea@who.int*)

This presentation will outline WHO's role, perspectives and action related to older people in emergencies (OPE), in close collaboration with other stakeholders represented in this symposium. Together we are developing a global response aimed at heightening awareness of how increasingly important it is to include older people's health and social care needs in humanitarian assessments, programmes and policies. Examples of concrete activities aimed at the development of policies and better practices will be given. WHO maintains that not only is it important to adequately respond to OPE needs but that their positive contributions as resources within such contexts should be appropriately recognized, nurtured and supported. WHO's main activities include: i) development of an evidence-base of best practices (through the commissioning of 15 OPE case-studies, assessing the impact of disasters on their health and wellbeing and the response it provoked; ii) promotion of advocacy and awareness through the publication and dissemination of a series of technical reports embracing WHO active ageing perspective and; iii) fostering cross-sectoral collaboration and coordination within WHO (through the Health, Action and Crises Cluster) and working with the Inter-agency Standing Committee (IASC) Health Cluster. Ultimately WHO is committed to develop an integrated health strategy for older people — addressing cross-cutting issues, from provision of services, economic assistance and prevention of social marginalization, to protection from abuse, provision of social welfare and support of intergenerational solidarity.

700. LEVEL OF NECESSITATE IS AN IMPORTANT PART OF LIFE QUALITY FOR SENIOR PEOPLE

A. Kalyzhkiy (*NPP «ELIIS», Russia; sakak@mail.ru*)

People organism represents the aggregate of its physical and mental qualities and it is a complicated hierarchical system. Effectiveness of its operations gives possibility to solve present tasks, defines life quality and, finally, the comfort of its existing. One of constituent of effectiveness of organism activity is an index of level of person necessitate which gets the more important the elder person and has effect for the level of health; there are a lot of senior people having enough vital activity and force for work and their non-necessitate has negative consequences for their psycho-emotional state and therefore for effectiveness of organism activity. Further various people have various value of this constituent and so give various weights in integral estimate of effectiveness of organism health and quality of life of Person. Therefore analyzing causes of changes of health level there is a task to define the weight of this constituent relative to others indexes of organism activity. In our paper we are considering the point of quantitative assessment of effectiveness of organism activity, also is given numbers of definitions, as well we suggest to look at human organism as at *aggregate of system for health assurance and complex of spiritual, intellectual and other rational activities*; at the same time the group of indexes of health assurance defines the level of normal activity of person and group of spiritual and intellectual indexes defines his inner life and intelligence world. The problem of development of mechanism

to estimate effectiveness of organism activity is pertinent to class of multiple-factor problems and can be solved by method of «sampled synthesis» and elements of theory of fuzzy sets that means: development of systems of indexes, describing human organism, selection of kinds of target function, taking in account reciprocal priorities of indexes, and after, making calculation to analyze and, in result, correctness of human operation. In our paper we examine indexes of organism activity, methods of estimation of every index, also there is given ratios to define coefficients of success (degree of success) and effectiveness estimation; as well is shown degree of influence of necessitate level on effectiveness of organism activity in general.

701. AGEING POLICY IN RUSSIA

E.V. Karyukhin (*Regional Public Foundation of Aged People Assistance «Dobroe Delo»; edkar1@mail.ru*)

Economic indicators. GDP growth in 2006 — 6.6%; unemployment at the beginning of 2007 — 7.3% of working population. Official inflation rate: 9%. However, the Institute for Economics maintains that real inflation was 25–30%. With a 26% salary growth means that the salaries do not keep pace with inflation. *Major public policy tendencies:* According to V. Lukin, Human Rights Ombudsman, there is «some distancing of the government from social sphere». Reforms are focused on technocratic problems and not social ones. There is no balance between government's social and economic policies. *Main demographic trends.* Population size of 2005: 143,474 million. City population: 104,719; rural population: 38,755; older than able-bodied age: 29,161; average life expectancy in 2004: 65.3; for men in 2004: 58.9; for women: 72.3; 2004 birth rate per 1000 people: 10.4; deaths per 1000 people: 16.0. *Ageing Indicators.* From 1979 to 2000 the population older than 60 increased by 7%, older than 85 — more than doubled. Share of men older than 60 years in 2004 — 13.1%; share of women older than 60 in 2004 — 21.9%. Ageing specifics in Russia: with the decrease of life expectancy the share of people of 60 and older keeps growing; especial growth in the group of 80 years and older; prevalence of women over men in age groups. *Main political ageing trend:* experts acknowledge the presence of «traditional» poverty of older people. Different problems of access to the state and public resources — social, medical, labor, educational and cultural are described in our report. The living wage is different for able-bodied citizens, children and pensioners. At present, the average old age pension is 20% of average wage. Government and Mass Media acknowledge pension reform crisis. Older people's financial position is made worse by low pensions and low participation in paid work. According to research, only 20% elderly people are satisfied with their life. Older people are becoming more socially and politically active, as shown by the protests after the adoption of law № 122 on pension reform early 2005.

702. AGE DISCRIMINATION: PRACTICAL ACTIONS TO ADDRESS REAL ISSUES

E. Karyukhin¹, G. Poliakova², and Age Concern England³ (¹*Dobroe Delo, Moscow, Russia,* ²*Turbota pro Litnih v Ukraini, Kiev, Ukraine,* ³*England; international@ace.org.uk*)

Age discrimination takes many forms, poor access to health care; elder abuse and social exclusion are just some

of its manifestations. It is being addressed in political debate, by legal frameworks and by civil society in different ways. This session will compare how age discrimination is experienced by individuals across Europe, including Russia and Ukraine. It will look at both qualitative and quantitative evidence and seek to explore how it's being defined and whether there's a common understanding of it. The session will also highlight the different legislative and policy responses that are in place and it will examine whether age discrimination is a mainstream concern or whether it is being addressed as a social, economic or human rights concern. It will draw out the commonalities and differences in approaches and seek to evaluate how effective these have been. Civil society has an important role to play in raising awareness of the issue, developing responses to it and influencing for change. The session will look at three examples of how civil society is organising and responding to the issue, drawing on current practice and experience. The responses include: delivering direct services to older people in order to alleviate the effects of age discrimination; advocacy campaigns to raise the issues of age discrimination at a national policy level; and developed information and advice services for older people in order to equip them to realise their rights. It will explore how older people's active participation in these programmes is itself a powerful tool against discrimination and how civil society can influence policy. The audience will be encouraged to participate in discussion after the three speakers in order to widen the discussion and hear experiences from a number of other countries.

703. INTERGENERATIONAL SUPPORT OF THE AGED: CONTEXTUAL APPROACHES

R. Katz, A. Lowenstein (*University of Haifa, Israel; ruth@soc.haifa.ac.il*)

The paper will present findings on the influence of filial norms, opportunity structures and emotional bonds between adult children and older parents on actual exchange of support, in a comparative 5 countries (Norway, UK, Germany, Spain and Israel) perspective — the OASIS project. Data from an urban representative age-stratified community sample (with over sampling of the 75+) of 1,200 respondents in each country totaling 6,000 were collected. Results show that the majority in all countries acknowledge some degree of filial obligations, but more so in Spain, Germany, and Israel. Country differences were more evident in the character than in the strength of filial norms. The family was found to provide more emotional than instrumental support with more support provided to unmarried parents with physical functioning limitations. There was a significant effect of filial norms on help received by older parents from adult children. Implications for the role of social work in supporting families, and especially adult children, when older parents need care will be discussed.

704. CAPABILITY OF DOING SELF DAILY LIFE ACTIVITIES OF ELDERLY PEOPLES IN A DISTRICT OF ANKARA, TURKEY

M. Kaya, D. Aslan, S. Vaizoglu, C. Doruk, V. Bicici, U. Dokur, A. Dursun, A. Erayman, O. Ertekin, T. Glen (*Hacettepe University; mkaya444@yahoo.com*)

Objective: This study was designed to determine the capability of doing «daily life activities» among 65 years

of age and older individuals in the catchment area of a Primary Health Care Unit in Ankara, Turkey. *Materials and Methods:* PHCU records were used to define the participants of the study. There were totally 347 registered people at this age group and 73.5% of them participated in this study (255 people). Survey was administered to elderly people using an interviewer-administered questionnaire by seven field researchers. The elderly people were visited in their home settings in October, 2006. Statistical Package for Social Sciences (SPSS) program was used for data entry and analysis. Daily life activities which were asked in this study was capability of «telephoning», «taking drugs», «doing housework», «dressing», «going to toilet», «taking a bath», «using public transportation», «taking daily drugs», «doing monetary activities», «eating meal». The participants expressed their capability in three categories: «can do independently», «can do with help», «cannot do at all». Short Form 36 (SF-36) which was validated for the Turkish culture was also used to determine the quality of life of the individuals. *Findings:* Mean age of the participants was 70.21 ± 4.5 , and the median was 69 yr. Majority of the people were females (54.9%; 140 people). Of the 65 years of age and older people; 61.2% (156 people) had migrated either from a village or other province/district. About one out of 10 people lived alone (13.7%). By and large of the elderly people reported that they could do their daily life activities independently (telephoning 70.2%; taking drugs 87.8%; doing housework 71%; having bath 91%; going to the toilet 99.2%; dressing 98%; eating meal 99.6%; using public transportation 61.6%; doing monetary activities 54.9%). There was statistically significant difference between males and females in some aspects. Males could benefit from public transportation ($p=0.007$) and do their monetary activities ($p<0.001$) more than females. On the other hand, females could do house works more independently than males ($p=0.003$). The relationship between the capability of doing their daily life activities and SF-36 scale points were also assessed in the study. *Conclusion:* Majority of the elderly people stated that they were able to do their daily life activities by themselves. Social, sexual and cultural factors as well as physical and health status of the elder people might have contributed to the difference between males and females in terms of doing their daily life activities independently.

705. DIVERSITY AMONG RURAL SENIORS

N. Keating, J. Eales (*University of Alberta, Edmonton, Canada; norah.keating@ualberta.ca*)

In this paper we focus on heterogeneity among older rural adults and how rural contexts may be differentially supportive to them. We draw on data from a national case study of older adults living in three different rural communities in Canada. We conducted semi-structured interviews with 149 older adults, family members, and service providers, and subsequently 10 community consultations to validate our analyses. Findings are that there are four different groups of older adults who differed in their interactions with people and services in their communities. Community active seniors were well-connected, had diverse social networks and active involvement in a range of formal and informal activities. Stoic seniors were reserved, independent, and practical, preferring productive activities and solitary over social leisure. Marginalized seniors lived

alone or as part of a tight-knit couple, had limited financial income, small social networks, and precarious health and were passive in their social engagement and connections to services. Frail seniors were long-term residents of the community who had significant health challenges that necessitated a reliance on others for support, but the frequency, type and source of support received varied. We discuss community features that are most supportive to these different groups of older adults, drawing on the ecological construct of 'best fit' (Parmalee & Lawton, 1990) to illustrate the circumstances under which rural communities are good places to grow old.

706. SYMPOSIUM: RURAL COMMUNITIES: GOOD PLACES TO GROW OLD?

N. Keating¹, T. Scharf² (¹University of Alberta, Edmonton, Canada, ²Keele University, Centre for Social Gerontology, Research Institute for Life Course Studies, Staffordshire, UK; norah.keating@ualberta.ca)

In western countries, our knowledge of aging has been developed primarily through an urban lens with rural issues typically considered in relation to urban research, policy and program outcomes. Such comparisons tend to result in uni-dimensional conceptualizations of rural, masking the variety of rural landscapes, rural communities and rural seniors. More than a decade ago, Keating (1991) called for an expanded understanding of «the heterogeneity of rural elders» toward a more nuanced view of processes of aging among rural residents. This symposium is based on a forthcoming book in which we focus on diversity among rural communities. In the four papers in this session, we consider variations among the older adults who live in rural areas and in the lifepaths that lead to this diversity. We consider their interactions with the rural contexts that shape their experiences and in turn are shaped by the presence, strengths, frailties and contributions of their older citizens. Common themes are drawn together by an expert discussant.

707. THE IMPACT OF HEALTH ON THE MEASUREMENT OF DEPRESSIVE SYMPTOMS IN OLDER PERSONS

G.I.J.M. Kempen¹, A.V. Ranchor², R. Sanderma²
(¹Maastricht University, The Netherlands, ²University of Groningen, Northern Center for Health Care Research, Groningen, The Netherlands; g.kempen@zw.unimaas.nl)

The depression subscale of the Hospital Anxiety and Depression Scale (HADS-D) claimed to be less sensitive for chronic medical morbidity because it comprises hardly any somatic items. As a result the HADS-D should be more useful in older populations because of the higher prevalence of chronic medical morbidity in such populations. In this study we compared the impact of chronic medical conditions and self-reported physical functioning on the scores of the HADS-D (7 items) and the CES-D (Center for Epidemiological Studies-Depression; 20 items) in 753 low-functioning older persons in the Netherlands. Self-reported physical functioning (as assessed by the Groningen Activity Restriction Scale and the MOS SF-20 subscale for physical limitations) explained 4.4% of the variance in the HADS-D and 3.5% in the CES-D. However, chronic medical morbidity (the prevalence of 18 chronic medical conditions) explained 2.4% of the variance in the HADS-D and 8.5% in the CES-D. A more specific analysis showed that physical functioning and chronic medical morbidity

were particularly related to the sumscore of the 7 somatic items of the CES-D (6.0% variance explained by physical functioning and 10.9% variance explained by chronic medical morbidity) as compared to the sumscore of the 13 non-somatic CES-D items (1.7% variance explained by physical functioning and 6.2% variance explained by chronic medical morbidity). We conclude that the scores of the CES-D are more sensitive to chronic medical morbidity as compared to the scores of the HADS-D. However, for self-reported physical functioning we found only small differences.

708. FREQUENCY OF SOME ILLNESSES OF MIDDLE-AGED AND ELDERLY PEOPLE WHO LIVED THROUGH THE SIEGE OF LENINGRAD AS CHILDREN AND YOUTHS

L.P. Khoroshina (St. Petersburg Medical Academy for Post-Graduate Studies, Russia; solt54@mail.ru)

The long-term consequences of the protracted starvation or inadequate nutrition of children is a problem in which considerable interest has been shown in recent decades. Between June 1941 and January 1944 the civilian population of Leningrad was besieged for two and a half years. Extreme living conditions had an adverse effect on the physical development of children who survived the siege of Leningrad: they were 2 to 3 years behind children of the same age from before the war (1940) in physical development, and this retardation persisted through 1946–48. We made a comprehensive study of the state of health and the causes of death of people in older age groups whose childhood or youth was spent under siege in Leningrad. Retrospective analysis of the results of autopsies performed on patients born in the period 1927–41 who died in wards of the St. Petersburg Hospital for War Veterans was an integral part of this research. Out of 10782 case histories of patients who died in the wards of this hospital between 1989 and 2000 we used 594 case histories for statistical processing (385 case histories of men and 209 of women). There were autopsy reports on all the case histories analysed. The documents studied were divided into two groups. The first (main group) comprised 303 autopsies on patients whose childhood or youth had been spent in Leningrad under siege (170 men and 133 women). The second (comparison group) comprised 291 autopsies on patients who had not gone through the siege (215 men and 76 women). The aim of the research was to study the causes of death and the frequency of certain diseases in patients of the two groups. The significance of the results was determined from Student's criterion of the difference of mean values and the t-test (of the difference of relative indicators). The number of patients in the subgroup was taken as 100 per cent. When making the statistical analysis we noted a statistically significant reduction in the age at which the men and women of the main group died. Thus, men who had lived through the siege of Leningrad in childhood died at $63,4 \pm 0,3$ years (as against $64,7 \pm 0,3$ in men of the comparison group), and women at $65,0 \pm 0,4$ (as against $66,8 \pm 0,6$ in women of the comparison group). The main cause of death of patients in the main and comparison groups was cardiovascular disease, which accounted for $49,4 \pm 3,8$ per cent in men of the main group and $56,4 \pm 4,3$ per cent in women of that group (the figures for men and women of the comparison group were respectively $48,4 \pm 3,4$ per cent and $48,7 \pm 5,7$ per cent). In evaluating the nature of atherosclerotic dam-

age to the arteries we used the classification of qualitative and quantitative atherosclerotic changes of the arteries proposed by G. G. Avtandilov (1990). Complicated forms of atherosclerotic damage to the coronary arteries were noted more frequently in the men of the main group (37,1±3,7 per cent as against 26,4±3,0 per cent in men of the comparison group), and to the cerebral arteries (14,7±2,7 per cent as against 1,4±0,8 per cent in men of the comparison group). When the area of atherosclerotic damage to the aorta and to the coronary and cerebral arteries was assessed, a significant difference was found in the number of men of the main group exhibiting a lesser area of vascular damage (from 30 to 50 per cent). A large area of atherosclerotic damage to the aorta and to the coronary and cerebral arteries (50 per cent or more) was noted in the men of the comparison group. Men in the main group exhibited a marked tendency ($t=1,93$) to an increase in the number of previous myocardial infarctions (48,8±3,8 per cent as against 39,1±3,3 per cent in men of the comparison group). Severe arterial hypertension accompanied by myocardial hypertrophy of the left ventricle was recorded in women of the main group (19,5±3,4 per cent as against 9,2±3,3 per cent in women of the comparison group). Diabetes mellitus was found in 26,3±3,8 per cent of women who had lived through the siege of Leningrad in childhood or youth (as against 9,2±3,3 per cent in women of the comparison group). We assume that the established characteristics of atherosclerotic damage to the aorta and the coronary and cerebral arteries, and the frequency of post-infarction cardiosclerosis and progressive cardiovascular insufficiency may be explained by present-day views on two variants of the clinical course of atherosclerosis (non-stenotic, disseminated or dilatational atherosclerosis and not leading to stenosis of the vessel). The increased frequency of severe arterial hypertension and diabetes mellitus in women of the main group may be due to the influence of malnutrition in early childhood on differentiation of the hypothalamic centres that shape the feeding behaviour and growth of the organism. The later availability of food promotes the accumulation of excess fat, which increases the risk of diabetes mellitus of the second type, which is intimately connected with disordered (excessive) eating in adulthood. The men of the main group (unlike the women who survived the siege) were not found to exhibit an increased frequency of arterial hypertension and diabetes mellitus. This fact may be assumed to have been conditioned by the different times of critical periods in the development of the male and female organism and, consequently, different times of increased vulnerability of the regulatory systems (including the centres of the hypothalamus, the «pituitary-adrenal» axis) controlling the various forms of metabolism and many haemodynamic parameters. We assume that changes in the state of health of middle-aged and elderly people who had lived through the siege as children may be due to impaired haemovascular homeostasis in the organism of the adults who experienced extreme conditions in their childhood and youth. Our assumption is based on scientific facts demonstrating the link between increased risk of the development of diabetes mellitus, obesity, arterial hypertension and increased thrombogenesis, as well as of the occurrence of ischaemia, atrophy of any organ and malfunctioning of endothelial cells. Malfunctioning of the arterial endothelium may be due to the influence of many factors, both endogenous and exogenous. It is probable that the extreme conditions of life in besieged Leningrad

(starvation, lengthy malnutrition, the nature of food substitutes, etc.), because they were extremely adverse factors affecting the organism of children of all ages in Leningrad under siege, largely determined the formation of the functional structures of the vascular endothelium. More than half a century has passed since the lifting of the siege of Leningrad, which had lasted for many months. Its consequences continued to affect the state of health of the child survivors of such extreme conditions for very much longer. We have shown that middle-aged and elderly people who experienced lengthy periods of starvation during childhood and youth are a population group at high risk of developing a number of illnesses. These people need additional medical and social assistance.

709. AGING AND WORK IN AGING SOCIETIES — COMPARATIVE ANALYSIS OF THE EMPLOYMENT POLICIES IN EUROPE AND IN ASIA

H.R. Kim, J. Lee (*Hallym University, Chuncheon, South Korea; graceapril@hanmail.net*)

The economic and social consequences of the aging society are already being raised as a worldwide issue, and accelerate EU member states to cope with the effect of these. EU member states cooperate to react in front of this phenomenon while adopting 'the active aging policies and practices' as a common doctrine. This doctrine consists in developing continuously the vocational ability, delaying the retirement and encouraging the aged to participate in the labor market after retirement or in an activity for the individual ability and health. Nevertheless, each member state has operated and developed distinctive policies adapted to its specific context. The labor market policy for aging workers has been showing some ambiguous patterns for the last two decades. European countries, e.g. France and Germany, introduced the principal of early exit from the labor market to increase the employment possibilities among the younger, which provoked the low labor market participation for the workers 55 years old and over. Above all, the early exit influenced the manner of thinking. According to A-M Guillemard, 'the early exit culture' took hold in the employers' and workers' consciousness. Moreover, many workers perceive the early exit as a right. Now the government shifts the policy from encouraging the early exit to promoting the employment of older workers and increasing the retirement age. However, the each country has the demographic difference and the diversity of the labor markets for older workers. This is why each government seeks a specific strategy. In this context, this study purposes to search the differential characteristics of the strategies and the policies to respond to the common issues of the population aging. It shows 'the path dependency' of the social policy and gives suggestions to find the appropriate strategies in each state. For this, we'll analyze the characteristics of the employment policies in Finland, England, France and Germany in a comparative perspective, and also compare these results with the conditions of the Asian countries such as Japan and Korea. The key analyzing concepts are the population aging, the employment policy, and the labor flexibility as the characteristics of the postindustrial society. That is, we will point out several reasons why it appears somehow necessary to renew the welfare state policy, including employment policy, to deal with the quantitative and the qualitative change of the labor as well as of the population aging.

710. SHARED RESPONSIBILITY IN LIVING GROUPS FOR PEOPLE WITH DEMENTIA

T. Klie (*German Society of Gerontology and Geriatrics; klie@efh-freiburg.de*)

In various European countries living groups for people with dementia provide care and support specifically to people with dementia. Living groups show a broad variety in terms of responsible body, finance and conceptual characteristics. Among other forms «living groups in shared responsibility» enable relatives a broad participation, allow people with dementia to take part in daily life activities and constitute a cost-efficient form of care. Thus, they represent a new option between home care and nursing home. From 2004 to 2006, the Research Division of the Protestant University of Applied Science in Freiburg, Germany carried out the research project: «Network Living Groups for People with Dementia», which, among other things, investigated living groups in shared responsibility. The concept of shared responsibility bases on the idea of a Welfare Mix: Market, state, primary networks (first sector/family) and associations (third sector/volunteering) cooperate in producing welfare to those in need of care. Each of the four sectors contributes to this process in its particular functional logic: exchange of money (market), policies and legal framework (state), commitment (families) or in terms of membership (associations). Thus, in the daily routine of a living group tasks and responsibilities are to be negotiated between formal and informal carers in a co-productive way. The results of the qualitative study in eight German living groups show that the model of shared responsibility provides both relief for caring family members as well as participation in their relative's daily life, including responsibility for different matters (furnishing the room, clothing, etc.). This appears to be a very satisfactory arrangement for the interviewed relatives of people with dementia. Following the estimation of professional carers and relatives, satisfaction and quality of life of the inhabitants also appear to be high. Living groups in shared responsibility realise a high quality standard because of their transparency principle. They facilitate a sustainable motivation of relatives and volunteers. Continual and complex processes of communication and negotiation between the participating formal and informal carers are essential for a successful work. Core themes to be negotiated are: Values/moral/control, economy/costs/resources and professionalism/quality/skills. Key dimensions of such living groups are: Responsibility as: familiar responsibility, (functional) supervision, operational decision-making, organisational responsibility, economic responsibility and moderation, quality as transparency, the balance of quality in both relationship and performance and, implementation as capital expenditure and origin of the initial project (e.g. care provider, group of relatives and volunteers, ...).

711. USING A COMMUNITY DEVELOPMENT MODEL TO RAISE CHRONIC DISEASE AWARENESS AND KNOWLEDGE IN SENIORS COMMUNITIES

M. Kloseck, M. van Zandvoort, R.G. Crilly (*University of Western Ontario, London, Canada, mkloseck@uwo.ca*)

Introduction: We are in an era of chronic disease, with a growing number of elderly, within health systems that are already stretched. Recently much attention has focused on the self-management of chronic diseases. There are many questions around the feasibility of this approach with indi-

viduals in advanced old age who have many problems and reduced physical and mental capacity to deal with these problems. We propose that the self management of chronic diseases in communities of seniors is best done in a community rather than individual context. *Purpose:* To explore the feasibility of a community development model to raise awareness and increase knowledge related to chronic diseases in communities of seniors. Osteoporosis is used as a case study. *Methodology:* A community development approach was used in a local community of seniors (n=2500; mean age=76 years±8.09 SD; 77% female, 23% male) to raise awareness and increase knowledge related to osteoporosis and to train seniors to act as peer educators and mentors within their community. Seniors (n=9) interested in osteoporosis were recruited and participated in a 2-week training program that contained 5 substantive osteoporosis education modules, 1 session on public presentation skills and several practice sessions. Once trained, seniors designed community osteoporosis information and developed a senior-friendly education program. Pre-post knowledge and confidence surveys were administered at baseline and post-training. *Results:* There was a statistically significant difference in the confidence of seniors before and after their training regarding their ability to lead osteoporosis education programs for their peers (m=2.0±.816 SD vs. 3.14±1.07 SD, p=.05). Knowledge surveys administered at baseline and post-training showed changes in knowledge (m=14.2±3.4 SD vs. 17.1±2.1 SD, p=.09) but this was not statistically significant. The community-led education program is now being evaluated through a randomized controlled trial. Outcomes of this will demonstrate the feasibility of this approach in optimizing chronic disease outcomes in communities of seniors. *Conclusion:* A community development model with peer-led education sessions may be an economical and effective way of raising chronic disease awareness and knowledge in communities of seniors.

712. VALUATION OF LIFE, VALIDATION OF A DUTCH VERSION

C.P.M. Knipscheer¹, N.M. Schoor van², J.H. Smit³, B.W.J.H. Penninx³ (*¹Vrije Universiteit, Sociology, ²Vrije Universiteit, EMGO Medical Center, ³Vrije Universiteit, Psychiatry, Amsterdam, The Netherlands; cpm.knipscheer@fsw.vu.nl*)

Lawton et al (2001) wrote: «The research reported here sought to specify an intervening psychological mechanism between health and utility judgement that takes adequate account of many possible factors that might operate in determining whether a person wish is to continue to live. Valuation of life (VOL) is the term for subjectively experienced worth of a person's life, weighted by the multitude positive and negative features whose locus may be either within the person or in the environment. VOL is thus greater when one anticipates a future in positive terms». In general, VOL gives reason to look beyond physical distress or depression for factors that may determine whether the person sees life as being worthwhile or not. This 19 items scale has been translated in Dutch and was used in the fifth observation of the Longitudinal Aging Study Amsterdam (LASA) among 1200 respondents 65–95 of age. The outcomes of the validation procedures will be presented. Factor analysis (varimax and oblique) resulted in a 12 items Dutch «Valuation of Life Scale (Chronbach's alpha 0,79), with three subscales, identified as competence, motivation

and resignation (Chronbach's alpha: 0,77, 0,80 and 0,73 respectively). Construct validity checked with mastery, locus of control, self-esteem, depression and loneliness was good and in the direction as expected. Correlations with background variables as age, sex, and level of education are substantive. Reliability and test retest analysis will be presented. In addition the possible theoretical and policy relevance of this scale will be discussed as well as its contribution in explaining how long one wishes to live.

713. LEARNING AND AGING: A CONTRADICTION AREA OF SOCIAL INCLUSION AND EXCLUSION

E. Kolland (University of Vienna; franz.kolland@univie.ac.at)

Purpose: Education is one of the central issues of the 21st century along all phases of life. During the time of gainful employment, particularly the *formal* aspects of educational certificates are of interest. After retirement, *informal* aspects and aspects of *personal development* become more relevant. Education is thus not only a resource for economic productivity, but also relevant for one's social status, individual lifestyle and self-fulfilment. However, not all members of society have access to education and lifelong learning. Older people are strongly under-represented in (institutional) learning processes although there is much evidence about the ability and positive effects of learning in higher age. Particularly those that have not been able to acquire the cognitive and motivational requirements and necessary foundations for successful learning are affected by social exclusion. *Object:* The question arises whether social inclusion/exclusion is a result of all forms of learning in higher age or primarily of institutional learning. Do social status and one's personal learning biography influence educational participation in higher age? Does a negative self-image in higher age lead to self-exclusion and respectively, do a positive self-image in higher age promote social inclusion? *Method:* On the background of these prerequisites a representative empirical study (n=504; person 60 years and older) conducted in Austria in autumn 2006 will be presented on learning activities in institutions and informal settings. *Main results:* We find a respectable inclusion into learning processes of persons with a positive learning biography. Individuals who do not participate in education believe that they would not benefit from such educational measures. Furthermore, lifelong learning is rather associated with vocational versus post-vocational learning. 63% of all interviewees believe that age is irrelevant for educational participation. Lower educational participation rates among people in higher age are thus not a direct result of a negative self-image in higher age. Furthermore, this phenomenon is not a consequence of the belief that education is not beneficial in society. 68% believe that «investing in education of older individuals has indeed a positive effect for society». Informal learning appears to be more relevant for older individuals, for 76% of all interviewees indicate having learned during reading activities, 74% while watching TV, listening to the radio or reading the newspaper, 67% during handicraft and technical activities and 63% while exchanging views with friends and family members. However, the practical value of the acquired knowledge is considered low. Additionally, individuals who are involved in institutional learning processes also tend to benefit more from informal learning.

714. THE SOCIAL AMBIVALENCE OF ANTI-AGEING

H.-J. von Kondratowitz (Deutsches Zentrum für Altersfragen, Berlin, Germany; kondrato@dza.de)

From its early beginnings the Anti-Ageing Movement has defined itself as a comprehensive endeavour to stimulate deep rooted changes in everyday behaviour on the side of ageing humans. Such a perspective rests implicitly on the assumption that there is a common ground of scientific expertise to give incentives and support to such changes and that this ground holds regardless of the respective scientific base where it is extracted from. But this assumption of such common ground does not seem to hold, at least not from the social sciences. On the contrary, sociology and psychology have articulated strong resistance against central assumptions of anti-ageing. Instead of fighting age (as some observers have formulated «the war against old age») the implicit normative credo of social sciences seems to be a consequence of their scientific perspective: refuting the negative image of ageing and demonstrate by experiments as well as scientific research that ageing is a much more diverse in real life than its conventional negative image of decay claims and therefore advocating a pro-ageing in order to influence ageing by own activities. Apart from these essential reservations there has also been a more practical side: of acknowledging the modern behaviour program of the Anti-Ageing movement and of its experimental side to reshape research.

715. SOCIAL AND ECONOMIC BASIS OF QUALITY IN MEDICAL-SOCIAL SERVICES FOR ELDERLY PATIENTS IN RUSSIA

I.D. Kopyrina¹, M.V. Malakhovskaya², A.L. Arie³

¹Regional Mental Clinical Hospital, Arkhangelsk, Russia, ²N. A. Semashko Northern Medical Centre of Public Health Care Ministry, Arkhangelsk, Russia, ³Medical Academy of Postgraduate Studies, St. Petersburg, Russia; irina_arkhangel@mail.ru

A swift growth of specific gravity and absolute number of elderly people increases demographic load. This tendency has a considerable influence upon financing and quality of medical and social services (MSS) for the elderly. Limited budgetary financing, high prices for original medicines are the reasons of difficulties in rendering qualitative MSS for the elderly. Changes in Russian legislation, coming as the result of recent reforming in medical and social spheres in the country in the case of providing services for the elderly, remained unnoticed, with the exception of substitution of privileges for pecuniary payments. Nevertheless, these changes have adversely affected opportunities for the old aged to get MSS in the same volume. In 1993 the law named «Russian Federation basis of legislation in public health care» was passed. Then after coming into force of federal Law from 22d of August, 2004 — № 122, «RF basis of legislation» lost articles № 26–27, which consolidated a right of elderly citizens and disabled persons to get MSS, rehabilitation and medicines for free or on favourable terms. Especially, the hospital patients, clients of social institutions and territorial outpatients' clinics suffered from these reforms. They lost an opportunity to take medical consultations of particular experts, to pass disease-prevention and clinical examinations for free (article № 40 «Specialized medical treatment»). As a rule, an estimate of old peoples' homes doesn't include means for

these purposes. The reform of health and social welfare, carrying out in compliance with federal law № 122 and which, in fact, abolished municipal sector of MSS in the majority of regions, was implemented within the bounds of Constitution currently in force, but at the same time it wasn't coordinated with world tendencies. The sector of non-governmental organizations, which provides MSS for old people in institutions, doesn't function in full measure and, simultaneously, the municipal sector, which showed itself to advantage, is collapsing. The system of introduction of innovation technologies in Russia feels lack of economic evaluation and analysis. So whatever new alternative forms of services exist, all their trading costs (even minimum) should be reviewed and correlated with its positive and potential results such as increase of life expectancy and improvement of quality of life or saving other resources. Supposed solutions could be the following: 1) to transfer a part of financial responsibility in non-governmental sector; 2) to improve quality and availability of MSS by means of forming the appropriate market with equal conditions for governmental organizations and NGOs; 3) to remove providing a part of MSS on the base of state order; 4) to use economic evaluation, consisting of five types of analysis, in planning: cost of illness, cost-minimization analysis, cost-effectiveness analysis, cost-utility analysis, cost-benefit analysis. Unfortunately, an applying of this method comes into conflict with Russian present-day reality. It means that in Russian public health care system there is no absolute unification of prices for medical treatments and services, medicines, and variety of prices, determined by the Fund of compulsory medical insurance and self-supporting running institutions, is so great and in both cases is not adequate.

716. PHARMACOTHERAPY OF GERIATRIC PATIENTS IN HOSPITAL

S. Krajcik¹, I. Bartosovic², L. Hegy³, M. Wawruch⁴
 (¹Slovak Medical University, ²St. Elisabeth's School of Health and Social Work, ³School of Public Health, Slovak Medical University, ⁴Department of Pharmacology Medical Faculty of Comenius University, Bratislava; skrajcik@szu.sk)

The aim of the paper was to find out prevalence of factors increasing drug risk at patients treated at geriatric department. The prevalence of polypharmacy was present at 64,9% to 86,9%. 22,7% patients used the drugs from Beers list. The most frequent of them was ticlopidine, used by 14,1% patients. Increased levels of creatinine were found at 55,5% patients and 48% patients had hypoalbuminemia. 12,5% had positive history of drug allergy and 37,8% patients were demented.

717. PREMATURE AGEING OF THE POPULATION OF RUSSIA AT THE END OF THE XXth CENTURY

V.N. Krutko, T.M. Smirnova (Institute for Systems Analysis; krutkovn@mail.ru)

Purpose: Development of a method to evaluate the population of Russia demographic losses during socio-economic reforms considering age-specific death rates. *Method:* For each year from investigated decade the degree of premature ageing for each age and sex group was estimated by criterion of equivalent mortality rate, i.e. by comparison of age of the appropriate groups with age, in which the same mortality rate took place in 1990. Data

from the official publications of the State Committee of the Russian Federation on Statistics were used for calculations. Gompertz model was selected to fit age dynamics of mortality rate in the age range 20–80 years. *Results:* In the age range, for which Gompertz model provides high accuracy of approximation of mortality rate, essential acceleration of aging was revealed by criterion of equivalent mortality rate. This phenomenon was more strongly expressed for men in comparison with women and for young people in comparison with the elderly. In 1999 the degree of premature ageing made in comparison with 1990 for 20-year's men and women accordingly 8 and 5,5 years, for 50-year's — 4,5 and 3 years, and for 80-year's — 1 year and 0,5 years. *Conclusion:* The method of evaluation the rate of ageing by criterion of equivalent mortality rate has allowed to detect a phenomenon of premature aging of the population of Russia at the end of XX century. This phenomenon was more strongly expressed in men in comparison with women and in the young part of the population in comparison with the elderly part.

718. COMMUNITY-BASED PREVENTION FOR DISADVANTAGED OLDER PEOPLE: THE STATE OF RESEARCH AND PRACTICE IN GERMANY

S. Kuempers (Social Science Research Center Berlin, Research Group Public Health, Berlin, Germany; kuempers@wz-berlin.de)

Introduction: Epidemiological research shows the untapped potential of primary prevention for older people. Particularly groups of lower socioeconomic status could benefit from prevention efforts, given that health inequalities persist well into the later years. Knowledge from health promotion and gerontology guide successful approaches. Prevention for socially disadvantaged populations requires a 'settings approach', i.e. interventions in the relevant social contexts. For older people this is mainly the neighbourhood, since mobility declines with age and networks decrease. Despite the growing political and scientific interest in prevention for older people in Germany, disadvantaged groups of older people are seldom addressed. *Methods:* A search of German databases listing community-oriented health promotion projects revealed that preventive efforts for disadvantaged groups of older people are in an early stage of development. Interviews with leaders from established projects identified models of good practice, providing information on several topics: the groups targeted for intervention, strategies to engage the target groups, emerging issues in project development, and factors related to the success and failure of interventions. *Results:* Successful prevention interventions address directly the needs of specific target groups of older people and rely on participation and empowerment. Supporting social networks emerged as a key issue; organisational networking was needed as well to maximize a neighbourhood's resources and to foster sustainability. Instruments for evaluation and quality assurance have yet to be developed and implemented. *Conclusion:* In general, the neighbourhood is a suitable starting point for prevention interventions for socially disadvantaged elders, as it constitutes their most important social context. Researchers and practitioners need to cooperate on developing new intervention concepts and appropriate methods of evaluation and quality management.

719. INFORMAL CAREGIVERS OF DEPENDENT ELDERLY: PERCEIVED BURDEN

I. Lage (School of Nursing — Minho University, Braga, Portugal; isalage@hotmail.com)

An increasing number of functionally dependent elderly persons are being cared for family members in a community setting. The serious consequences for those family members who are engaged in caregiving, in particular, the impact on emotional, physical, social and financial well-being of carers, have been widely recognized in literature (Poulshock & Deimling 1984; George & Gwyther 1986; Vitaliano et al 1989; 1991). Thus, the costs of informal caregiving on caregivers lives of elderly, is not an individual issue, but a society problem given the inevitable aging of the population. This quantitative study, using an exploratory and co relational design, examined caregivers characteristics, and the degree to which variables affect the perceived impact of caregiving on their lives. A convenience sample representing 214 primary informal caregivers of dependent persons aged 65 or more, with a wider variety of diagnosis except dementia and living in an urban setting, was obtained from health services in a community. For study caregiving context, we used a general questionnaire, which included context variables and socio-demographic variables of caregivers and questions about self-perception of health and about quality of life. We also used a questionnaire to access to the elderly socio-demographic and clinic variables. The perceived burden was measured using The Portuguese's versions of The Profile of Mood States- POMS-Perfil dos Estados de Humor (Mc Nair et al 1981; Azevedo, Silva & Dias 1991), and The Caregiving Appraisal-Escala de Avaliação do Cuidado Informal (Lawton et al 1989; Martin, Paúl, & Roncon 2001). The functional status of the elderly was calculated by the ADL Index (Katz, 1963), and the AIDL Scale (Lawton et al 1969). This study found that caregivers were predominantly woman, daughters, often living with their dependent family member. The findings suggest that there is a positive correlation between some caregiver's characteristics and the caregiver burden, that is, the caregivers who has personal and social resources (i.e. more education, more income, social support and secondary caregiver), reported less significantly burden than those who have not these resources. Health professionals working with families in a community, must recognize the potential negative consequences of family involvement in elder care, and implement effective interventions/strategies, that maximize their well-being and quality of life.

720. FORECASTING FUTURE COSTS OF LONG-TERM CARE USING CONSUMPTION OF CARE IN THE END OF LIFE

B.E.M. Lagergren (Stockholm Gerontology Research Center; marten.lagergren@aldrecentrum.se)

Future costs of long-term care and services (LTCaS) for the elderly will depend on the increasing number of elderly persons but also on needs given age and gender. Different studies of health care consumption have shown that the consumption tends to be concentrated to the last years of life. Data collected in the Swedish SNAC-study — Swedish National study on aging and Care — shows that this also goes for LTCaS. Using that data and combining it with data from death registers it is possible to calculate LTCaS consumption per age group and gender for those

that will die the actual year, the next year and the following year compared to those that will survive all three years. This shows that of the total costs for care of the elderly 20% goes for those, who die the same year, and 18% for those who die the next. By combining this consumption data with data on projected mortality it is possible to calculate a projected consumption of LTCaS. According to this method of calculation costs in fixed prices will increase by 39% during the period 2005–2030 compared to 57% as calculated by a simple projection based solely upon projected numbers of elderly in different age groups.

721. SUCCESSES AND GAPS: THE NGO PERSPECTIVE ON MADRID PLAN ACHIEVEMENTS IN THE AREA OF SENIORS AND EMERGENCIES

M. Lake (Help the Aged UK; Mike.Lake@helptheaged.org.uk)

This presentation will describe the efforts, post-Madrid 2002, of several key international NGOs specialized in service to the elderly in meeting the needs of older persons in the four stages of the disaster cycle. Attention will be drawn to success stories — examples of where NGO efforts have been successful in assisting older persons to gain their fair share of resources and/or that foster resiliency and enhance older people's ability to contribute in emergency response or rebuilding. As well, the presentation will describe action items outlined in the Madrid Plan that remain to be addressed or that have been addressed in only cursory fashion. Of particular interest, are attempts to assist in the development of national guidelines for assisting older persons, in disaster relief plans; development of rapid needs assessment tools; and of a Vulnerability Index. The NGO perspective of what is needed to advance the agenda in these areas will be a subject of special attention in this presentation.

722. INCIDENT ADL/IADL DIFFICULTIES AND CHANGE IN SUBJECTIVE WELL-BEING IN MIDDLE-AGED ADULTS IN AN ENGLISH COHORT

I. Lang, D. Melzer (Peninsula Medical School, Wonford Site, Exeter, UK; iain.lang@pms.ac.uk)

Background: Subjective well-being is prominent in contemporary discussions about healthcare and health policy. If promoting good subjective well-being is a desirable healthcare outcome it is important to identify the factors most associated with a reduction in well-being. But little is known about how it is affected by incident difficulties with specific activities of daily living (ADLs) and instrumental activities of daily living (IADLs). *Objectives:* To assess the effects on subjective well-being of specific incident activities of daily living and instrumental activities of daily living (IADLs) in a group of middle-aged adults. *Design:* 3370 adults aged 50 to 65 who participated in the first wave of the English Longitudinal Study of Ageing (ELSA) and were followed up two years later. Subjective well-being was measured at baseline and follow-up using the CASP-19 instrument. Effects on change in well-being associated with the incidence of specific ADLs and IADLs were assessed in those free from these problems at baseline. Models were adjusted for potential demographic, psychosocial, socioeconomic, health, and health behaviour confounders. *Results:* Of 3370 respondents aged 50 to 65, 13.2% (95% CI 12.0% to 14.3%) reported one or more ADLs at follow-up. Mean CASP-19 score at baseline was 43.8 (95% CI 43.5 to 44.1), and mean change in CASP-

19 score after two years was a drop of 0.2 (95% CI 0.0 to 0.4)). In adjusted models, the greatest declines in CASP-19 score were associated with incident bathing difficulties, which was associated with a decline in CASP-19 score of 3.2 points (95% CI 1.7 to 4.8), and incident problems in walking 100 meters, associated with a decline in CASP-19 of 3.5 (95% CI 1.9 to 5.1). Statistically significant declines in subjective well-being were also associated with using the toilet, getting out of bed, and doing housework. Models were robust to the exclusion of those with depressive symptoms (assessed using GHQ-12). *Conclusions:* These findings indicate that, in a middle-aged population, certain problems are more strongly associated with decline in well-being than others. To optimise well-being, primary and secondary prevention strategies should focus on the limitations we have identified.

723. THE EFFECTS OF NEIGHBOURHOOD DEPRIVATION ON COGNITIVE FUNCTION IN OLDER PEOPLE: ANALYSES FROM THE ENGLISH LONGITUDINAL STUDY OF AGEING

I.A. Lang¹, D.J. Llewellyn², K.M. Langa³, R.B. Wallace⁴, F.A. Huppert⁵, D. Melzer¹ (¹Peninsula Medical School, Exeter, UK, ²Institute of Public Health, University of Cambridge, Cambridge, UK, ³University of Michigan, Ann Arbor, MI, USA, ⁴College of Public Health, University of Iowa, Iowa City, IA, USA, ⁵Dept. of Psychiatry, University of Cambridge, Cambridge, UK; iain.lang@pms.ac.uk)

Background: Cognitive function in older people is associated with individual socioeconomic status and education. Living in a deprived area is known to affect health, but whether it affects cognitive function is unclear. *Objective:* To assess the relationship between cognitive function, socioeconomic status, and neighbourhood deprivation. *Design:* Nationally representative cross-section. *Setting/Participants:* 7126 community-dwelling individuals aged 52 or over in urban areas who participated in Wave 2 of the English Longitudinal Study of Ageing (ELSA). *Exposure and outcome variables:* We assessed the relationship between cognitive function score and index of multiple deprivation (IMD 2004) at Super Output Area level, adjusting for a wide range of possible health, lifestyle, and sociodemographic confounders. *Results:* Analyses were conducted separately by gender and age group (52 to 69 and 70 or over). All groups showed an effect of IMD independent of the effects of education and socioeconomic status. For example, in fully adjusted models, women aged 70 or over had a standardized cognitive function score (z-score) which was 0.20 (95% Confidence Interval 0.01 to 0.39) lower in the bottom 20% of wealth compared to the top, 0.44 (95% CI 0.20 to 0.69) lower in the least educated group compared to the most educated, and 0.31 (95% CI 0.15 to 0.48) lower if inhabiting an area in the bottom 20% of IMD compared to the top 20%. *Conclusions:* The area, in which older people live, independently of their own socioeconomic circumstances, is associated with their cognitive function. The mechanisms by which this effect operates are unclear, and longitudinal analysis is needed to explore the nature of this relationship more fully.

724. WHY EVEN THE «BYZANTINE PERIOD» CAN BE CONSIDERED AS A CRADLE OF THE CLINICAL GERONTOLOGY?

A. Lapin (Sozialmedizinisches Zentrum Sophienspital, Laboratory, Vienna, Austria; alexander.lapin@wienkav.at)

Discussing ethical and socio-economic aspects for the motivation in professions related to clinical gerontology,

one has to ask about historical and cultural background of this question. According to the common opinion, roots of today's medical ethics can be seen mainly in Hippocratic medicine of the Antiquity, while the beginning of the modern institutionalized medicine is usually assumed in the late Middle Age. However, the «gap» in such historical consciousness conceals the period of Byzantine Empire (324–1453), which is marked by active continuation and development of the former Hellenistic medicine. Form this time many famous physicians are reported, sometimes with extraordinary skill in such disciplines as surgery or ophthalmology. But the most important achievement of the Byzantine medicine can be seen in institutionalized health care. Motivated by Early-Christian ideal of philanthropy, which was widely accepted in that time, many of such institution, e.g. hospitals (*nosokomeia*), hospices for homeless (*xenodocheia*) and asylums for elderly (*gerokomeia*), are found in many cities throughout the Byzantine Empire. They appear not only as monastic institutions, but also as private foundations and are managed with remarkable organization and a high professional level. Many interesting knowledge has been documented on the field of clinical gerontology. It concerns senescence phenomena (*eschato-geria*), diagnosis and treatment of age related symptoms such as tremor, exsiccosis or malnutrition, practical aspects of old-patient's care, dietology and anti-ageing strategies... With the end of the Byzantine Empire in 1453, a lot of this experience has been brought to the Western Europe, partly by famous physicians of the period of Renaissance, which were in relation to the East-Mediterranean, partly, by monastic orders, which cared pilgrims to Holy Land. The illustration of the Byzantine clinical gerontology is probably not only an interesting historical fact, it can be seen as a part of the European cultural heritage, which is important for the ethical motivation in today's medicine and gerontology.

725. SIGNIFICANT FACTORS ASSOCIATED WITH THE INTENTION TO LIVE IN COMMUNITY OF THE ELDERLY IN SOUTH KOREA

K. Lee, M. Park, Y. Yoo (Pusan National University, Busan, South Korea; klee388@pusan.ac.kr)

This study aims to find significant factors associated with the intention of the elderly to live in their community. It uses the raw data from 'The Needs Assessment of Busan Metropolitan City in 2005', which has responses on the intention of the elderly from 1673 households. Research findings indicate that 80% of the respondents intend not to stay in residential institutions but to live in their home and that the elderly without adult children have lower extent (55.2%) to which they intend to live in their home compared to the elderly without their spouse (76.4%). The significant factors associated with the intention to remain in their community, when they were presumed to be healthy, were presence of adult children, recognition on community resources for the elderly, and perceived number of chronic diseases of their own. When they were presumably weak or ill, socio-economic factors such as home ownership and welfare recipience were found to be more influential factors than family-related variables. The elderly who intended to live in home rather than to go residential institutions had a low likelihood to use social services in community than expected. In the discussion of this paper, the characteristics

of Korean old people in their choice of residence and care services is compared to the one of other old people in East Asian countries such as Japan and Taiwan as well as some of European countries.

726. THE REALITY OF RETIREMENT — EXPECTATION AND EXPERIENCE: THE HSBC FUTURE OF RETIREMENT GLOBAL AGEING SURVEY 2006

G. Leeson (University of Oxford, Oxford Institute of Ageing; george.leeson@ageing-institute.oxford.ac.uk)

With the globalisation of ageing, preparation for retirement is a central issue of the policy debate across the world. Expectations of pre-retirees — not only related to the timing of withdrawal from the workplace but also related to concerns on leaving the workplace — and experience of post-retirees provide us with valuable insight into the reality of retirement. The HSBC Future of Retirement Global Ageing Survey 2006, run out of the University of Oxford at the Oxford Institute of Ageing, considers among other late-life work and retirement issues the expectations and experiences of pre- and post-retirees respectively in 21 countries across America, Europe, Asia and Africa/Middle EaSt. The survey has been conducted in October — December 2006 and includes over 21,000 individuals. This paper will present some of the findings from the survey relating to the expectations of pre-retirees (aged 40-59 years) and the experiences of post-retirees (aged 60-79 years) in selected countries, illustrating socio-economic and demographic differences within and between countries.

727. EFFECT OF PHYSICAL ACTIVITY COUNSELLING ON QUALITY OF LIFE IN OLDER PEOPLE

R. Leinonen¹, E. Heikkinen², M. Hirvensalo³, M. Rasinaho³, T. Rantanen² (¹The GeroCenter Foundation for Research and Development, Jyväskylä, Finland, ²The Finnish Centre for Interdisciplinary Gerontology, University of Jyväskylä, Finland, ³Department of Sport Sciences, University of Jyväskylä, raija.leinonen@gerocenter.fi)

Objective: To examine the effect of physical activity counselling on quality of life (QOL) in older community-dwelling people. *Methods:* The study is a part of Screening and Counselling for Physical Activity and Mobility in Older People (SCAMOB) — project, a 2-year randomized controlled trial (ISRCTN07330512) carried out in the City of Jyväskylä, Finland. 632 75 81-year-old cognitively intact, sedentary persons who were able to move independently outdoors at least minimally were randomised into the intervention (IG, n=318) and control (CG, n=314) groups. The intervention group received a face-to-face physical activity counselling session focused on increasing voluntary physical activity, which was followed by telephone contacts to support compliance and behaviour change every three months throughout the intervention. QOL was measured with six subscales of the LEIPAD questionnaire: physical functioning, self-care, depression and anxiety, cognitive functioning, social functioning, and life satisfaction with higher points indicating worse QOL (range 0–87). Information on physical activity was collected in face-to-face interview. Difference in QOL between the intervention and control groups was analyzed with using repeated measures of ANOVA. *Results:* At baseline, the age, gender, number of chronic conditions, and functional capacity did not differ between the intervention and control groups. The mean of the QOL points increased statistically

significantly ($p < 0.001$) from 18.8 (SD 8.3) to 20.2 (SD 9.3) in the intervention group, and from 19.6 (SD 8.8) to 21.1 (SD 9.5) in the control group over the two-year period. The group by time interaction was not statistically significant ($p = 0.718$). Subgroup analyses were done according to gender, mobility limitation and physical activity level at baseline. No differences in the changes of QOL scores were observed between IG and CG. *Conclusions:* In this study, physical activity counselling did not have an effect on QOL of older community-living people. In many prior intervention studies QOL has declined as a consequence of the intervention. Our results suggest that physical activity counselling does not harm older people.

728. GEROCENTER — INNOVATIVE RESEARCH AND DEVELOPMENT CENTER IN FINLAND

R. Leinonen¹, J. Puolakka², T. Rantanen³, E. Latvala⁴, M. Pekkonen⁵, M. Kallinen¹, E. Heikkinen³ (¹The GeroCenter Foundation for Research and Development, Jyväskylä, Finland, ²The Central Finland Health Care District, Jyväskylä, Finland, ³The Finnish Centre for Interdisciplinary Gerontology, University of Jyväskylä, Finland, ⁴School of Health and Social Studies, Jyväskylä University of Applied Sciences, Finland, ⁵Medical Rehabilitation Centre Peurunka, Laukaa, Finland; raija.leinonen@gerocenter.fi)

The average delay in transferring scientific findings into practice is approximately ten years. This delay does not promote the appropriate targeting of social and health resources. Typically, very few organizations assume responsibility for dissemination and policy studies with the aim of shortening this delay. The ageing societies need new solutions for promoting functional independence of older people in order to be able to answer to the challenge of increased need of care among those with declining health and disabilities. In Central Finland, GeroCenter foundation was launched in 2005 as a collaborative effort of higher education institutes, research centres in the field of ageing, local municipalities and Central Finland Health Care District together with the civil society. The underlying idea is that the internationally unique coalition of stakeholders will enhance production of scientific information and its application and dissemination into actions of public sectors and civil society thus promoting functional independence and wellbeing of older people. In GeroCenter, service providers, private businesses and researchers create a forum for a fruitful interaction in the broad field of ageing issues. In this contact surface, research results are translated into social innovations and potential service products. In addition to dissemination projects and translational studies, GeroCenter will provide consultation services and further education courses. The main expected outcomes, models of good practice, may later be propagated nationally and internationally.

729. WHY THE ELDERLY CONSUME HERBAL MEDICINES: AN INTERNATIONAL STUDY

C. Lila¹, Z. Azeredo¹, A. Kijjoa¹, N. Sungvora-wongphana² (¹Institute of Biomedical Science Abel Salazar, University of Porto, Porto, Portugal, ²Burapha University, Chonburi, Thailand; jiky.art@gmail.com)

Introduction. Herbal Medicines have a long tradition among the elderly in several countries. Often, the elderly use infusions / teas without knowing the side effects or

when they took other medicines prescribed by doctors. *Aims.* To know why the elderly prefer to consume infusion / tea with traditional medicines. To compare two different countries, Thailand and Portugal with respect to the use of infusions with traditional medicines. *Material and methodology.* We interviewed 50 elderly people (60 and older) in each country involved (Thailand and Portugal). On the elderly participants were chosen among those in a senior club (Thailand) and on a GP patient list (Portugal) in opportunistic random sampling. The answers will be analyzed by context analysis. *Results.* The final results will be presented at the meeting.

730. MANAGEMENT OF DEPRESSION AFTER STROKE

N. Lincoln (Institute of Work, Health and Organisations, University of Nottingham, Nottingham, UK; nadina.lincoln@nottingham.ac.uk)

Depression is thought to be a common consequence after stroke, but this may be in part due to methods of assessment used to identify depression. Although psychiatric diagnosis is the gold standard, most studies use questionnaire measures. These tend to be sensitive to low mood but not specific (Lincoln et al 2006). In addition somatic items increase the number of falsely identified people with low mood. In patients with communication problems many of the standard measures are not appropriate. Proxy measures, such as the Stroke Aphasic Depression Questionnaire and the Signs of Depression scale are promising but validation studies are needed. Simple self report rating scales can be used but there are problems with reliability of some standardised scales available. The most effective management strategy is prevention. This may be facilitated by stroke unit care (Juby et al 1996, Indredavik et al 1998), problem solving training (House et al 2000) and motivational interviewing (Watkins et al 2007). In the acute stages it is not clear what aspects of these interventions are essential and it may simply be providing opportunities for discussing problems. For those who become depressed, anti-depressants are often used but evidence for their effectiveness is limited (Hackett et al 2005). Psychological treatment strategies also have limited evidence to support their provision (Lincoln et al 2003). Although cognitive behaviour therapy is widely advocated, people with cognitive problems and communication difficulties tend to respond poorly (Thomas & Lincoln 2006), therefore alternative treatments need to be considered. At present there is a clear need for further evaluation of treatment effectiveness in order to identify optimum management strategies.

731. A TELEPHONE-BASED PSYCHOTHERAPEUTIC INTERVENTION FOR CHRONIC STROKE CAREGIVERS IN GERMANY — DESCRIPTION OF STUDY DESIGN

B. Lindemann¹, D. Beische¹, R. Heyl¹, H.H. Koenig², M. Hautzinger³, C. Becker¹, K. Pfeiffer¹ (¹Klinik for Geriatrie Rehabilitation, Robert-Bosch-Krankenhaus, Stuttgart, Germany, ²ZPR Gesundheitsoekonomie, Universitaet Leipzig, Germany, ³Psychologisches Institut, Universitaet Tuebingen, Germany; beate.lindemann@rbk.de)

Background. One of the many aspects in chronic stroke care is the high family caregiver burden that has an impact not only on the well-being of patient and caregiver but also on institutionalisation and costs. Psychotherapeutic interventions for caregivers seem to have the most consistent effects on caregiver well-being but can be costly to de-

liver and have not shown their effectiveness for outcomes like institutionalisation or costs. *Objective.* To describe the study design of an ongoing prospective randomised controlled trial, which aims to reduce caregiver burden in chronic stroke by a telephone-based psychotherapeutic intervention over 12 months. Main outcome measures are subjective caregiver burden and psychological well-being, institutionalisation rates of stroke survivors, total costs of formal and informal care as well as indirect costs. *Intervention.* The psychotherapeutic intervention is based on problem-solving training but also uses other cognitive-behavioural techniques like cognitive restructuring. For initial problem orientation a card sorting procedure is used. The intervention is delivered individually and comprises two home visits and regular telephone contacts with decreasing frequency over 12 months by a psychologist. Both groups receive a monthly letter of caregiver-/stroke-related topics. *Methods.* Subjects will be 174 family caregivers of stroke patients who have cared for a stroke survivor older than 60 years for a minimum of 6 months at home. Assessments take place at 0, 3 and 12 months at home. Caregiver burden is measured with the Sense of Competence Questionnaire because its underlying concept of caregiver stress makes it sensitive to change for this type of intervention. Caregiver depression is measured with the Center for Epidemiologic Studies Depression Scale, which can be used both for younger care giving children and older care giving partners. Caregiver assessment also includes measures of quantity and character of care, social support and social activity. The assessment of the chronic stroke survivor reflects the wide spectrum of physical, communicative, cognitive, emotional disturbances. It includes the Extended Barthel-Index and Scandinavian Stroke Scale as well as instruments for depression and behavioural problems. A new instrument assesses health care resource utilization and indirect costs. Institutionalization rates are followed-up for two additional years. *Conclusion.* We present a feasible protocol for evaluating the effectiveness of a telephone-based intervention for stroke caregivers.

732. DO PEOPLE WHO CALL AN AMBULANCE BUT THEN REFUSE TO GO TO HOSPITAL NEED REHABILITATION?

P.A. Logan¹, J.R.F. Gladman¹, H. McCloughry², V. Stoner-Hobbs³, C. Foster², J. Williams⁴, P. Spencer⁴, D. Fitzsimmons⁴, K. Robertson⁴ (¹University of Nottingham, ²Nottingham City Primary Care Trust, National Health Service, ³East Midlands Ambulance Service, ⁴Nottinghamshire County Teaching Primary Care Trust, Nottingham, UK; pip.logan@nottingham.ac.uk)

Background: In the UK up to 40% of older people who call an emergency ambulance are not taken to hospital. Systems are being developed to help direct these people towards alternative services and interventions that meet their needs. A protocol was developed to allow ambulance services to refer people they felt needed immediate care and rehabilitation, but who declined to go to hospital when offered, to Intermediate Care. Intermediate Care provides short-term intensive support from rehabilitation and nursing staff either in a residential setting or at home. *Objective:* To monitor the number, acceptance, adherence to the protocol and measure admission to hospital and death rates for patients accepted by local Intermediate Care. *Design:* Prospective survey of routine referral records, Intermediate Care services documentation and hospital episode statis-

tics. *Setting*: One UK Ambulance Service referring patients to four UK Intermediate Care services covering a population of 623,706. *Subjects*: People over 60 years of age who called an emergency ambulance between June 2004 and July 2006, and who were thought to need immediate care but who declined to go to hospital. *Interventions*: Referral protocol giving access to Intermediate Care. *Outcome measures*: Adherence with protocol. Death and admission to hospital at 6 months for those accepted for Intermediate Care. *Results*: The ambulance service referred 54 patients to Intermediate Care (2/month) mean age 83 years. Two of these were referred out of hours and were not seen. A further 7 were admitted to hospital by their GP before the patient could be assessed by the Intermediate Care services. Intermediate care assessed 45 (83%) patients, of whom 44 were assessed within the specified 4 hours. 21/45 patients were accepted for further intervention by the Intermediate Care service (12 in the residential service, 9 in the home service), 19/45 were deemed unable to benefit from the services, 4/45 patients refused the service and 1/45 lived outside the service area. Of the 21 patients accepted for Intermediate Care services 4 died and 12 were admitted to hospital over the next six months. *Conclusion*: Adherence to this pathway protocol is achievable but its scope is limited by low referral and acceptance rates. Referring patients to Intermediate Care after an emergency ambulance response provides an alternative to a hospital admission for those who refuse admission, but people of this group remain at high risk of hospital admission.

733. ECONOMIC EFFICIENCY AND QUALITY INDICATORS IN NON-PROFIT ORGANIZATIONS: AN EMPIRICAL STUDY IN PORTUGUESE NURSING HOMES

P. Lourenco (Human Researcher Non-Profit Organizations, Portugal; plourenco@qualisenior.com)

Aims. The objective of the investigation is related to improvement of the social services related to the older people by using quality systems to certify the services thereto. *Sample construction and Methodology*. *Methodology*. Definition of which area should be assessed; characterisation of the older people social support system; characterisation of the human resources (HR), with resource-based view (RBV) reference related to social welfare activity in support of the older people; assessment of the HR and financial means required to certify the quality system; characterisation of Quality Indicators (HCQIs), characterisation of economic efficiency. During 2005 a questionnaire was developed with interviews about the old age pensioners in Portugal that has 1.633 social welfare equipments. Such country during 1991 until 2001 exhibited one of the highest aging index in UE in the order of 32,6% whilst a significant increase in the population aged 65 and older, that is an increase of 25,2%. *Variable analysis*. The questionnaire included 40 variables qualitative and quantitative where 10 corresponded to the characterisation of the present activity; 10 representing the model of HR management; and 10 related to the Quality Indicators and 10 representing the accounting model. *Sample*. 988 questionnaires were sent and 253 responses that is, 25,6%. To validate the process three interviews were conducted, taking in consideration the juridical nature and the type of the social welfare organisation supporting older people. *Analysis*. Frequency analysis, factorial and Anova were defined upon the fol-

lowing: court region (*comarca*) and municipal area related to the social welfare; starting activity year; type of activity; geographic area related to the social welfare equipment; legal registration; number of in and out older people during 2001; characterisation of the social welfare responses for the older people; number of users related to the social welfare equipment; staff; organisation; financing form of official agencies; state of the art of the Portuguese quality system; evaluation of the ISO 9001:2000; interest on the certification process; quality evaluation of services; self-assessment of the organisations; level of satisfaction of local entities; difficulties; future developments of the social welfare equipment for older people vis-à-vis the quality certification. *Empirical Results*: *Results of the analysis of the Human Resources (RBV)*: Human Resources and the organisational problem, Human Resources function, management process based on skills, perspective on learning organisations, management of basic process based on skills. *Results of the analysis of the Quality management System (HCQIs)*: evaluation of the portuguese quality system and iso standard, relevance of the quality system, investments on the quality certification system, reason for certification, amount of investment towards certification, evaluation of quality indicators, schedule of the assessing services. *Results of the analysis of the Economic Efficiency (EEc)*: evaluation of the profits, evaluation of the prices, evaluation of the cost-effectiveness, evaluation of the human resources, evaluation of the gross operate profit, evaluation of the occupation, evaluation of the dependency.

734. TRUNCK EXTENSORS AND ELBOW FLEXORS FORCES AS MAIN PREDICTORS OF FALLS IN INDEPENDENT ELDERLY PEOPLE

C. Luengo Marquez, E. Martin Sebastia, L. Romero Rizos, P.M. Sanchez Jurado, J.D. Estrella Cazalla, P. Abizanda Soler, P. Nucez Atienzar (Hospital General Universitario de Albacete, Albacete, Spain; emartins@sescam.jccm.es)

Objective: To analyze predictive factors of falls in a cohort of independent elderly people in the community. *Methods*: Longitudinal prospective cohort study. Community sample of 218 elders (136 women), mean age 73,8, independent in ADL. Independent variables: Barthel, Lawton, MMSE, Yesavage, functional (Timed Up and Go in sec (TUG), gait speed in m/s (GS), POMA Tinetti, 6 minute walk test in meters (6MW)), weekly consumed kilocalories of moderate-severe physical activity measured with Calumed instrument (CAL) and force determinations in kg with JAMAR dynamometers of elbow flexors (EFF), trunk extensors (TEF), hip flexors (HFF), knee extensors (KEF), pinch (PIF) and hand grip (HGF). 25 Percentile (P25) were calculated for each force. Follow up 2 years. Outcome variable: falls at one and two years. Univariate and multivariate logistic regression analysis. *Results*: Basal and follow up (one and two years) functional tests and forces respectively were: TUG (9,8-10,1-10,2), POMA (27,3-27,1-27,2), 6MW (337-350-345), GS (1,19-1,15-1,18), EFF (17,4-15,7-15,3), TEF (51,6-53,3-50,3), HFF (13,3-13,8-13,5), KEF (17,7-14,5-13,6), PIF (8,4-7,2-7,3) and HGF (23,2-22-22,4). 39 subjects (18%) presented a fall in the first year (12 two or more falls) and 50 (23%) during the second year (15 two or more falls). 71 (32,6%) presented a fall during the whole follow up period. 6 subjects (2,8%) in first year and 11 (5%) in the

second had a fracture as a result of the fall. The women fell more frequently than men (27.3% versus 15.2%; $p < 0.05$). Age was not associated with an increased risk of falls. Predictive variables associated with falls during the follow up period were the number of drugs, height, Lawton, Yessavage, TUG, POMA and GS. All forces had a positive association with falls ($p < 0.01$). Participants with $EFF < P25$ (< 10 kg) had a 2.5 fold increased risk of falls (95%CI 1.2 to 5.2; $p < 0.05$) adjusted for age and sex. Also, those with $TEF < P25$ (< 32 kg) had a 2.2 fold increased risk of falling (95%CI 1.1 to 4.5; $p < 0.05$). *Conclusions:* ADL measurement and traditional functional test are not good predictors of falls in independent community elderly people. However, elbow flexors and trunk extensors forces are.

735. SOCIAL RELATIONSHIPS AND THEIR FUNCTIONING IN THREE FINNISH COHORTS AGED 65-69 YEARS

T.-M. Lyyra¹, A.-L. Lyyra², P. Tiikkainen³, E. Heikkinen¹ (¹University of Jyväskylä, the Finnish Center for Interdisciplinary Gerontology, Jyväskylä, Finland, ²University of Jyväskylä, Department of Psychology, Jyväskylä, Finland, ³Jyväskylä University of Applied Sciences, Jyväskylä, Finland; tilyyra@sport.jyu.fi)

In an ageing society it is important to know what differences there are in various dimensions of life between older adults belonging to different birth cohorts. The aim of the present study was to compare cohort differences in social relationships and their functioning among 65–69-year-old men and women examined in 1988, 1996 and 2004. The study was a part of the Evergreen-project carried out in the University of Jyväskylä in cooperation with the city of Jyväskylä in Central Finland. In 1988, 362 persons living at home, representing 81% of the eligible sample, were interviewed in their homes. The corresponding figures in 1996 and 2004 were 320 (80%) and 292 (73%). Social relationships and their functioning were measured as the number of children and grandchildren, the frequency of meeting them, and how satisfied the respondents were with this frequency. The questions also addressed the number of friends, confidants, life-long friends and persons who could be relied to care for respondents if needed, as well as perceptions of loneliness in different stages of life and the main reasons for it. The respondents were also asked how often they helped someone in everyday activities and what the help consisted of. The number of children and the frequency of meeting them decreased significantly when proceeding from the earlier to the later cohorts. The experienced frequency of meeting both children and grandchildren was assessed as most insufficient in the latest cohort. The number of friends and confidants as well as prevalence of persons to be relied for caring the respondents increased in the later cohorts. The experience of feeling loneliness had increased with advancing age. Widowhood and death of a nearest person, and divorce among women in the latest cohort, were the main reasons for loneliness. To conclude, cohort comparison findings show increased social relationships and mutual help and confidence in the later cohorts of 65–69-year-old people. The secular changes had, however, contributed to a diminishing number of children and wishes to see children and grandchildren more often. The results support the hypothesis of improving life conditions among older adults in early retirement age.

736. AGEING IN PSYCHOGERIATRIC SETTINGS: FUNCTIONAL DEPENDENCE ASSESSMENT AND COGNITIVE STATUS ACCORDING TO DIAGNOSIS AND DEMOGRAPHIC VARIABLES

P. Machado dos Santos, C. Paul (University of Oporto, Abel Salazar Biomedical Sciences Institute, Portugal; pedromsantos@hotmail.com)

The ageing process and chronic diseases such as dementia, mental disability or mental illness are often causes of physical and cognitive impairment, as well as early institutionalization. On the other side, a large number of inpatients are old females with different psychiatric diagnosis, but receiving undifferentiated mental health care. This study was developed with the goal of contributing to the independence and psychological well-being of older people with mental disease and improving the knowledge about the interaction between disease, age, institutionalization length, functional dependence and cognitive status. *Objectives:* (i) To describe the demographics of elderly female patients with different psychiatric diagnosis institutionalised in mental health departments. (ii) To study the cognitive status and functional dependence differences, according to diagnosis and demographic variables. *Methods:* Cross-sectional study with 510 female subjects ($X = 76$ years; $sd = 8$), with a dementia, schizophrenia, affective psychosis or mental retardation according to DSM-IV criteria, institutionalised in 6 psychiatric hospitals assessed with Mini-Mental State Examination (MMSE) and Mini Dependence Assessment (MDA). The Wilcoxon-Mann-Whitney non-parametric test was used to compare intergroup results ($p < 0.05$). *Results:* On average, the length of hospitalization was: 30.5 years for mental retardation, 25.6 for schizophrenia, 12.4 for affective psychosis and 6.2 for dementia. The education level of patients was very low, with 59.9% being illiterate. Illiteracy was higher amongst mentally retarded (89.3%) and schizophrenic (61.4%). Regarding functional dependence, 29.6% of patients were partially dependent, 22.8% were dependent and 47.6% were independent. According to MMSE results, 80.8% of patients are cognitively impaired. The dementia group was the most disabled with 94.1% prevalence of cognitive impairment and 50.8% prevalence of dependence and 30.3% of partial dependence. We found significant differences between patients with dementia and other diagnoses for age, functional dependency and cognitive status. Patients with schizophrenia and mental retardation also showed differences regarding age, education, hospitalisation length and cognitive status. Patients with schizophrenia and affective psychosis only showed significant differences regarding hospitalisation length. *Conclusion:* Despite the difficulty in making accurate mental health assessments in older people, leading to over and under diagnosis of psychiatric disorders, we were able to identify the impact of different major mental disorders on cognitive and general functioning of the individual. These results provide new evidence to support the need for differential intervention in elderly institutionalised patients with different diagnoses.

737. ANXIETY AND COGNITION IN 80-YEAR OLDS

B. Magnusdottir, H. Hansdottir, J.E. Jonsson (Landspítali-University Hospital, 101 Reykjavik, Iceland; jonejon@landspitali.is)

This study is a part of the Reykjavik 80+ study a longitudinal study on inhabitants in Reykjavik Iceland born

1913, 1918 and 1923. The number of participants in the 3 cohorts are 689. In this study we explore the prevalence of depression and anxiety in cohorts of 80 years old Icelandic residents of Reykjavik and the relation between cognition and anxiety. The relation of cognition to life satisfaction, neuroticism, cognition, depression and anxiety is explored. Neugarten Life satisfaction scale was used to measure Life satisfaction, Eysenk short personality test was used to measure introversion and neuroticism and CPRS interview to measure depression and anxiety. Digit span was used to measure memory. Women expressed more anxiety than men and there seems to be a positive relation between anxiety and cognition.

738. COGNITIVE STIMULATION: A PRELIMINARY STUDY

F. Maioli, C. Marchetti, E. Ferriani, V. Ranaldi, M. Coveri, V. Nativio, A. Gardellini, C. Danastasio, V. Pedone (Memory and Cognitive Disorders Unit, AUSL Bologna Ospedale Maggiore, Largo Nigrisoli, 2-40132 Bologna, Italy; clelia.danastasio@ausl.bologna.it)

Background: the limited efficacy of drug therapy and the theoretical evidence of brain plasticity of human central nervous system are the two main reasons explaining the growing interest in rehabilitation in mild-moderate stage of dementia. The aim of the multistrategic approaches (Reality Orientation, Reminiscence Therapy and Validation Therapy and Cognitive Methods) is to increase the patient's orientation to time, place and person and to promote maximal adaptive cognitive functioning. **Methods:** The Memory and Cognitive Disorders Unit of the Maggiore Hospital and ARAD (no-profit Association for Research and Assistance in Dementia) agreed on a cooperative action in order to support integrated interventions for persons affected by dementia and their relatives. Psycho-cognitive stimulation is part of this project and involves two small groups of community-dwelling patients with mild (group A) or moderate dementia (group B) and without severe behavioural disturbances. Patients, after comprehensive geriatric and neuropsychological assessment, receive three months treatment courses, twice a week, in an ambulatory setting. The caregiver has a key role in the program, not only as informant, but also as active performer, with the aim to reinforce cognitive stimulation during every-day life. Patients' recruitment and their allocation to small treatment groups (4–5 subjects) started in September 2005. Out of 120 referred subjects, 107 underwent a through-out assessment and completed treatment. In both groups (A and B) cognitive performance was valued with MMSE, MODA and ENB (Mondini et al 2003) at baseline (T0) and at three-months (T1), and at six months follow-up (T2). Satisfaction of both patients and caregivers was evaluated by a structured questionnaire. **Results:** Group A included 22 subjects, mean age 76,4±5,1 yr, education 8,7±4,4 yr. Group B included 14 subjects, mean age 77±6,77 yr, education 10,5±5,9 yr. Although the small number of subjects is not suitable for statistical inference, significant differences in MODA orientation T0 vs T1 ($p<0,003$) and T0 vs T2 ($p<0,009$), and in MODA total T0 vs T1 ($p<0,019$) and T0 vs T2 ($p<0,021$) were reported in group B. Patients with dementia reported improved self-perceived well-being, confirmed by caregivers, probably due to the increased number of interpersonal and social relations. **Conclusions:** Potential benefits of non-drug therapies in dementia patients are gaining increasing attention.

Although our study has not a case-control design, results from a project aimed to improve assistance and quality of life of both patients with dementia and their relatives may increase knowledge about the usefulness of a comprehensive approach in cognitive stimulation.

739. MULTIMEDIA IN DEMENTIA CARE

O. Maki (University of Tampere, The School of Public Health, Finland; outi.maki@nic.fi)

Two multimedia programs have been developed and evaluated in dementia care: a multimedia Picture Gramophone for entertainment and enjoyment of favourite music and a multimedia «Do-it-yourself» Picture Gramophone for making easily new Picture Gramophones based on the favourite music and own photos of the users with dementia. The implementations are based on a close co-operation with people with dementia and their carers. The aims of these products are to promote the wellbeing of people with dementia, to support memory, facilitate communication, and to provide pleasure, comfort and relaxation. In addition the aim is to help the carers to make meaningful activities for people with dementia. The programs have been evaluated as a part of dementia day-care and institutional care. People with dementia used the touch screen. The study is based on experiences gathered in two international EU-projects (Technology, Ethics and Dementia TED 1997–1999 and Enabling Technologies for People with Dementia ENABLE 2000–2003) and on the literature review on previous studies on activities for people with dementia and use of multimedia in dementia cares as a tool for activation and stimulation. The impact of the Picture Gramophone programs on the wellbeing of people with mild to severe dementia (N=38+22) and on the work of the nurses (N=11+21) has been assessed by participatory observations and interviews. Assessment scales have been used to investigate the degree of the illnesses. According to staff Picture Gramophone use has improved mood of most participants and stimulated reminiscence of a majority of the participants. It has supported feeling of competency, increased social interaction, and met individual needs. It helped some of the participants concentrate for longer than usual on one subject. People needed some help in the using, but the guiding was easy. The users sang along, hummed or whistled — still many of them did not remember afterwords that they had used any music devices. Using «Do-it-yourself» Picture Gramophone was not as easy. The lyrics editor was too timeconsuming and saving procedure not reliable. Creating multimedia programs for people with dementia offers three challenges: the needs and the skills of the users, the timetable of their carers and the rigid way of thinking of the programmers.

740. SOCIAL ATTITUDES OF SOCIETY TO PERSONS OF ELDERLY AND SENILE AGE AS A BASIS FOR FORMATION OF SOCIAL POLICY

S. Maksimova, O. Noyanzina, M. Maksimov, O. Cherepanova (Altay State University, Barnaul, Russia; renesans@ab.ru)

Actuality. Aging of population is a process that significantly influence on functioning and developing of society and the humankind in whole. It determines the condition and potential of society in many aspects. Segregation of generations and dramatic consequences of modernization

in relation to elderly people became common destiny for the most countries of the Western world. The same occurs in Russia. *Project and methods.* 600 workers of institutions of social service and 813 persons at elderly and senile age were investigated in the frameworks of research in 26 stationary institutions. *Methods:* sociological questioning and psycho-semantic modeling on categorical structures in subject's consciousness. *Purpose of study:* research on peculiarities of transformation of social notions of society towards elderly generation in the context of social-psychological dis-adaptation of persons at elderly and senile age in contemporary unstable social-economic conditions. *Results.* Demographic situation in Altai region is characterized by active process of aging of population. There are 549 637 persons under 60 in Altai (though the total number of population is 2653 thousands). In terms of research a categorical structure of everyday consciousness of representatives of different generation was studied, models of inter-personal perception, auto- and hetero-stereotypes of people and young, elderly and senile age, their relation to social types and roles were described, peculiarities of inter-personal interaction were revealed. *Conclusions:* Analysis of social attitudes of society to persons of elderly and senile age let to determine eight types of attitudes in relation to elderly generation. These types compose a system of evaluation of elderly and senile people. Social attitudes of society to persons of elderly and senile age have ambivalent character: relatively high part of negative attitudes related to notions about inability of elderly people to social functions and labor with limited circle of interests, social-psychological orientation to the past life of spiritual world of elderly people, their dissatisfaction by existing situation and social condition. Positive attitudes have a significant part too. They establish solidarity between generations, care and respect to elderly generation. Thus, mental deviations represented as hostile relation to aging became a social problem related to ethic aspects of life orientations. At the same time it is evident that contemporary notions about elderly generation are removing to the opportunity of formation of positive social attitudes.

741. HEALTH AND MEDICAL CARE PROBLEMS OF PEOPLE 60 yr AND OVER

I.M. Maksimova, V.B. Belov, N.P. Lushkina, N.A. Barabanova (National Research Institute of Public Health of RAMS; *tmaximova@mail.ru*)

Background: The aging of population is the modern problem in the world and it is important to evaluate main health problems people over 60 y and to estimate their opinion about real medical care they used. *Method:* The database of World Health Survey (WHS) contains the information about Russian population (sample 1599 persons represent 3 Federal Okrugs European part of Russia). The WHS program contained questions about self-assessment of health, main diseases and life difficulties connected to health, utilisation different forms of medical care for each respondent. *Results:* Among people 60 yr and over 43,6% women and 31,6% men self-reported the health as bad, but 5–6,8% correspondingly as good and very good, around 3% indicated good health at age 70 and over. The prevalence self-reported diseases practically the same as in other European countries: arthritis — indicated 40,7% women and 30,0% men, asthma — 4,5% and 3,7%, dia-

betes — 7,1 and 3,7% correspondingly. Angina pectoris was self-reported 50,2% women and 42,5% men of this age. Main part of population needed and received medical care during the year, 14,2% were hospitalized; 93,1% were satisfied health care providers skills, 79,6% — in hospital equipment, but only 59,6% — drug supplies. One of the problems in medical care: the persons felt that they were treated worse owing to their age, social status — 7,5%, and lack of money — 9,9% (men — 11,3%). *Conclusion:* Real health problems of population 60 and over are the base for the needs in medical care evaluation. The difficulties in medical care according to age and financial problems are important information to health care policy forming.

742. EFFECTIVENESS OF AN INTERVENTION PROGRAM FOR ADULTS WITH INTELLECTUAL DISABILITY

P. Marante, A. Maseda, B. Nespereira, R. Lopez, P. Seijo, J.C. Millan-Calenti (Gerontology Research Group and Adult Day Care Center La Milagrosa, University of A Coruna, Spain; *mmarante@udc.es*)

The population of adults with intellectual disability (ID) is growing and they are typically premature old adults (mean age in 40s). The prevalence of mental retardation, between 1% and 3% is more common in developed countries. The improvement of quality of life of this collective sets out new challenges to achieve a healthy aging using a preventive attention to the alterations associated to the disability. Our purpose in the present study was to improve the quality of life for adults with ID during their premature aging process. For this, an intervention program adapted to this collective was designed and tested to increase their well-being and life satisfaction. 26 people were recruited from occupational centres. Inclusion criteria were: (1) slight or moderate mental retardation (using DSM-IV and AAMR criteria); (2) older than 45, 35 if we are referring to subjects with Down syndrome; and, (3) not involved in another interventional study. The subjects were randomly assigned: 13 to the control group and 13 to the intervention one. The two groups were comparable for age and type of ID. After randomization, the intervention group received an intervention program, which consisted of ten sessions. Each session lasted 2 hours. The program was designed to improve three areas: psychostimulation (memory and orientation), social skills and functional ability related to daily life activities. These areas, which have the higher deficiency during the aging process in people with ID, were valuated pre and post intervention. The program was designed, tailored and carried out by an interdisciplinary group of professionals (psychologists, psychopedagogues and occupational therapists). After intervention course, an improvement in the three evaluated areas was observed in the experimental group compared to the control one. Within-group comparisons demonstrated that the intervention improved orientation (23.9 vs. 20.9) and memory (3.54 vs. 1.90) significantly. The motor skills were only slightly improved (52.8% vs. 51.8%). These results emphasize the importance of an interdisciplinary intervention, since the improvement is difficult in a sole area due to the communicative and social development difficulties of these people. Appropriate intervention programs to enhance quality of life of people with ID from 40 onwards have therefore become a key element in social services regarding their «healthy aging». People achieve a social, physical and mental well-being through both intervention programs and the enlargement of social support networks.

743. PSYCHOSOCIAL AND LIFE-STYLE CONDITIONS IN ZINC-AGE EUROPEAN SAMPLE

F. Marcellini¹, C. Giuli¹, R. Papa¹, G. Dedoussis², G. Herbein³, D. Monti⁴, L. Rink⁵, J. Jajte⁶, E. Mocchegiani⁷ (¹Italian National Institute on Ageing (INRCA), Research Dept., Social Gerontology Unit, Ancona, Italy, ²Harokopio University of Athens, Greece, ³Franche-Comte University, Besancon, France, ⁴University of Florence, Italy, ⁵RWTH, Institute of Immunology, Aachen, Germany, ⁶Medical University of Lodz, Poland, ⁷Italian National Institute on Ageing (INRCA), Research Dept., Immunology Center, Ancona, Italy; f.marcellini@inrca.it)

In spite of its importance, a paucity of international data assessing the diversity of characteristics in old age among European Countries exists in scientific literature. The main goal of this study was to examine and describe lifestyle characteristics and psychosocial conditions of healthy elderly subjects recruited from five European Countries. The presented results are based on the baseline data collected from the ZINCAGE European project (supported by the European Commission in the «Sixth Framework Programme», n°: Food-CT-2003-506850), carried out in France, Greece, Germany, Italy, Poland. N=1217 European healthy elderly subjects aged 60–84 years old were recruited. All subjects completed the «Lifestyle questionnaire» in order to obtain information about social and family conditions, educational level, economic status, dietary habits, physical and recreational activity, smoking habits. Measures of cognitive status, mood and perceived stress were obtained using a protocol of psychological instruments, including the Mini Mental State Examination (MMSE), the Geriatric Depression Scale (GDS-15 items) and the Perceived Stress Scale (PSS). Subjects were classified in 2 age groups: 65–74 years old (n. 718 subjects); 75–84 years old (n. 499 subjects). At baseline, considerable differences in lifestyle factors and psychological dimensions existed among elderly people. There was a prevalence of cognitive impairment in 13% of men and 23% of women and a possible depression in 15% of men and 26% of women, with some differences among centres. Our results showed that some social characteristics were associated with mood and depressive status. Moreover, women scored a mean value of perceived stress higher than men. In terms of body mass index (BMI), the prevalence of overweight and obesity was high (respectively 50% and 14% in men; 37% and 20% in women), in particular for the Greek sample. The smoking prevalence among elderly people was generally low. Overall levels of physical and recreational activity declined with increasing age. Participation rates in recreational activities were low and men were more active than women in walking, with some differences among Countries. Females tended to perform less recreational activities than males. The identification of these factors may be of value for studies and researches on aging, in particular for people having some socio-demographic characteristics. The obtained results for these regions of Europe represented an important outcome in order to evaluate the difference in healthy ageing in different Countries.

744. CARE NEEDS AND HOME-BASED-COMMUNITY SERVICES

I. Martin¹, C. Cunha², L. Oliveira² (¹Health Department, University of Aveiro, UniFai Research and Education Unit on Ageing of Porto, ²Health Department, University of Aveiro; martin@cs.ua.pt)

Background. 3,79 % of old aged people in Portugal use home-based-community services. The main objectives

of this research are (i) to assess the efficacy of home-care by controlling three types of variables (types of service and rural/urban contexts, relating to the organizations dimension) and (ii) to assess the impact that the home-based-community services have on the satisfaction level and depression of informal caregivers. **Methods.** Sampling had two stages. In the first stage, 8 organizations of home-based-community services were selected by random quota sampling, with 2 organizations by quota (1 — rural or urban / 2 — more than 25 users or less than 25 users). In the second stage, 6 users of home-based-community services were selected randomly at each one of the organizations. The final sample was composed of 48 users of home-based-community services. *ProtSADv.1* was developed to assess the services offered and the users' level of satisfaction of the home-based-community services. At the same time Easy-Care (Sousa e Figueiredo, 2000) was used to characterize the users, and CES-D (traz. Gonçalves & Falluga, 2004) was used to detect depression amongst informal caregivers. **Results.** It is noticeable the association that exists between the most basic home-based-community services (meal providers only), with rural contexts, and the eldest users. It is also evident that larger organizations (>25 users) provide services that last longer when the elders are functionally more dependent. The levels of satisfaction are very high, but it is mainly due to the fact that users with lower functional capacity have high levels of satisfaction. **Conclusions.** In Portugal, home-based-community services operate like a complementary service of informal caregiving (home-based-community services rarely replace informal care). Nevertheless, old aged users and their families have high levels of satisfaction. This research allowed us to develop an improved home-based-community service assessment protocol (*ProSADv.2.*)

745. HOMECARE USERS CLUSTERS OF ACTIVITIES OF DAILY LIVING PERFORMANCE

I. Martin¹, R. Neves², C. Cunha³, L. Oliveira³ (¹Health Dept., University of Aveiro, UniFai Research and Education Unit on Ageing of Porto, ²Unit of research on Anthropology and Social Sciences Piaget Institute, ³Health Dept., University of Aveiro; jmartin@cs.ua.pt)

Background. Patients' functional capacity and social network are two of the most important variables in planning home healthcare. The study aimed to detect clusters of home-care users with similar functional performance. **Methods.** Basic Activities of Daily Living (7 items) and Instrumental Activities of Daily Living (5 items) were measured in 166 home-care users at 7 different home-care organizations. Sociodemographic variables (sex, age, education and civil status) were also considered. Clusters analysis was used to create homogeneous groups of users. Parametric (t-student tests) and non-parametric tests (chi-squared) validated the differences between groups. **Results.** Two clusters emerged from non-hierarchical clusters analysis. In the first group, 37 individuals (30,3% of the users) appeared to have the lowest levels of functional capacity. As opposed to the first group, the second group had 85 individuals (69,7% of the users), with excellent functional capacity. Forty-four (44) users (26,5% of the users) were excluded from the groups. The groups didn't reveal any differences on sociodemographic or time variables since they were home care users. **Conclusions.** The fact that patients' functional capacity is heterogeneous

may imply that planning home-care services depends more on the offer than on the demand. Patients with a low level of incapacity represent an important subgroup (*Cluster 2*) and a lower cost to the organizations. Although this study does not consider random sampling, conclusions are consistent with other similar studies.

746. PERCEPTIONS OF POLICY MAKERS TOWARDS «ACTIVE AGEING»: CASE STUDY

S. Martinez-Rodriguez, F.J. Martinez-Contreras, I. Gomez-Marroquin, I. Amayra, J.J. Miguel, D. Candidate (*University of Deusto, Bilbao, Spain; smartin@fice.deusto.es*)

The need to promote ageing processes is something that has become widely accepted and dealt with not only in scientific forums but also in social and political ones. In the Second World Assembly on Ageing (Madrid, 2002) called by the United Nations it was also agreed that active ageing should be put into practice through the application of measures that would make it possible. The World Health Organisation suggests that countries in general, regions and International Organisations should promote active ageing policies and programmes that will improve the older citizens' health, autonomy and productivity. We cannot ignore that the population ageing is a global phenomenon that requires actions at an international, regional and local level. This study focuses on two key elements for the creation and application of policies that will favour active ageing: the concept understanding by politicians and public administration technicians, as well as their attitudes towards it. The use of a qualitative methodology through interviews in depth has allowed the gathering of information from politicians and different administration technicians (regional and municipal) of the province of Vizcaya (Spain), one of the European regions with the highest ageing rate. The aim of the study was to get to know better the perceptions and assessments of the politicians and technicians who are closer to the citizen (local level) about active ageing as well as draw conclusions about the effect of these conceptions on the development of policies and action plans that will promote it. The data collected back up the fact that, in spite of the existence of a favourable sensitivity towards «active ageing», it emerges from the majority of politicians and technicians interviewed that the governments still have a patronising attitude and an absence of reflection about active ageing and its implications. Other findings relate to the way of understanding and promoting the older person's participation and implication, the absence of co-ordination between the different government areas (culture, education, social services, and health), the use of municipal resources and the evaluation of the effects of the programmes that are initiated. The analysis of the obtained results shows some of the politicians and administration technicians' needs that must be overcome in order to be able to implement policies that will promote true active ageing processes.

747. DESTINATION OF THE PATIENTS LEAVING THE MEDIUM TERM STAY HOSPITAL UNIT AFTER REHABILITATION PROGRAM DIAGNOSED FOR ACUTE CEREBRO VASCULAR ACCIDENT

J.A. Martos, P. Alcalde, E. Ruiz (*Hospital General of Granollers; 25672jmg@comb.cat*)

Objectives: study of the relationship of factors which are implicated in the final location of patients after leav-

ing a Medium Stay Term Unit (MSTU), patients who were admitted to our MSTU for rehabilitation after diagnosis of Cerebro Vascular Accident (CVA). *Materials and method:* descriptive study of factors which could influence in the final location after leaving our MSTU, taking into account patients treated between 2003-2006 diagnosed of CVA (CIM-9= 430 to 438). Registry of Minimum Joint Sociosanitary Data based in the RAI-NH 2.0, using SPSS 10.0. *Results:* Out of 312 patients treated at the MSTU for rehabilitation: 48.2% arrived from the Internal Medicine Service, 49.6 % from our Geriatrics Service and 2.2% from other hospitals. 9.1 % of these patients were sent to nursing homes and 2.8% to other social services. After analysing the statistics we only encountered statistically significant differences (chi-square) in the following aspects which could influence where they were finally sent to. *Basic Daily Activities:* walking, requiring a lot of aid or unable to walk, use of bathroom; a lot of aid or total dependency. Special feeding more affected in patients who went to nursing home. *Cognitive Patterns:* affecting recent memory; affecting remote memory; time orientation affected; spatial orientation affected; capability of taking decisions; more affected in patients who were institutionalized. *Conclusions:* differences observed in patients who go to nursing homes were those patients that were more dependent for: walking, using the bathroom, affected recent and remote memory capabilities, alterations in capability of decision making and realizing where they were in time and space.

748. DOES THE RETIREMENT REDUCE THE PERCEIVED QUALITY OF LIFE?

A. Maseda, T. Lorenzo, L. Fernandez, A. Bujan, I. Gonzalez-Abraldes, J.C. Millan-Calenti (*Gerontology Research Group and Adult Day Care Center La Milagrosa, University of A Coruna, Spain; amaseda@udc.es*)

Retirement is a psychosocial factor which implies a feeling of premature aging. Since the moment a person is out of the labour market, he/she assumes the social role of a passive subject. In the case of old people with physical or cognitive dependence, the perceived quality of life is affected by the influence that this passive role has on their health and psychosocial well-being which are basic elements of the quality of present life. This study describes the data obtained when relating the feelings caused by the retirement with the health perception. A pilot study was carried out with 140 people over 65 with some kind of dependence. It was developed in both a rural and urban councils in the NW of Spain to study if the retirement perception — depending on the developed works, agricultural or in the service sector, has an influence on the health perception. A relation was established among some retirement-referred items taken from validated questionnaires of European studies and the environment, gender and work developed by the people in the sample. From the analysis of the data of the most relevant item, we observed that 55.6% of rural dependent men were quite in disagreement with the following state «I was willing to retire» against 26.8% from the urban environment who totally agreed with it. 11.1% of those who worked in the primary sector did not answer the question. The continuity in the agricultural works explained the high percentage of the old who did not feel as «real» retired against 4.9% of urban old who have not answered the question. The gender differ-

ences showed that urban women (32.2%) did not want to retire either. For 75% of this 32.2% the reason for not to retire, was the increase in the intra-domestic work due to her or her husband retirement. 59.1% of rural women also showed their disagreement with the retirement; 84% of the interviewed reported that their life had not changed at all except for the economic loss. When relating the variables «How would you value your own health?» and «I was willing to retire» a significant negative linear correlation was established confirming the hypothesis that the more they desired to retire, the worse they valued their health. The results obtained with this study show the necessity to increase the gerontological education regarding retirement via preparatory programs.

749. HOW SHOULD WE MOBILIZE AN OLD PERSON?

A. Maseda, N. Varela, D. Alvarino, A. Lopez, B. Nespereira, J.C. Millan-Calenti (*Gerontology Research Group and Adult Day Care Center La Milagrosa, University of A Coruna, Spain; amaseda@udc.es*)

Health Education is one of the most effective elements when working on the risk factors of the different illnesses, especially if we refer to old people and in particular to those presenting a disabling pathology. If we know the reasons for the illness or the reasons that provoke the accidents, we would be able to achieve a better health in the elder people. The video we present was made by the Gerontology Research Group from the University of A Coruña in collaboration with the Adult Day Care Centre La Milagrosa within the frame of the European Socrates Programme (Grundtvig 1 — European Cooperation Project) in which we participate as a member of the consortium developing the ADD-LIFE! Project (ADDing quality to LIFE through inter-generational learning via universities). We are elaborating a number of didactical videos which using a very simple language will try to show the patients and the caregivers the different techniques to be used in the attention to dependent people. We have produced this first video because we consider that immobilization and accidents are two frequent reasons for frailty in the elderly and that is also the reason why we have decided to put it available for free in web pages such as those of the University of A Coruña and other entities of well-known prestige in the elderly field to achieve a widespread dissemination. The video lasts about 6 minutes and it consists of an introduction and three sections referred to the correct position in sedestation, the way to change from sedestation to the standing position and the other way round, from the standing position to sedestation, both independently and with technical help. It is presented with sound and subtitles which can be translated into different languages. It is available in English and Spanish.

750. COMPUTERS, INCOMES AND OLDER PEOPLE

C. McCreadie (*Kings College London, UK; claudine.mccreadie@kcl.ac.uk*)

A common generalisation about older people is that they are averse to new technology. Using data from the British General Household Survey, a large data survey undertaken annually by the government's Office for National Statistics, we examined the ownership of a wide range of consumer durables, including personal computers and internet access, in relation to age and income. The data sug-

gests that income may well be as important as chronological age in determining whether older people own a personal computer. While income may indeed be only one factor in determining ownership, and ownership does not equate with use, we raise the question of how far income is the factor that may exclude older people from participation in the electronic society, rather than motivation and interest.

751. OLDER PEOPLE AND THE EXPLORATION OF INNOVATIVE TECHNOLOGY

C. McCreadie (*Kings College London, UK; claudine.mccreadie@kcl.ac.uk*)

A collaborative research project between King's College London and City University has used an iterative research methodology to examine, with a range of people aged 70–86, their views on the utility and design of an innovative technology device. The device is a Personal Digital Assistant with a receiver for Satellite Navigation. The user component of the research began with a series of interviews with older people about their pedestrian activities. This led to the initial design of the device which was then trialled three times with small samples of older people, with design modifications between each trial. The qualitative research that accompanied the trials suggests three main findings. First, older people are as diverse as the general population in their response to new technology. Secondly; as users of innovative technology, they have many good and practical ideas about its design. Thirdly, the new device has potential to promote leisure pursuits and physical exercise, a finding that was not anticipated at the beginning of the research.

752. OLDER PEOPLES RESPONSE TO ELDER ABUSE, FINDINGS FROM THE UK PREVALENCE STUDY

C. McCreadie (*Kings College London, UK; claudine.mccreadie@kcl.ac.uk*)

The research, collaboration between King's College London and the National Centre for Social Research, was designed to make a reliable estimate of the prevalence of elder abuse and mistreatment in the United Kingdom. The two year research project, which began in August 2005, included follow-up in-depth interviews with 41 respondents. The paper will present the findings from this qualitative component of the research. This addressed the following three questions about mistreatment and abuse. What is the impact on the individual concerned? What are the barriers to reporting and identification? How do people deal with these situations?

753. APPLIED METAMEMORY: WHAT PREDICTS OLDER ADULTS ADHERENCE TO A MEDICATION TASK?

L. McDonald-Miszczak (*Western Washington University, Bellingham, WA, USA; Leslie.McDonald-Miszczak@wwu.edu*)

The purpose of the study was to examine variables that predict older adults' adherence to an everyday memory task over a 2-week period. Specifically, 54 older ($M=74.5$ yr., $SD=7.42$) adults were asked to remove placebo pills from a medication bottle outfitted with a microelectronic monitor that recorded the number of times the bottle-cap was opened each day. The instructions were standardized so that all participants were asked to adhere to the same schedule and adherence accuracy was assessed. At the outset, cognitive ability was measured using laboratory pro-

spective, episodic, and meta-memory tasks. Of particular interest was the Memory subscale of the Beliefs Related to Medication Adherence (BERMA) Survey that assessed perceptions of ability to remember medications in everyday life. The Memory subscale of the BERMA was highly reliable ($\text{Alpha}=.91$). Bivariate correlations indicated that only one measure of prospective memory was correlated with adherence, while most cognitive measures were significantly correlated with scores on the BERMA Memory subscale. Regression analyses indicated that although there was no direct relationship between cognitive abilities and adherence, the BERMA Memory subscale mediated the relationship between cognitive abilities and performance on the pseudo-medication task. The final model was statistically significant ($F=2.41, p<.05$) and explained 27% of the variance in adherence. These results stress the importance of memory perceptions when performing a complex memory task in everyday life.

754. VULNERABLE OLDER PEOPLE IN THE COMMUNITY: RELATIONSHIP BETWEEN THE VULNERABLE ELDERLY SCALE (VES) AND HEALTH SERVICE USE

H. McGee¹, A. O'Hanlon¹, M. Barker¹, A. Hickey¹, A. Montgomery¹, R. Conroy¹, D. O'Neill² (¹Royal College of Surgeons in Ireland, ²Adelaide and Meath Hospital; aohanlon@rcsi.ie)

Objectives: The Vulnerable Elders Scale (VES), a recently developed screening tool for at-risk older people in the community, has been validated in the US. This study evaluated its profile among older Irish people. It was hypothesised that those categorised as vulnerable by the VES, would have higher health service use. **Design:** Nationally representative community-based survey. **Setting:** Ireland. **Participants:** Randomly selected older people (aged 65+) ($n=2,033$; 68% response). **Measures:** Interviews included the 13-item VES and questions on health service use. **Results:** The proportion scoring as vulnerable was identical to the US sample (32.1 vs 32.3%). Those categorized as vulnerable saw the general practitioner more frequently (mean visits 6.7 vs 4.0, $p<.001$), had more public health nurse visits (29% vs. 5%, $p<.001$), and were more likely to have had flu injections (81% vs. 72%, $p<.001$) in the last year. They did not differ on assessment of blood pressure (97% vs. 96%) or cholesterol (82% vs. 85%), or receipt of smoking advice (66% vs 52%). Vulnerable participants were also more likely to have used Emergency Department (17% vs. 8%, $p<.05$), inpatient (21% vs. 12%, $p<.05$) and outpatient (28% vs. 21%, $p<.05$) hospital services. **Conclusion:** This study provides further evidence, from a different healthcare system, of the potential of the VES to differentiate more vulnerable older people. Prospective studies are needed to assess use of the VES as a clinical decision aid for community professionals such as general practitioners and public health nurses.

755. FACTORS ASSOCIATED WITH OPTIMISTIC BIAS IN OLDER PEOPLE AFTER A FALL

K.J. McKee¹, P. Harris² (¹University of Sheffield, Sheffield Institute for Studies on Ageing, Sheffield, UK, ²University of Sheffield, Department of Psychology, Sheffield, UK; k.j.mckee@sheffield.ac.uk)

Background: Optimistic bias is a tendency to perceive one's own health to be less at risk than is the health of others of the same age and sex, and this bias may influ-

ence whether individuals engage in health protective behaviour. Optimistic bias for falling has never been studied in a population of frail older people, and there has been no research to determine what factors are associated with such a bias. **Methods:** One hundred and ninety six older people hospitalised as a consequence of falling were interviewed in hospital and assessed on a number of biomedical and psychological variables. Optimistic bias and comparative optimism were determined by subtracting the participant's rating of the risk of falling of someone their own age and sex from their own perceived risk of falling. Following discharge and at approximately 3 and 6 months after their interview, participants received a postal questionnaire assessing psychological and physical health, to complete and return. **Results:** An optimistic bias toward their risk of a further fall was found in 63.3% of the sample. Less comparative optimism was associated with a history of falls ($r_s=-.27, p<.001$), greater fear of falling ($r_s=-.28, p<.001$), and greater concern over damage to one's identity as a result of a fall ($r=-.16, p<.05$). Less comparative optimism was also found in participants with a hopelessness explanatory style relative to those without ($r_{pb}=-.21, p<.01$), and in those participants who attributed the cause of the fall to an external or characterological cause relative to those attributing the fall to a behavioural cause (Comparative optimism Ms: characterological=0.79 (SD=1.83); external=1.26 (SD=1.94); behavioural=1.83 (SD=2.54); $F=3.09, p<.05$). Lower comparative optimism immediately post-fall was associated with greater perceived risk of falls at 3 and 6 months post-fall ($r=-.36, p<.01$; $r=-.31, p<.01$ respectively), greater anxiety at 3 months post-fall ($r=-.24, p<.05$), and greater limitation to body care activities at 3 and 6 months post-fall ($r=-.24, p<.05$; $r=-.23, p<.05$ respectively). **Conclusions:** After a fall, the majority of older people demonstrated an optimistic bias for perceived risk of further falls. People with low comparative optimism scores tend to see their fall as due to factors not under their control, have greater fear of falling, experience more anxiety at 3 months post-fall and demonstrate impaired body care activities at 3 and 6 months post-fall. We explore the implications of the findings for recovery from falls and the prevention of future falls.

756. COMMUNITIES OF INTEREST AND COMMUNITIES OF PLACE: REFLECTIONS FROM A STUDY OF A UK RETIREMENT VILLAGE

R.I. Means, S. Evans (University of the West of England, Bristol, UK; Robin.Means@uwe.ac.uk)

This paper is based upon a study of a Retirement Village in the South West of England. This village is one of the first in the UK to combine social rented sheltered housing, apartments owned through a variety of lease purchase arrangements and a care home with short term and dementia care provision. Provision to meet a spectrum of health and social care needs is common in such villages but it is rare for one village to attempt to provide for those with a history of renting in the same development as those with a history of owning their own properties. The overall aim of the study was to explore the extent to which residents with this wide range of housing and care histories and from different socio-economic backgrounds can be integrated into a single retirement community. Research methods included in depth interviews with residents and staff, the use

of a housing and care options self assessment questionnaire and the use of routinely collected data. The overall finding was of resident satisfaction with the village and high levels of use of facilities (transport, restaurants, leisure facilities etc). However, residents were divided over whether or not the village worked as a community with some concerns about the lack of interaction between the different housing and care elements of the site with clear divisions emerging on occasions between the renters and the owners. There is a long tradition of research studies in the UK and elsewhere of older people in terms of both their kinship and community networks. Linked to this is often an assumption that both family and neighbourhood (or place) become more important as you age. A number of authors and most notably Gilleard and Higgs (2000) in *Cultures of Ageing* have begun to argue that older people are now much more focussed on consumption and lifestyle choices than in the past. One aspect of this is their growing engagement with communities of interest (formal and informal groups built around enthusiasms). The second half of the paper will use these concepts to explore the research findings about how residents did and did not engage with their retirement village. It will be argued that the future success of such villages may well depend upon grasping the subtleties of communities of interest and place rather than aiming for an idealised vision of rural village life.

757. A HIGH STANDARD POLICY ON OLDER PEOPLE BASED ON INVESTIGATIONS OF THEIR NEEDS

E. Messelis (*Higher Institute for Family Sciences, Brussels, Belgium; els.messelis@hig.be*)

Developing a Policy for older people — that is carried by its population — implies that the policy must get visibility on their needs. The method pre-eminently for this to do is setting up ‘need researches’. For that purpose a sample of 4325 residents aged sixty and over of 9 cities in West-Flanders were interviewed from January 2004 until March 2005 (under supervision of Prof. Dr. D. Verté). The information was generated by means of standardised questionnaires. The research question: what is the impact of the membership of associations, gender and age on a number of variables. The analysis on the dates was designed with the processing programme SPSS for Windows 13.0 and Statistica. The impact was examined by means of Multifactor ANOVA. 60+ board members are significantly more involved in their neighbourhood, they have a larger social network, a significant more positive old age picture, a higher education, a higher income, they are less physically vulnerable, less solitary than 60-plussers that are just member or no member. 60+ women show a tendency to have a better social network than 60+ men, this in spite of the fact that they don’t have a larger social network and they are not significantly more satisfied than 60+ men concerning their social networks. We also stress that 60+ women have a significantly lower level of education, ditto income, they are more physically vulnerable and they have a higher fear of crime than 60+ men. If policy makers want to create a policy for older people who is accessible for everybody, they must give more attention on the position of 60+ women as well as on the stimulation of board participation in older women and men.

758. MOVING TO LIVE A DREAMLIFE — AN INTERPRETATION OF RETIREMENT LIFE IN DANISH SUMMER HOMES

L.R. Milkaer (*Danish Institute of Gerontology; lone_milkaer@hotmail.com*)

More and more retirees move after their working life has ended. Some move abroad, but a large percentage move within the Danish borders. They move to get a better life and not because they have to. This is a fairly new tendency. Traditionally the urge to move has been decreasing with age, but a larger and larger group of people move in the ‘wrong end of life’. This presentation focuses on elderly peoples reasons for moving permanently to a summer home and their expectations of retirement life there. My focus is on the elderly people who move to live permanently in their summer homes. A summerhome is a cottage in the countryside, often close to the sea. It is not unusual in Denmark to own a summerhome as a second home. Some of the movers have owned a second home for most of their adult lives and dreamt of living there permanently for years. Some of them buy a piece of land at a perfect spot and build the house of their dreams. But what kind of lives is it that the retirees is dreaming about and why must it be lived in a summer home which is connected with leisure, spare time, no commitments, sunshine and holiday? Is that the picture of life in retirement the retirees have? The summerhomes are often placed ‘close to nature’. The idea of living ‘closer to nature’ is significant when people explain why they decided to move permanently to a summerhome. But are they ‘closer to nature’ or is ‘nature’ a metaphor for something else? In general there are some cultural expectations to how life in old age should be. You should be active and take care of your health, both mentally and physically. You should be involved in the life of your children and grandchildren, but not too involved. Living ‘close to nature’ is a way of meeting those cultural expectations.

759. «WALKING» PROGRAM IN AN ADULT DAY CARE CENTER

J.C. Millan-Calenti, R. Lopez, N. Varela, I. Gonzalez-Abraldes, A. Lopez, B. Nespereira (*Gerontology Research Group, University of A Coruna, Spain; jcmillan@udc.es*)

The «walking program» tries to improve the capacity to walk and move voluntarily, in an active way and controlling the movements in a coordinated and harmonic way. This capacity is based on the interaction between the individual’s own physical, cognitive and sensory-perceptive factors, and the degree of health or self-confidence. The process of aging, added sometimes to the presence of some pathology, can involve a difficulty to walk and move by him/her with normality. The alteration of the mobility in the old person represents an important limitation in his/her functional independence and, usually, it is associated to complications derived from the prolonged sedentation which many times end up in a syndrome of relative immobility. The main objective of this study was the implantation of a «walking» program in an Adult Day Care Center, in order to maintain during the maximum possible time the capacity to walk in those people who presented some type of affectation, as well as to improve the parameters of the gait, foment independence, improve the interaction with environment and prevent the immobility-derived consequences. This «walking program» was introduced in the Adult Day Care Center La Milagrosa (A Coruna, NW Spain). 10 subjects took part in this program (90% women,

mean age 83 years old), with pathology-associated alterations of the gait. Each individual's gait and balance were evaluated, setting the degree of necessary help in each case. Two daily walks were taken by each person (morning and afternoon), registering at every moment the tolerated time and the degree of difficulty that the subject declared. The following results could be stated after 3 months, and after a revision and reevaluation of the subjects: increase in the tolerated time of walking, less difficulty at the beginning and during the gait and, as a consequence, greater independence, and also an increase in the motivation of the subjects facing the walking. The stimulation of the gait in the elder constitutes an essential element in the improvement of the functionality and the promotion of his/her independence, helping to increase their self-esteem, well-being and, finally, their quality of life.

760. SOCIAL NETWORKS AS INDICATORS OF LIFE QUALITY ON DEPENDENT ELDERS

J.C. Millan-Calenti, T. Lorenzo, L. Fernandez,
B. Nespereira, I. Gonzalez-Abraldes, A. Maseda
(*Gerontology Research Group, University of A Coruna,
Spain; jcmillan@udc.es*)

Many studies have described that the amount and quality of the networks are an influence in health and psychological aspects in the old age. This research describes the relation between the social support offered to people over 65 and their socio-sanitary characteristics. A pilot study was developed in one rural and one urban councils of Galicia (NW, Spain). A revision of the needed secondary data was made in order to establish the proportionality of the sample in relation to the dependent variables (environment, gender and type of residence). The inclusion criteria were to be over 65 and dependent -physical and/or cognitive disabilities. Data was obtained using an ad hoc questionnaire developed from already validated ones and brief histories of life of the interviewed people were made to complete the research with qualitative data. From the analysis of data it is observed that the rural old dependent people have greater primary social supports which improve their appreciation of their quality of life, even though they were more unsatisfied with their health (38% feel very unsatisfied with their health opposite to 18% of the urban population). The subjective degree of conformity with their social environment, and with the received support, presents, on average, a lower valuation in the urban area than in the rural one. 39% of the rural sample can speak with someone about their problems, opposite to 22% of urban environment. 48% relies on people who worry about them (38% in the urban area). In the rural environment, the overvaluation of the supports provided by the social network mitigates the dissatisfaction with the health, understood as an added element of the quality of life. The evidences show that the rural social network is still of primary type and more effective for the dependent old person than the available (mostly formal support) in the urban environment. The model of formal network is the main one in most urban areas with similar Galician socioeconomic and geographic characteristics, where the social isolation and its consequences are greater than in the rural areas. Therefore, this model is insufficient to cover the socio-sanitary needs. The social policies must be planned based on these findings to be the principal source of life quality on dependent elders.

761. DEVELOPING AN AGE-FRIENDLY CITY IN TUZYMAZY, RUSSIA

G.A. Minnigaleeva (*University of Minnesota, Hubert H
Humphrey Institute of Public Affairs; m.gulnara@gmail.com*)

The collapse of the Soviet Union and changes that followed created acute feelings of unfairness among older persons, and significantly lowered their social and economical status. Moreover, many of them still expect that government should provide all the care and benefits for older persons as it was during the Soviet times. This causes permanent frustration and disappointment for older people and fuels perceptions of them as an object of aid among other generations. In a small provincial city like Tuymazy, the population over 60 constitutes 14% of the population. The WHO Global Age-Friendly Cities Project, with its active ageing and bottom-up approaches, may trigger changes in Tuymazy and serve as an example. The research identified that the city combines good age-friendly intentions and harsh disadvantages such as: a) Healthcare is free, but there are multiple infringements and personnel are often rude to older persons; b) It is quite green with parks, but not enough rest areas for older persons to enjoy them; c) There is well developed and frequent public transportation, but it is too expensive for a retired person living on a government pension, and has no disability accommodation; d) Visiting and social services exist, but most people do not know about them; e) There is an effort from governmental officials and commercial enterprises, but recognition only happens twice a year for the Victory Day and for the older persons day; f) There are several clubs for older people and a network of Veterans' councils, but membership in the clubs is extremely limited, and the councils are largely dysfunctional. The *second stage* of the project would actively engage older persons based on their suggestions during the research: 1) Creating a more engaging and more open organization for older persons was a common suggestion in focus groups. The organization of older persons and for older persons could also become an *agency* that would convey older persons' interests and become a free public space for discussions; 2) The network of the Veterans' councils has the name, infrastructure and connections with city officials to be credible initial resource; 3) Older persons are experts in the soviet and ethnic cultures and are evidently missing now quite a few valuable features such as a sense of community, intergenerational connections, celebrations, etc. Culture discussion circles could help transmit older persons' experience and expertise.

762. DYNAMIC COMFORT ADAPTATION OF ELDERLY HOUSING. THE INDEPENDENT LIVING OF SENIORS AND HOME-AUTOMATION

M. Mohammadi (*Eindhoven University of Technology;
m.mohammadi@tue.nl*)

Due to the rapid aging of the Dutch population, an increasing demand for adaptable houses is to be expected. The current policy is aimed at a substitution of intramural housing for extramural housing. Independent living is stimulated by the government and is in fact also the desire of the modern senior. Key factors are the quality of the house and the availability of necessary healthcare. The Construction sector can help to improve the senior's level of being independent by developing new types of dwellings. The supply-led market will shift to a demand-orient-

tated market. Home-automation can enhance the seniors' level of independence, security and comfort. Applications of home-automation need to be a synthesis of technology, healthcare, the house, its surroundings and the user himself. It is not about simply applying all the available technical possibilities. Close examination of the senior's needs must be the basic of applying home-automation in a proper way. One must be careful of the possible side-effects. Too much automation of actions, formerly performed by the senior, is undesirable. A balance must be found between the activities performed by the people themselves and by the technology. The application of home-automation can be stigmatising for the elderly. They do not want to be labelled as «in need of healthcare». The ways of living and communication by elderly, as well as their feelings towards technology in their own house, will be critical in their willingness to accept it. It is recommended to aim the marketing of home-automation at the relatively more young seniors; the ones that are more open towards ICT. The application «comfort» seems to be specifically suited. The improvement of comfort can be a good way for elderly to get acquainted with home-automation. Using the construction of the house it is important to make architectural arrangements which will enable the immediate or future applications. An important contribution can be made to «the quality of life» of the independent senior by adding home-automation.

763. INFORMATION AND COMPUTER TECHNOLOGY (ICT) EMPOWERMENT FOR 50+, A CASE STUDY OF A LEARNING PARTNERSHIP

S.J. Monstad¹, R. Esteller², U. Krope³, P. Escuder²

¹Landestorget Seniorcenter/Norwegian Health Association, Bergen, Norway, ²Senior Citizens' University, Universitat Jaume I, Castellón, Spain, ³Senioren Lernene Online, Kiel, Germany; sturle.monstad@gmail.com

Introduction. Living in a digital era affects the population as a whole. Older adults meet special challenges in this regard and represent a population segment with great heterogeneity. Empowerment is a process of increasing control over the factors that affect people's quality of life and access to ICT may be one way of improving life for older adults. This presentation will report on the cooperation of five organisations from four European countries collaborating in EU-funded Grundtvig Learning Partnership and identify key lessons and advice from the process. *Methods.* A case study perspective has been applied in the project. The results are derived from group meetings, documents and presentation of the various organisations. Through five partnership meetings the process of sharing knowledge about own practice has been central. Both professionals and older adults working with ICT education and older adult learners have participated and contributed in the process. *Results.* Older adults are a very heterogenic group with varying background, education, financial resources, interests, and physical and mental functioning. Educational opportunities need to be tailored to older adults with consideration to such diversity. Those providing education should have sufficient gerontological education and experience in order to offer a suitable learning experience. Many older adults lack experience in using digital media and require fundamental understanding of such tools. Of crucial importance is the facilitation of functional technical solutions in the training situation, and using programmes

and Internet-sites that are suitable for those with eg altered eyesight. In addition to lectures, the sessions should include practical hands on computer work, with possibilities for help. Motivation can be enhanced by clearly showing the benefits of learning new skills. Popular topics include basic computer understanding, health-information, communication with friends and family, genealogy, news/current events, financial topics. Some organisations, especially the German ones, focused on the importance of offering female only ICT-courses. Using the knowledge and experience of older adults themselves as teacher, course designers and volunteering in hands on learning can be a feasible approach. *Discussion and conclusion.* ICT-proficiency may empower to access relevant information and digital possibilities. Furthermore, it may increase capacity for participating in our increasingly digital society. Both the older adult population and ICT are constantly evolving and educational opportunities will need continuous development to fit its purpose. In the experience of the ICT50+ participants, cooperation between those facilitating education and older adult learners may lead to a more empowering educational experience.

764. GLOBAL GERIATRIC ASSESSMENT IN PRIMARY CARE: A RANDOMISED CLINICAL TRIAL

R. Monteserin¹, C. Brotons¹, I. Moral¹, S. Altimir², S. Santaeugenia², J. Padros³, J. Sellares¹ (¹EAP

Sardenya, Barcelona, Spain, ²Hospital Universitari Germans Trias i Pujol, Badalona, Spain, ³Unitat de Valoració Geriàtrica de la Fundació Conviure-Mutuum, Spain; rmonteserin@eapsardenya.net)

Background: Elderly population at risk could be managed through the implementation of preventive activities by General Practitioners. The objective of this study was to evaluate the efficacy of the global geriatric assessment (GGA) followed by a specific intervention in reducing morbidity and mortality. *Methods:* Randomised clinical trial with a control group. Eligible subjects were patients of 75 years and over visited at the primary care health centre. Patients were allocated to the intervention group (IG) or to usual care (UC) from a randomisation list. Patients from the IG classified as frail were individually visited by an expert in geriatrics, and those classified as non-frail were offered a group intervention. Follow-up period was 18 months. *Results:* 620 subjects were included, 49.7% in the IG and 50.3% in the UC group. Mean age (SD) was 79.9 (3.9), 60.3% were women and 30.6% of the subjects lived alone. Follow-up was completed by 430 (69.4%) subjects. Over 70% of subjects perceived their health to be good or very good at baseline and at the end of follow-up. At the end of the study the UC group showed a significantly greater risk of depression (Yesavage) than the IG (p=0.048). During follow-up, 13% of IG and 5% of UC group modified their initial status of frailty to non frailty, while 11% of IG and 22% of UC group became new frail subjects (p<0.001). Total number of events (admission to geriatric residence, home care, admission to the hospital, and deaths) occurred in 15% of the patients in the IG and in 17% of the UC group (p=0.64). *Conclusions:* GGA assessment followed by a specific intervention proved to be effective in retaining the number of new frail subjects and increasing the number of subjects who changed the status of frail to non frail during the follow-up.

765. BELGIAN SURVEY ON RESIDENTS' SATISFACTION IN NURSING HOMES — FROM A PILOT TO A CONTINUOUS STUDY

I. Morales, B. Jans (*Institute of Public Health, Brussels, Belgium; ingrid.morales@iph.fgov.be*)

Introduction. Surveys of resident satisfaction often geared towards provider and regulator concerns instead of those of residents. A nationwide study of residents' satisfaction on their care and living conditions has been carried out in Belgium. **Objectives.** The main objective was to assess the satisfaction of nursing home (NH) residents' through a standardized questionnaire. Participating NH can follow their results over time and be compared with similar NH. **Material and methods.** The standardized questionnaire was developed in several steps: key domains were identified in focus groups and priorities were selected by residents of several NH. A first questionnaire was created and tested in a pilot phase to obtain a definitive questionnaire. Seven domains were included: relationships inside and outside the NH; hotel and health care services; activities; residents' personal rights and costs. Additional questions like who decided the NH admission and the frequency of visits were included because they might influence the residents' satisfaction. The residents, their family and the NH employees were informed. Written consent was obtained from the resident. Only cognitively capable residents were interviewed. Interviewers were external to the NH. Confidentiality was ensured by a double coding system. A standard protocol, questionnaire and information documents were available. A first nationwide study was performed in 2001. By request of NH administrators a continuous registration system was set up in 2007, allowing NH to participate at their convenience with external, neutral support. Questionnaires are now scanned to reduce encoding errors and workload. **Results.** The first study in 55 voluntary NH shows excellent satisfaction, 13 out of 23 items (kindness, medical care and hygiene related items) attain more than 90% satisfaction. Meals, laundry, contacts outside the NH and with the NH direction reach between 80 and 90%. Disappointment is mostly due to delay in response to a bell (69%) and the activities organized by the NH (64%). The main determinants of residents' satisfaction are their own health perception and the involvement in the NH choice followed by educational level and feeling of loneliness. **Discussion.** Comparison with similar NH and own results over time is useful. Similar systems are being set up abroad. Those systems need standardized instruments and methodology to produce comparable results. Findings from the first study show a good satisfaction and provide a framework for a continuous resident satisfaction survey. The new survey will enable the refinement of the satisfaction determinants.

766. SOCIAL INEQUALITY AMONG OLDER PEOPLE AND WELFARE STATE REFORM

A. Motel-Klingebiel (*German Centre of Gerontology (DZA), Berlin, Germany; andreas.motel-klingebiel@dza.de*)

The ageing of societies is a challenge for social policy, with implications for social security, and for social gerontological analysis, influencing the social status attached to age and cohort membership. These issues have been aired in debates on intergenerational justice. Yet other inequalities are widely ignored in this discourse. All social security

systems re-distribute economic resources between specific members of societies. Decisions regarding child-bearing, elder care and employment have an effect on demographic developments. They may be influenced by whether and certain activities are recognised and rewarded by the welfare state. Reforms leading to further privatisation of social security may impact inequality patterns, erode social balancing and exacerbate equity problems as well as the conflict between production and reproduction. This paper will discuss the impact of social security systems on distributions of quality of life as a core outcome of welfare state intervention. Distributions of quality of life and the impact of basic inequality structures on this main outcome will be examined. Descriptive analyses as well as multivariate models prove that levels as well as variation of quality of life among older people are significantly influenced by welfare systems but higher inequality in privatised systems cannot be explained by structural indicators. Instead inequality position of older people express structural uncertainty — with effects for biographical perspectives on later life. The analyses apply data from the international comparative research project OASIS (*Lowenstein & Ogg, 2003; OASIS was funded within the 5th Framework Programme, European Community, Contract N° QLK6-CT-1999-02182*).

767. ALZHEIMER DISEASE AND CANCER ADJUVANT TREATMENT: NEW ETHICAL QUESTIONS

S. Moulias¹, T. Cudennec¹, S. Belliard¹, E. Hirsch², L. Teillet¹ (*¹CHU Ambroise Paré, APHP, Boulogne, France, ²espace éthique APHP, Hôpital St Louis, Paris, France; sophie.moulias@apr.aphp.fr*)

Cancer incidence increase with ageing, thus many patients present an Alzheimer disease and a cancer. Most often those patients don't have any treatment for their cancer, in the name of their cognitive disease. Sometimes the family care-givers refuse any treatment. All of those choices come after a reflexion with subjective and objective criteria for every person involved in the decision: physician, nurse, family member, patient... We propose a reflexion around 3 case-reports from patients with Alzheimer disease and cancer. A geriatric intervention with multidisciplinary discussion was necessary for the 3 of them, to treat their cancer. Those cases bring to light different ethical problems: care refusal and therapeutic relentlessness, economic costs, tolerance of treatment and quality of life, lack of evidence-based medicine on this matter, question of normality of this patients compared to those with cancer and without alzheimer disease, knowledge of the diagnosis for the patient and the family. Those ethical questions are important to consider in each case to have the best therapeutic reflexions for our patients.

768. ONCOGERIATRICS ACTIVITY: A COLLABORATIVE WORK

S. Moulias, T. Cudennec, S. Belliard, F. Muller, E. Mitry, P. Rougier, L. Teillet (*CHU Ambroise Paré, APHP, Boulogne, France; sophie.moulias@apr.aphp.fr*)

As a consequence of population ageing and the increasing incidence of cancers in advancing age, more than half of cancers occur after the age of 65 years. Since February 2004, a Geriatric Intervention Team (GIT) has been created at the Ambroise Paré academic hospital, a 440-beds urban academic hospital. During the first two years, 1900

intervention requests have been made by medical staff for the GIT. The aim of our study was to show the oncogeriatrics activity and the necessity of collaboration between oncologist and geriatrician. The scales used by the GIT were: the Mini Mental State Examination (MMSE), the mini-Geriatric Depression Scale, and the *timed get up and go test*. During the first two years, the GIT was solicited 124 times by the Digestive Oncology Department. Mean age of patients was 79±6 years old. There was a clear prevalence of cognitive disorders identified by the MMSE. Among 65 workable files (complete MMSE), 61% of the patients had an abnormal score (<26/30). The observation of a time and/or space disorientation was noticed in 30% of the cases. The mini-GDS used to detect depression, was positive in 43% of the evaluations. The Timed Get Up and Go Test was used to evaluate the walking capacity self-sufficiency and the risk of falls. It was abnormal, superior to 20 seconds, in 40% of the cases. Regularly, the GIT gave a proposition of orientation and participated to the decision of diagnostic or therapeutic procedure. A standardized geriatric evaluation as performed by the GIT is essential for the multidisciplinary discussion of elderly patients with gastro-intestinal cancer. A geriatric as well as an oncological evaluation are mandatory to offer to these patients the best therapeutic option and improve their prognosis as well as their quality of life. Those results show that there is a real place for Geriatric assessment and collaboration between specialties. The final target is to improve the quality of the management of elderly cancer patients.

769. GOOD PRACTICE IN CORPORATE AGE MANAGEMENT IN EUROPEAN UNION MEMBER STATES

G. Naegele (*Institute of Gerontology, Dortmund, Germany; orka@post.uni-dortmund.de*)

As demography is changing towards an ageing and at the same time shrinking population and workforce in most European countries there is in particular a strong need for organisational initiatives that support the employability of an ageing workforce. This paper seeks to present examples of and guidelines for the implementation of «*Good practice in age management*». These guidelines are evidence based and a product of a European project, financed by the European Foundation for the Improvement of the Living and Working Conditions (Dublin) and can be regarded as the successor project of the «Age barrier Project» (Walker 1996). In this project, about 190 case studies of private and public organisation in all EU-25 countries have been carried through. Partly, the results have been used in order to develop a new «Guide of Good Practice in Age Management», which has recently been published (together with Alan Walker) by the author is currently disseminated among policy makers in the the European Member States. The paper will, firstly, discuss the meaning of good practice and will then present different driving forces for the implementation of age management initiatives. The main focus of the paper will be the description of «good practice» in concrete action fields as recruitment, training, career development and others and will highlight promising framework conditions in order to start with and implement good practice in corporate age management. The paper will conclude with recommendations concerning the framework conditions for a successful and sustainable implementation of employment initiatives for an ageing

workforce and present the idea and the structure of the new «Guide of Good Practice».

770. SELF-ANNIHILATION AND OLDER WORKERS IN JAPAN

I. Nakata (*Hokusei Gakuen University, 2-3-1, Ohyachi nishi, Atsubetsu-ku, Sapporo; tnakata@hokusei.ac.jp*)

The aims of this study is to examine how «self-annihilation» for the firms, which is the feeling that most Japanese have been keeping for a long time, have affected work for the older people and age discrimination in Japan. The spirit of sacrificing for the firms is said to come under the influence of Confucism basically. Especially in prewar times, this ethos was educated whole nation through formal education. Japanese people are still internalizing the feeling in greater or lesser degree. It is also said that self-annihilation have fostered the construction of Japanese style management, which is comprised from lifetime employment and seniority income system. This system is often explained as ‘familistic management’ and has contributed to employment stability. Actually, the norm has two problems for the old workers. First, to look back on Japan’s postwar times, it is clear that the high economic growth, which rise the workers’ income and motivation for work, have fostered the self-annihilation, and the spirit have been enhanced the Japanese system of management conversely. And secondly, sacrificing for the firms not only has made workers work harder but also has misemployed to legitimize the mandatory retirement system and poor work environment. The mind of self-annihilation currently has declined because of worsening economic conditions and the change of the lifestyle. Nevertheless, the system that was established once, like the mandatory retirement, is not abolished and the condition of the age discrimination continues.

771. ADULT DAY CARE CENTER USERS’ PROFILE

B. Nespereira, A. Maseda, N. Varela, A.I. Pedreira, A. Balo, J.C. Millan-Calenti (*Gerontology Research Group and Adult Day Care Center La Milagrosa, University of A Coruna. 15006 A Coruna Spain; bnespereira@udc.es*)

One of the resources that have been more effective in the gerontological home support to maintain the elder person with dependence in his/her natural environment, are the therapeutic adult day centers. These centers are more effective if this physical dependence is a consequence of cognitive impairment. In order to improve the therapeutic attention given to the patients, it is important to know the profile of these centers’ users. In this work, we carried out a descriptive and analytical study of the users of the Adult Day Care Center La Milagrosa (A Coruña, NW Spain). We obtained the medico-social data, evaluated the degree of patients’ dependence and cognitive impairment, as well as the welfare load that they generated. The sample consisted of 80 users, 58 (72.5%) women and 22 (27.5% men) with a mean (±SD) age of 79.97±6.74 (range 63–91). With respect to the level of instruction, it is necessary to highlight that most of the patients (62.3%) had primary studies. Regarding their profession, 21.3% of users were housewives, 11.3% were agricultural workers, and 7.6% were teachers. The rest had other professions. Patients’ dependence level was assessed. The mean punctuation obtained was 61.6 (±28.1). For categories, only 5% of users were independent; the rest presented slight (55%), moderate (17.5%), serious (16.3%) or total (6.3%) dependence.

The evaluation of the cognitive state was done. The mean punctuation of the valuated patients was 19.5 (± 7.1). 70% of them presented cognitive impairment. The users' profile of this Adult Day Care Center La Milagrosa was a 80-year-old women, with primary studies, housewife, slight physical dependence and cognitive impairment who needs help from the nurses of the therapeutic center to carry out tasks related to continence, movement or food. Nurses working in adult day care centers can have a significant impact on the health of adult day care clients. Nurses serving the adult day care population need to have a clear definition of the users' profile and describe the skills needed to work in this population. The ultimate goal is to improve the quality of life for the adult day client and maintain the highest level of independence.

772. CARE LOAD IS CORRELATED TO FUNCTIONAL CAPACITY AND COGNITIVE IMPAIRMENT

B. Nespereira, N. Varela, A.I. Pedreira, A. Balo, T. Lorenzo, J.C. Millan-Calenti (*Gerontology Research Group and Adult Day Care Center La Milagrosa, University of A Coruna, 15006 A Coruna, Spain; bnespereira@udc.es*)

Based on the role of the adult day care centers in the system of attention to the elder, it is necessary to establish a patient characterization model, which allows, in a simple way, to establish the generated care loads as well as the cost of his/her stay in relation to the others. The main aim of this study is to correlate the patient's health state with the care load generated during his/her stay in an adult day care center. The idea was to determine the care load and relate it to the total time of direct attention (supervision and/or support), according to the characteristics of the patient. Patient's cognitive and functional states were also evaluated. We carried out a descriptive and analytical study of 80 users (72.5% women, mean age 80 years old), who attended the Adult Day Care Center La Milagrosa (A Coruña, NW Spain) for 3 months. Attention received from the staff of the center, both in basic and therapeutic activities of daily life was registered. Users mainly needed assistance in tasks related to continence, movement or transference, behavioural interventions and feed. Regarding the functional capacity, the mean punctuation obtained by means of Barthel Index was 61.56. For categories, only 5% of users were independent; the rest presented mild (55%), moderate (17.5%), severe (16.3%) or total (6.3%) dependence. Comparing the care load with the Barthel's punctuation, a direct positive relation was observed between both of them. Thus, and as expected, caring time increases when the degree of dependency is higher. The evaluation of the cognitive state was done by means of the Mini Mental State Examination, Spanish version (MEC) on 60 subjects (75%) since 20 could not be evaluated due to different reasons (illness, death,...). The mean punctuation of the valuated patients was 19.5, correlating in a positive way with the care load. In conclusion, a direct positive correlation exists between the functional capacity and the degree of cognitive impairment with the care load generated by the users of an adult day care center. Hence, knowing one person's functional capacity and cognitive impairment, it is possible to predict the care load that he/she will generate by means of the equation obtained in the correlations. This is important because it allows us to know the real cost generated by adult day care center's patient and, thus, to establish a personalized cost based on his/her health state.

773. CROSS-SECTIONAL AND PROSPECTIVE ASSOCIATIONS BETWEEN COGNITIVE APPRAISALS AND POSTTRAUMATIC STRESS DISORDER SYMPTOMS FOLLOWING STROKE

P. Norman¹, E.L. Field¹, J. Barton² (*¹University of Sheffield, ²Sheffield Care Trust; p.norman@sheffield.ac.uk*)

This study examined cross-sectional and prospective associations between cognitive appraisals and posttraumatic stress disorder (PTSD) symptoms following stroke. While in hospital, stroke patients ($n=81$) completed questionnaires assessing cognitive appraisals (i.e., negative cognitions about the self, negative cognitions about the world, and self-blame) and PTSD symptoms. PTSD symptoms were assessed again, following discharge, after 3 months ($n=70$). Significant correlations were found between the time 1 measures of negative cognitions about the self and the world, but not self-blame, and the severity of PTSD symptoms measured at time 1 and at time 2. Regression analyses revealed that cognitive appraisals explained a significant amount of variance in the severity of PTSD symptoms at time 1, with negative cognitions about the self emerging as a significant predictor. In contrast, time 1 cognitive appraisals were unable to explain additional variance in time 2 PTSD severity over and above that explained by time 1 PTSD severity. The findings therefore provide only partial support for Ehlers and Clark's (2000) cognitive model of PTSD.

774. SPECIES LONGEVITY IN HUMANS: RELATION TO PHYSICAL LOAD

V.N. Novoseltsev, J.A. Novoseltseva (*Institute of Control Sciences of RAS, Moscow, Russia; novoselc@ipu.rssi.ru*)

One of ways to analyze maximal life is based on an analysis of the dynamic diapason between the maximal and minimal rates of oxygen consumption (relatively, MROC and mROC). As for MROC decreases with age, this diapason shortens both in men and in women (Wilson, Tanaka 2000; Fitzgerald et al, 1997). The mROC can be thought as a constant about 2.5 of BMR (Westerterp 2004). An organism inevitably dies when its dynamic diapason equals zero, i.e. when MROC crosses the constant mROC line. This age determines the specie longevity in humans. We argue that a linear approximation is quite applicable for diminution of MROC with age. The estimates of maximal life span for different groups of individuals, based at this approximation, are 144 \pm 13 years for endurance trained, 126 \pm 11 for active and 111 \pm 6 for sedative men. In women these figures are 106 \pm 14, 104 \pm 13 and 123 \pm 9. Active men live longer in comparison with sedative ones. Vice versa, in women active individuals live shorter than sedative. These estimations are not statistically significant (with 95% confidence intervals). To come to statistical significance let us lower confidential probability to $p=0.9$ and merge the two groups, active individuals and those trained for endurance. In the case the figures are 133 \pm 11 in active and 111 \pm 5 in sedentary men, 102 \pm 10 and 123 \pm 8 in women, relatively. Then active men meaningfully ($p=0.9$) live longer than sedative ones, whereas active women live shorter than sedative. These results are far from the final ones. The first, they are based on the cross-sectional data, which is known to discourse from longitudinal ones at advanced ages. The second, at least in part our prognosis is made for a very long period. For example, for trained men this period equals 71 year whereas the data is available at

interval of 53 years. It can result in essential errors when a new data arrives. The other way, in active women the data for 62 years makes the prognosis for 24 years only. The correlation between physical activity and longevity probably do not reflect obligatory the casual relation between them. It is possible that «strong» men are active and live long whereas «weak» ones are passive and live shorter. If trained, the weak male individuals will not be longevous necessarily as for some other factors (e.g. genetic) can be responsible for the difference.

775. FALL PREDICTORS IN THE ELDERLY: A PROSPECTIVE STUDY

T. Ocetkiewicz, A. Skalska, T. Grodzicki (*Jagiellonian University, Cracow, Poland; tooce@esculap.pl*)

Introduction: Falls is one of the greatest problem contributing to increased number of injuries, increased morbidity and mortality, and institutionalization in the elderly. Because of the great number of risk factors, it is essential and useful to know which of them can indicate subjects at risk for falling. *Objectives:* To estimate the most important fall predictors in a prospective one-year observation. *Design and Methods:* 101 persons, aged 60-95, mean age 71.66±7.31; 65 women and 36 men were examined. All patients completed the questionnaire about falls in the beginning (falls in previous year) and after one year of observation. Cognition was assessed using Abbreviated Mental Test Score (AMTS), the mood — by short form of Geriatric Depression Scale (GDS), and everyday functioning by Activity of Daily Living (ADL) and the Instrumental Activity of Daily Living scales (iADL). In each patient blood pressure was measured and the orthostatic test was performed. The Berg Balance Scale (BBS) and computer balance platform were used for balance examination. The group of fallers and non-fallers were compared by the Student-t test and the non-linear estimation was used to obtain the most important risk factor of a future fall. *Results:* In comparison of the group of fallers and non-fallers, they did not differ significantly in the parameters measured on the balance platform and in the BBS score, but fallers had significantly lower score in some items of the BBS: unsupported standing 3.90±0.30 vs 3.98±0.11, functional reach 3.47±0.74 vs 3.82±0.56, and rotation of the head 3.47±0.81 vs 3.93±0.29; p<0,05. Non-linear estimation showed age, ADL score and functional reach as an independent future fall predictors — data shown in the table.

	Estimate	Wald's Chi-square	±95%CL	p
Age	-0,10440	5,037	-(0,19672-0,01208)	0,02
ADL	-1,21663	4,56743	-(2,34649-0,08678)	0,03
Functional reach	-1,06166	6,00403	-(1,92160-0,20173)	0,01

Conclusions: Age, ADL score and functional reach were the most important future fall predictors in the prospective observation.

776. ADAPTIVE STRATEGIES OF SELECTION, OPTIMIZATION AND COMPENSATION (SOC): VALIDATION OF A 15-ITEM SOC QUESTIONNAIRE

A. O'Hanlon, M. Barker, H. McGee, A. Hickey, R. Conroy (*Royal College of Surgeons in Ireland; aohanlon@rcsi.ie*)

Introduction: Assessing adaptation to developmental challenges is an important need in contemporary gerontol-

ogy. One promising model of adaptation is that of selection, optimization and compensation (SOC). Selection involves prioritising one's range of activities; optimization refers to strategies which maximise functioning, while compensation refers to strategies used to counteract losses. Despite their potential value, little evidence is available about SOC strategies. Since the available SOC-48 assessment tool is lengthy (i.e. a 96-statement instrument), a shortened version would be useful. We sought to pilot the SOC-48 and explore shorter versions. A 15-item scale (SOC-15) provided the best psychometric profile. *Methods:* SOC-15 was tested among community dwelling older people (n=2,033, age 65+). *Results:* Confirmatory analyses indicated that the four subscales of the SOC-15 provided a good fit for the data. SOC-15 subscales also correlated negatively with functional impairment, depression, and loneliness, and positively with self-esteem, generativity and more positive perceptions of ageing. Test-retest reliability over a 3 week period ranged from .72 to .49, p<.0001). SOC scales also correlated with other coping measures, particularly assimilative and accommodative modes of coping, and COPE subscales. *Conclusions:* Use of this shorter scale can minimize burden for participants, thus making it more feasible for research projects. The SOC-15 represents a psychometrically reliable and valid alternative to the full SOC-48.

777. EXPLAINING SUCCESSFUL AGEING; INTERACTIONS BETWEEN RESOURCES AND ADAPTIVE STRATEGIES OF SELECTION, OPTIMISATION AND COMPENSATION

A. O'Hanlon¹, R. Conroy¹, H. McGee¹, A. Hickey¹, M. Barker¹, D. O'Neill² (¹Royal College of Surgeons in Ireland, ²Adelaide and Meath Hospital; aohanlon@rcsi.ie)

Introduction: This study sought to evaluate the degree to which variations in successful ageing could be explained by two sets of variables: resources and self-regulation strategies of adaptation. *Methods:* Participants were 2,033 community-dwelling older (65+ yrs) adults interviewed in their own homes. Successful ageing was measured by self-rated health assessments, depression and social generativity (the degree to which people felt they were able to contribute to society and others). Resources were measured across demographic, functional and social domains. Strategies of adaptation were assessed using a 15-item Selection, Optimisation and Compensation Scale (SOC) derived from the work of Baltes and colleagues. *Results:* Findings indicated age differences in reported levels of resources, but not in use of SOC. Although resources were significantly related to SOC, both sets of variables were significantly related to indicators of successful ageing. Results indicated a greater interplay of resources with SOC strategies to predict successful ageing outcomes when resources were limited, e.g. for adults aged 80+ years. *Conclusions:* Resources facilitate use of SOC strategies. However, even in the context of resource constraints, SOC strategies still contributed to variance in successful ageing outcome indicators. SOC strategies have the potential to facilitate better health and well-being among community-based older adults.

778. RETIREMENT PLANS OF AUSTRALIA'S BABY BOOMERS

K.M. Oloughlin, R. Cant, H. Kendig (*The University of Sydney; K.Oloughlin@usyd.edu.au*)

Australia, like other developed countries, will be ageing more rapidly as the baby boom (post WW11 babies)

cohort starts to reach old age. While the baby boomers are receiving much attention in both scholarly research and the media, there are few studies in the Australian context which specifically address their preparations for the future, including expectations and retirement plans, or their perspective on who should bear responsibility for retirement. The social and policy context of retirement income in Australia differs from systems in European countries as, historically, a diverse system of government pensions, compulsory and privately funded schemes operated. The aim of this study was to explore the retirement plans and expectations of Australian baby boomers with a view to informing social and fiscal policy. *Method:* A qualitative study of participants recruited to 12 focus groups in the state of New South Wales, Australia grouped by socioeconomic status, gender and geographical location. The topics covered included work, retirement, financial and other planning. The data were analysed using NVivo software to identify the range of views on each topic and any variation by the selected study variables. *Results:* The majority of the sample had clearly started to think about retirement, but few had any knowledge of average life expectancy. Responses to questions about retirement planning were almost entirely related to the 'third age' phase of retirement and few referred to any contingency plans they had made for what they might do if they became sick or disabled. Socioeconomic status was the most important variable associated with planning; there was evidence of age and gender differences in plans for post-retirement planning and activities. *Conclusions:* The findings increase our understanding of how baby boomers from different socioeconomic backgrounds are thinking and planning for their retirement. In general the focus was on work plans rather than leisure plans or plans for voluntary activities with participants indicating that they would work beyond pension age in either full-time or casual employment.

779. DEVELOPING AN ASSESSMENT TO MEET YOUR NEEDS: A METHODOLOGICAL EXAMPLE LOOKING AT QUALITY OF CARE

M.T. O'Reilly¹, M. Courtney¹, H. Edwards¹, S. Hassall²
(¹Queensland University of Technology, Institute of Health & Biomedical Innovation, Brisbane, Australia, ²Blue Care, Brisbane, Australia; m2.oreilly@qut.edu.au)

This paper will describe the development of a quality assessment tool which began with an identified need within an Australian aged care provider. The progressive and comprehensive approach used has resulted in a relevant and clinically useful tool, and as such the methodology could be adopted by others wanting to develop assessment tools for use in gerontology. As with the rest of the developed world, the Australian population is ageing, thus quality in aged care services is an urgent issue. Recent years have seen the introduction of formalised accreditation within the Australian residential aged care system, but this only partially addresses quality assessment within this sector. Residential aged care in Australia does not yet have a standardised system of resident assessment related to clinical, rather than administrative, outcomes. An example of a comprehensive system of quality monitoring exists within the United States in the form of the Minimum Data Set (MDS) and Resident Assessment Instrument (RAI). Utilising previous research, with the MDS/RAI as inspiration, it was recognised that clinical indicators provided a

meaningful approach to assessing quality. Nominal groups were then conducted with experts in the field to obtain a prioritised list of clinical areas to be included in a quality assessment. The initial version of the assessment was a 21-item clinical care indicator (CCI) tool, which was then trialled nationally. This initial trial found the CCI Tool to be simple to use and an effective means of collecting data on the state of resident health and care. Further refinements occurred through the course of a small intervention study assessing its utility as a quality improvement instrument. The current version of the CCI Tool covers 23 clinical indicators, takes approximately 30 minutes to complete and is viewed favourably by nursing staff who use it. Current work focuses on psychometric analysis and benchmarking, which will further strengthen the CCI Tool's utility. Through application of a systematic methodology, the research team is confident they have developed an assessment tool which has potential benefits for resident care planning and continuous quality improvement within facilities and organisations, ultimately playing an important role in the measurement of aged care quality in Australia. Other services or researchers could use similar approaches to develop assessment tools which meet their needs and provide high quality data, thus enabling them to positively contribute to the wellbeing of the older people at whom they are targeted.

780. HOUSING AND HEALTH IN VERY OLD AGE: THE IMPACT OF CONTROL BELIEFS ON BEHAVIOURAL INDEPENDENCE

F. Oswald¹, H.-W. Wahl¹, O. Schilling¹, S. Iwarsson²
(¹Institute of Psychology, University of Heidelberg, ²Lund University; frank.oswald@psychologie.uni-heidelberg.de)

This paper aims (1) to examine the relationship between aspects of objective and perceived housing (i.e. objective housing accessibility, perceived usability, meaning of home, control beliefs, and residential satisfaction) and aspects of healthy ageing, defined as independence in daily activities (ADL/IADL) and subjective well-being (i.e. life satisfaction, positive and negative affect, depression); and (2) to exemplify the impact of perceived housing on healthy ageing by emphasising the mediating effect of domain specific housing-related control beliefs on the relationship between objective housing accessibility and independence in daily activities. Cross-national patterns were explored using data from the ENABLE-AGE Project, involving home interviews with 1,918 people aged 75–89 years living alone in urban areas of Sweden, Germany, the UK, Hungary and Latvia. The sample was stratified by age (75–79, 80–84, 85–89) and gender (75% women). Concerning aim 1, a set of canonical correlations was found, indicating that participants living in more accessible homes, who perceive their home as meaningful and useful, and who think that external influences are not responsible for their housing situation are more independent in daily activities and have better well-being. This pattern applies in each national sample. Regarding aim 2, multi-group structural equation modelling revealed that both housing accessibility and housing-related control beliefs explain unique portions of variation in independence in ADL. Participants with lower external control beliefs performed more independently in ADL. While some cross-national differences were observed, similarity existed regarding control beliefs and independence in ADL. In conclusion, findings high-

light (1) the need to develop holistic approaches that take both objective and perceived aspects of housing into account, and (2) the value of housing-related control beliefs in understanding older people's housing situation.

781. POLICY RESPONSES TO FAMILY CHANGE IN URBAN SPAIN: FINDINGS FROM THE «AGING IN LEGANÉS» STUDY

A. Otero (Universidad Autónoma de Madrid, Spain; angel.otero@uam.es)

Evidence provided by numerous observational studies on the protective effects of social relationships on older people's health is consistent. The main purpose of the 'Aging in Leganés' cohort study is to describe and relate social networks and support among community-dwelling older people to changes in health status. Leganés is a town of 185,000 inhabitants in the Madrid metropolitan area. Its urban development has been rapid, with the population rising from 8,000 in 1960 to 135,000 in 1975. This huge increase was due to inward migration from surrounding rural areas. The study began in 1993 with a representative sample of 1560 community dwelling people aged 65 and over, followed every two years until 1999. A new follow-up is in progress. The study shows that social life and support received by older people are centred on the family (87% of participants have 2 or more family ties, 41% are members of clubs or community organisations, and 37% visit a seniors' centre at least monthly). These figures have not changed significantly since 1993. Family-centred social relationships are characteristic of a Mediterranean culture. However, demographic and socio-economic changes, especially increased female labour market participation and rural-urban migration processes, are modifying family structures. This may affect social support and home care for older people. With increasing demand for formal care services by dependent people, new local policies aim to promote inter-generational and intra-generational relationships of older citizens. In Leganés, 'Healthy Urban Environment' and Older People's Plans seek to encourage walking, limit car use in the city centre, and improve social life in urban neighbourhoods (through social centres for seniors, clubs and other community organisations, and programmed activities like dancing). The health impacts of such policies need to be evaluated, and this is occurring through analysis of a new wave of the cohort study (2006-7).

782. THE FIRST SOCIETY FOR ACTIVE LONGEVITY AND SOCIAL GERONTOLOGY IN KAZAKHSTAN — THE RESULT OF COOPERATION WITH St. PETERSBURG INSTITUTE OF BIOREGULATION AND GERONTOLOGY

A.M. Paramzin, A.M. Sokolov, A.Ch. Baisultanova (Society for Active Longevity and Social Gerontology, Almaty, Kazakhstan; paramzin@ok.kz)

In actively developing Kazakhstan in 2006 the Decree of the President of RK authorizes «the Concept of steady development of Republic of Kazakhstan for 2007–2024 years», in which the main parameter of competitiveness of the country names average life span as the generalized parameter of quality of life of the population. Special government development programs in social gerontology are also stipulated. In this connection veteran's organizations — International Frontline Club by «Kazakhstanskaja Pravda» and Union of Veterans — Participants of

the Battle for Berlin has directed a delegation to the St. Petersburg Institute of Bioregulation and Gerontology, where delegation members received irrefragable advice by Prof. Vladimir Khavinson and Dr. Olga Mikhailova. The delegation has also received complete understanding and support in General Consulate of Kazakhstan and in Legislative Assembly of St. Petersburg. As a result, in Almaty, Kazakhstan there was organized «Society for Active Longevity and Social Gerontology» on the basis of consolidation of active and healthy seniors. They have appeared mainly participants of Great Patriotic war, born in 1921–1924, their number making more than one hundred persons. The oldest active participants of our society are 90–95 years old. «The Society for Active Longevity and Social Gerontology» in Almaty has developed an extensive plan for maintaining public activity of war veterans: the cooperation with the St. Petersburg Institute of Bioregulation and Gerontology, with Polyclinic Hospital for War Veterans, with the International Institute of Modern Politics (Almaty), a complex scientifically substantiated program for the improvement of senior citizens' health, creation of the anthology of the memoirs «My Way to Victory», participation in the development of special programs in gerontology, consolidation of the societies of the participants of Great Patriotic war, war in Afghanistan and in local conflicts, Internet dialogue between war veterans from Russia, Belarus, Ukraine, Israel, France, USA, participation in Republican fair of Social Ideas and Projects, etc. We address to the Congress participants of senior age with the proposal to organize «The International Society of Active Longevity and Social Gerontology» and to hold in the autumn of this year the First International Internet Conference of senior citizens, devoted to the next anniversary of the ending of the Great Patriotic War and the Second World War, online, with the Internet Center simultaneously in Almaty and in St. Petersburg.

783. USE OF POTENTIALLY INAPPROPRIATE PSYCHOTROPIC DRUGS IN HOSPITAL GERIATRIC WARDS

S. Pariel¹, P. Folio¹, C. Oasi¹, J. Belmin¹, OPTIMEGE study investigators² (¹Hospital Charles Foix & Université Paris 6, Ivry-sur-Seine, France, ²Bonneau G (Saint-Cloud), Bouclier H (Rocles), Chalafre C (Riom), Ferron C et Imler D (Saint-Etienne), Mbelo I (Dieppe), Menelet I (Blois), Taurand P (Eaubonne), Bussone A (Etampes), Huron M (Limoges), Trivalle C (Villejuif); sylvie.pariel@cfx.aphp.fr)

Background: The risk of adverse drug events (ADEs) is high in frail old subjects hospitalized in geriatrics. Psychotropics are frequently implicated in ADEs. On the basis of evidence-based medicine, many psychotropic are considered as potentially inappropriate in geriatrics. *Objective:* To assess the use of the potentially inappropriate psychotropic drugs (PIPD) in geriatrics in a network of French geriatric wards. *Methods:* Analyze medication orders of the patients admitted in 10 centers of geriatrics, including 28 units for a two year-period which used the same computer prescribing system (ORDOCLIC). PIPD were defined by means of the Beers' criteria. *Results:* 37323 medication orders of 4174 patients were analyzed. The total number of PIPD was 1799, corresponding to 4,82% of orders. Among the PIPD, were long half-life benzodiazepines (1,08% of orders and 9,63% of the patients), psychotropic anticholinergic drugs (1,05% of orders and 9,42% of the patients) and carbamate (0,85% of

orders and 7,64% of the patients). *Conclusion:* This study shows a high rate prescription of PIPD in geriatrics. We now develop programmes to incite prescribers to reduce their number of PIPD orders to prevent ADEs. *OPTIMEGE study investigators:* *Bonneau G (Saint-Cloud), Bouclier H (Rocles), Chalafre C (Riom), Ferron C et Imler D (Saint-Etienne), Mbelo I (Dieppe), Menelet I (Blois), Taurand P (Eaubonne), Bussone A (Etampes), Huron M (Limoges), Trivalle C (Villejuif).*

784. PSYCHOLOGICAL DISTRESS IN OLD PEOPLE LIVING IN THE COMMUNITY

C. Paul¹, O. Ribeiro¹, A.M. Fonseca² (¹University of Porto, UNIFAI/ICBAS, ²Catholic University; paul@cbas.up.pt)

Background: The prevalence of psychiatric disorders in the older population, other than dementia, is rising. Late-life psychological distress, notably depression, is common and disabling, increasing the use of health services. Depressive symptoms not meeting the criteria for major depression have adverse outcomes in older adult's mental health and predict both morbidity and mortality. Early detection of mild symptoms facilitates the implementation of psychosocial interventions that can improve quality of life of old people and prevent negative health outcomes. We perform a survey of a representative sample of old people living in the community (N=434), mean age 73.4 years (sd 6.2). *Methodology:* The general health questionnaire (GHQ) of Goldberg (1972) has been used as an instrument for screening people for possible psychological problems, namely depression. The shorter version (GHQ-12) is recommended as more adequate, brief and simpler. We used a cut point of four recommended for old people. *Results:* Data show 32% of old people with psychological distress (GHQ>4). More women (35.5%) than men (22.9%) were depressed. Within people with psychological distress the majority had incapacity in ADL (72.3%) and in IADL (64.8%) and tends to self-perceive their health as significantly worse than the others ($X^2(4)=63.508, p<0.000$). Data raise the problem of comorbidity, and the bi-directional association between incapacity and depression. Results are presented and discussed considering psychosocial characteristics of old people and their specific social context, and were compared with international data, explicitly from UK.

785. RETIRE OR NOT RETIRE? DIFFERENT PREFERENCES OF AGEING WORKERS

J. Perek-Bialas (Jagiellonian University; jperek@uj.edu.pl)

The issue of working or going for retirement is one of crucial in a recent discussion not only among gerontologists but as well (or even mostly) among economists who suggest different pension reforms which should aimed in increasing willingness to work longer and be as long as possible productive. Decision about retirement or not is strictly related to different preferences of ageing workers but as well they are affected by overall economic country's situation (results of World Value Survey proved that). Nevertheless, there are different reasons which are taken into account by individuals when they have to take such a decision. So, in the presentation there will be shown based on nationwide representative survey from Poland (the stratified random sample of adults, n=1,320) from the end of 2006, what are the most important reasons of going

for pension and what could be mostly preferred by ageing workers when they decide to retire. The questions used in the survey based on Health and Retirement US survey's methodology and directly could be compared with US results. Preliminary results show that the most important reasons of going for pension are among others: poor health of the individual or poor health of other family member (96% and 89% respectively), interestingly partner's going for pension (for someone who is married) is not so important in taking decision of retire, as well it is not important to go for pension because the person wants to do other things. The results of opinions what for people would like to retire show that the majority need on pension the lack of pressure (stress) (90%) and spending more time with children (90%), and people do not really need more time for volunteer work (church, civic organizations, etc.) — only 42% indicated that. This analysis will be presented with the control of age, gender, place of living, income and profession of respondents. Our results support the hypothesis of one hand different but also on the other, common preferences towards retirement decisions of all workers in general, nevertheless of their age.

786. OLDER WOMEN, DAILY LIFE AND SOCIAL PARTICIPATION. STRATEGIES TO PROMOTE ACTIVE AGING (MACTIS)

M. Perez-Salanova, E. Parraga (Institute on Aging, UAB, Barcelona, Spain; merce.perez@uab.es)

Purpose: The Active Aging framework (WHO) considers gender as one of the cross-cutting factors in the aging experience, underlying the double discrimination that suffer older women, and recommends the adoption of a gender-sensitive approach to improve AA. In our research «Mujeres mayores, cotidianidad y participación social. Estrategias para promover el envejecimiento activo (MACTIS)» the conceptions and practices of elderly women related to social participation have been explored. *Method:* Qualitative research including seven focus groups, with a total of fifty women aged between 60 and 85 years old, who live in Barcelona (Spain) and show heterogeneity in educational levels. The segmentation guidelines used to make the groups have been: living alone or with family and the participation on labour market. *Results:* The focus groups showed up that women's social implication is closely related with their life course and especially with the social rules, which define the career activity as the main feminine function. This function provides sense to their lives and allows them to feel useful. That influence is recognised as much for the women who have worked outside home as for the ones that haven't. For older women, being socially active requires the adoption of a new position, deciding to take care of them selves and leading their lives. In this manner, they confront the social rule that is perceived like the main obstacle for participation and start a new lively route. The expression «Now it's my time, it's my turn» summarize their decision. The development of this decision is fixed in 3 modalities: making some activities and renouncing to others, running and doing balancing acts all the time, and establishing limits. The three cases show conciliation strategies between the self care and the care of the others. To confront the social barriers to participate it is underlined the relational dimension, fixed in 2 aspects; Firstly, the support role that women develop encouraging others and accompanying them, and, in the second place,

the value of the activity groups. These allow the establishment of new bonds that report acknowledgement and feed back on the new route initiated by the elderly women.

787. OLDER STUDENTS AND EUROPEAN HIGHER EDUCATION AREA: AN OPPORTUNITY TO PROMOTE ACTIVE AGEING VALUES

M. Perez-Salanova, S. Arenas, E. Parraga (UAB, University Within Your Reach, Barcelona, Spain; merce.perez@uab.es)

Background. The Universitat Autònoma de Barcelona (UAB) promotes Active Ageing through the program «University within your reach» (Universitat a l'Abast-UALA). Initiated in 2000, UALA program offers life-long learning opportunities to the older from an inter-generational approach. Through one of its main lines, «Learning on Campus» (LOC), people over 50 can take courses from different graduate studies. European Higher Education Area (EHEA) will form a new framework for the older students. It is considered to become an opportunity which will favour their ageing experience. *Purpose.* We have explored perceptions and positioning of the older students towards EHEA and teachers' opinion on this subject. This approach allows us to involve the different users. *Methods.* Qualitative research: one seminar session (N=51) and three focus groups (general aspects on EHEA; collaborative work; and self-learning through virtual environment. N=23), both composed by students of LOC. Complementarily, semistructured interviews with teachers were made (N=5). *Results.* 1) About EHEA, future changes are mainly perceived as doubts and difficulties; 2) The positive aspects perceived concerns with younger students, work in network with European universities, and learning skills; 3) Intergenerational framework of education is perceived as an encouragement to maintain a positive attitude towards aging; 4) Higher use of virtual learning strategies is perceived negatively: loss of proximity, lower interaction with students and teachers; but required competences are not identified as a handicap; 5) Some doubts rise on application of collaborative work, but they find it positive: higher level of relations, with positive effects for older students and young alike; and 6) two positions through EHEA: a positive one, associated with higher participation and intergenerational contact; and a negative one from low self-efficiency perceived (risk of exclusion/self-exclusion), and low motivation towards virtual learning. *Conclusions.* Importance of providing information on EHEA, giving answers to questions and doubts detected, especially about topics perceived as a handicap. Results give criteria in monitoring the studies included in the EHEA experimental plan where the elder students are.

788. APPLYING DEMENTIA CARE MAPPING IN A GEROPSYCHIATRIC NURSING HOME SETTING

I.I. Petersen¹, L. Larsen² (¹The Municipality of Aarhus, Caritas, Skejby, Denmark, ²University of Aarhus, Aarhus, Denmark; larsl@psy.au.dk)

Background: In recent years the quality of care in Danish nursing homes has generated much public debate. A number of questionnaires measuring the satisfaction of nursing home residents have been introduced. However, severely demented residents are not able to answer questionnaires, so alternative methods must be applied. One such method

is Dementia Care Mapping (DCM). Basically DCM is a structured observational method. The individual resident is observed for a period of several hours subdivided in 5 minute intervals during which a certified DCM-observer must categorize the main type of behavior and well-being of the resident according to specific rules. However, DCM is not ordinarily used in geropsychiatric populations and no standard for good care has been developed for this specific population. *Objective:* To test whether DCM is an appropriate tool for evaluating the quality of care in this setting. If so, what should be the standard for good care? *Subjects:* 23 previously diagnosed demented residents predominantly suffering from Alzheimer's disease and all characterized by behavioral disturbances. *Method:* All residents were observed and mapped for a period of 6 hours during the day and 6 hours during the evening. Two certified DCM users each observed three residents at a time in the public areas of the nursing home. *Results and discussion:* On average the present population showed scores that would normally be considered the result of insufficient care. Considering the complex geropsychiatric problems of the residents it is nonetheless our impression that they generally received high quality care.

789. A CRITICAL HUMAN ECOLOGY APPROACH TO RURAL AGING

J.E. Phillips¹, N. Keating² (¹University of Wales, Swansea, UK, ²University of Alberta, Edmonton, Canada; norah.keating@ualberta.ca)

The purpose of this presentation is to establish and describe a critical human ecology lens which places people in context and challenges assumptions about growing older in rural areas. This lens provides a foundation to the interactions of older adults with the rural contexts that shape their experiences. Its main premise is that people do not exist in isolation but in dynamic interaction with the physical and social contexts in which they live. The paper will describe the critical ecological framework before drawing on examples where the theoretical framework has been used in relation to rural issues. It goes on to challenge the assumptions held around older people as passive recipients in their environmental context and highlights the need for policy to reflect the broader context in which older people participate and influence decision-making. The paper also sets the scene for the following papers.

790. THE 'ELECTED' AND THE 'EXCLUDED': SOCIOLOGICAL PERSPECTIVES ON PLACE AND COMMUNITY IN OLD AGE

C.R. Phillipson (Centre for Social Gerontology, Keele University, UK; c.r.phillipson@vco.keele.ac.uk)

This paper explores themes related to belonging and identity in the context of community and residential location. It notes the increased importance of environmental perspectives in gerontology, but argues that this approach is being transformed by social, cultural and economic changes associated with globalisation. The paper argues that globalisation offers a new approach to considering community and environmental relationships in later life. While the impact of global change at a local level represents an important theme in sociological perspectives on community change, it is especially relevant to older people, given the length of time many will have resided in the same locality. Equally, globalisation generates new types of movement in old age, with the construction of an expanding mix of spac-

es, communities and lifestyle settings. Such processes also generate new social divisions, for example between those able to choose residential locations consistent with their biographies, and those who experience rejection or marginalisation from their locality. The paper explores these issues within the context of the changing nature of community attachments in later life, identifying three issues for future research: (1) exploring community dimensions to quality of life in old age; (2) developing new approaches to understanding older people's relationship to urban change; (3) researching the increasing variety of attachments that older people bring to their communities. The paper concludes by highlighting the need to increase understanding of the processes that link globalisation with urban expressions of social and cultural change. Increasingly, pathways through later life will be shaped by older people's control over and access to the city's resources that are being influenced by the volatile forces associated with global change. Exploring the different attachments to such environments, and their consequences for later life, is a vital new challenge for gerontology.

791. CASE-MANAGEMENT OF FRAIL OLDER PEOPLE IN THE ENGLISH NHS: THEORY AND POLICY

S. Pickard (University of Manchester, NPCRDC, Manchester, UK; susan.pickard@manchester.ac.uk)

This paper presents results from an evaluation of community matron-led 'case management' of frail older people which was introduced into the English National Health Service (NHS) in 2003. The model originated in the United States as a service for vulnerable older nursing home residents. In introducing it into the English NHS the intention of policy makers was to improve patient outcomes and in particular to reduce unplanned hospital admissions. Case studies took place in two phases, firstly with all nine pilot sites early in the implementation phase (April 2003–August 2004) and then with four of these, together with two non-Evercare pilots which were independently implementing case management, at a later stage (September 2004–December 2005). This paper draws on evidence obtained from interviews with 72 patients and 52 carers across all sites as well as content analysis of policy and other documents and observation of meetings. The data reveal many innovative features of the service including a proactive, innovative approach which spans boundaries between primary and secondary and health and social care and a policy of involving and supporting carers as experts. It added a frequency of contact, regular monitoring and access to a range of service that many patients had not previously received. It was warmly valued by patients and carers alike for the thoroughness of its clinical care, the care co-ordination across agencies and interfaces and the psychosocial support provided by the nurse. Negative features included limited availability of case managers out of hours, limited alternatives to admission and poor coordination between primary and secondary care interfaces. Moreover, further close examination of the underlying drivers for this innovation reveals a confusion of underlying theories from which policy drew including structural-functionalist, biographical, structural-dependency and neo-liberal theories of the 'burden' of ageing and their respective solutions. The fact that supporting quantitative data also suggested it had a minimal impact on emergency admissions while

incurring extra costs are of particular concern when viewed from within this neo-liberal framework.

792. THE VIRTUAL RESIDENTIAL HOME FOR OLDER PERSONS: EXPERIENCES FROM THE GERMAN SOPHIA PROJECT

R. Pieper (University of Bamberg; richard.pieper@sowi.uni-bamberg.de)

The SOPHIA project is the most successful project in Germany supporting households of older persons by new IT and enabling «ageing in place». The project connects households by an IT infrastructure consisting of an ISDN or broadband network, a central service unit and a special call centre (at night). The periphery in the home features the TV with a set-up box supporting videophone and with a remote control adapted for older persons, and an alarm system with a wristband (Vivago system) and a base unit picking up health status information and alarms from the older person and allowing direct speech contact. About two years ago the project was transformed into an enterprise providing the service on a private basis demonstrating also the economic viability of a «virtual old age home». The presentation reports on the development of the system, difficulties both with the technical and social system, and the conditions of success from the perspective of the users as reflected in continuous feedback and evaluation. The most important effects are: (a) a basic need for safety and security is the original motive to join; (b) social contact and communication needs develop with the use of the system; (c) the innovative technology itself is not interesting for users beyond its functionality; important factors of success are (d) the «godfather»-system assigning a personal contact partner to each household supporting individualised communication and (e) the «activating strategy» which makes the «godfather» an active partner establishing contacts within an agreed scheme of support (e.g. reminding of medication); and (f) the importance of building up local support networks in cooperation with housing companies, welfare organisations, self-help groups and volunteers. The last feature is also a barrier for a fast proliferation of the system, since individual clients are easier to find than cooperating local support systems which usually show interest only if a number of their (potential) clients is involved. The SOPHIA system, therefore, allows for different and evolving levels of service provision from simple emergency alarm to integration of local support and family networks as well as features of facility management.

793. THEORIES OF HELP AND THE «CARE TRIAD»: THE CARE RELATIONSHIP IN LONG-TERM CARE

R. Pieper (University of Bamberg; richard.pieper@sowi.uni-bamberg.de)

Theories of help focus typically on one of three aspects: (1) the motivation of the helper, (2) the social institution of help, or (3) the helping relationship as social interaction. The main issue in (1) is the conceptualisation of altruism; it has been argued convincingly that «self-interest» is not a sufficient basis for the explanation of altruistic behaviour and that a concept of «concern for the welfare of the recipient» has to be introduced which is rooted in the social identity of the helper. A central issue in (2) is related to the fact that the need for help implies (in non-trivial cases) an existential vulnerability and dependency. The dependency constitutes a moral obligation for the

helper and for the society which results in ethical rules and supporting institutions regulating who should help under given circumstances. Concerning (3) usually two issues are emphasised, i.e. the emergence of helping and receiving motivations in the interaction and the discursive negotiation of the helping relationship. The presentation will apply these three approaches to the case of long-term care for frail older persons. Three additional aspects of care will be introduced: (1) a distinction of four dimensions of care (work efficacy, resources, interaction, value orientation), (2) the «care triad» (client, professional carer, informal carer) as the (triadic) care relationship negotiating care, and (3) the role of care management as «setting the stage» for the interaction. The «tetrahedron of care» is proposed as model for the care relationship combining these three aspects in a «formal discourse model of care».

794. QUALITY OF LIFE AND QUALITY OF MANAGEMENT: THE CAREKEYS PROJECT

R. Pieper (University of Bamberg;
richard.pieper@sowi.uni-bamberg.de)

Care services are an important element of the life situation of frail older persons and should be included in the concept of quality of life. The services play an increasing role with the increase of dependency which in turn motivates and/or necessitates a move from home care to institutional care. The difference between home care and institutional care is not only a difference of scope and intensity of services meeting personal needs, but also a difference of the context of care and care provision and, therefore, of management strategies. Results from the Care Keys research (EU project from 2003–2006) comparing information on management quality, care quality and life quality collected in home care and institutional care services in five European countries (67 services; ca. 1500 clients) demonstrated the impact of management on care practices and care outcomes. The presentation argues for the inclusion of management aspects into a theoretical model of «care-related quality of life» of frail older persons, describes the research design and methods employed in Care Keys, and reports some first results of empirical analyses. The major results are (a) that different «styles» of management have an impact on quality of care and care outcomes, (b) that the impact is stronger in institutional care than in home care, and (c) that there is in institutional care an indirect effect of management influencing care rather than care outcomes while in home care there is a relatively stronger direct effect of management on quality of life indicators. The results are explained in view of the different social contexts of home care and institutional care.

795. OLDER PEOPLE ATTENDING UNIVERSITY EDUCATIONAL PROGRAMS: A COMPARISON BETWEEN MODELS IN SPAIN

S. Pinazo¹, F. Villar², C. Triado², J. Montoro³, C. Sole⁴, M. Celdran² (¹Universidad de Valencia, Spain, ²Universidad de Barcelona, Spain, ³Kent State University, Ohio, EEUU, ⁴Universidad Ramon Llull, Spain; sacramento.pinazo@uv.es)

Participation of older people in courses and educational programs organized by universities is a widespread phenomenon across Europe. However, the nature of these programs is quite variable. The aim of the present research is to compare the motivations to attend, how older learners evaluate different kind of university programs, and what

kind of gains in their life have been stimulated by program attendance. Specifically, we have compared three types of programs: programs organized as a set of independent conferences (model 1), programs designed with an integrated curriculum, similar to regular university degrees but adapted to older people (model 2), and programs with an integrated curriculum that include intergenerational contact, since the curriculum also includes some regular university courses where older learners mix up with ordinary younger students (model 3). The sample was composed of 627 people of 55 years old and over. The participant completed four instruments: a questionnaire about motivations to attend the university program, a questionnaire to evaluate different aspects of the program (teachers, methodology, facilities, etc.), two incomplete sentences in which the participant was prompted to tell the best feature of the program and the thing he/she would improve in the program, and a questionnaire of possible gains stimulated by attending the program. Results show that the profile of participants was different between programs. Participants tended to be younger in model 2&3. Also, in these models the percentage of males was higher, compared to model 1. Some of the motivations to attend the programs raised significant differences between programs. Particularly, knowledge-oriented motivations were higher in model 3, whereas social motivations were more important in model 1. Satisfaction and the general evaluation of the course were excellent in every program. However, participants who belonged to models 2&3 rated significantly higher aspects related to the methodology, degree of participation and relationships with other students, whereas they were more critical about organization and facilities. As for perceived gains promoted by attending the program, they are focused in an increasing self-satisfaction and more capacity to enjoy life. In a slightly lesser degree were rated an increase in number of friends or feelings of being useful and productive. Particularly, participants in model 3 perceive significantly more gains than participants in models 1&3 in self-satisfaction and a greater increase in activity thanks to attending the program.

796. DO THEY KNOW AND REMEMBER? WAR MEMORIES IN THREE RUSSIAN GENERATIONS

A. Podolskij (M.V. Lomonosov Moscow State University, Russia; apodolskij@hotmail.com)

Aim: To investigate the relationship between knowledge about the WWII events, and estimation of both own and other generations' major personal characteristics in three Russian generations: the War generation, the generation of their children (born in 30s–50s), and the generation of their grandchildren (born in 60s–80s). *Method:* 27 World War II male and female veterans, ranging from 77–90 years, their children and grandchildren from five regions of Russia and Ukraine participated in answering the original questionnaire «War for Me» (Podolskij, Karabanova, 2006) and another original questionnaire aimed to evaluate both own and two other generations' major personal characteristics (Podolskij, Karabanova, 2006). *Findings:* Surprisingly we didn't find very big differences between the three generations in knowledge of WWII events. The veteran generation's level of knowledge appeared to be lower than expected, and, by contrary, the younger generation's level higher. Self-estimation of own knowledge

about WWII events was more accurate in the young generation. Only a few connections between the three generations were found concerning generation about generation judgements. As regards judgements about the veteran generation the following significant correlations were found: veterans — children: «following basic principles»; veterans — grandchildren: «honesty». Approximately the same picture can be drawn concerning judgements about the children and grandchildren generations. About children: veterans — children: «following basic principles», «honesty»; veterans — grandchildren: «following basic principles», «dignity, self-confidence». About grandchildren: veterans — children: «following basic principles»; veterans — grandchildren: «feeling of hopelessness»; children — grandchildren: «collectivism». *Discussion:* The findings indicate the need to continue investigation to clarify whether the same meanings stand behind similar judgements of representatives of different generation (probably using psychosemantic procedures). An increase in sample size may also be useful as only a very few judgements of different generations showed significant correlations, and this might be due to the limited sample size.

797. 1985–2005 PROGRESSIONS OF THE MEAN LIFE EXPECTANCY IN ROMANIAN WITHIN THE DEMOGRAPHIC AGING CONTEXT

C. Popescu¹, G. Onose², A. Bojan¹ (¹Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, ²Bagdasar Arseni Emergency Hospital, Bucharest, Romania; catapopescu50@yahoo.com)

In this study we carried out further, while from an international perspective, a previous approach concerning the analysis of factors, which at first induced and subsequently have amplified the demographic aging process in Romania. The demographic transition implicates changes from high to low and very low natality, mortality rates and their particularities during contemporary time intervals. At present, the so-called post-transition phase characterized in principal by a chronic negative natural growth rate is settling down. Compared with other European countries, Romania entered later the superior phases of transition with a natality decrease after 1930, so that in 1956 the elderly represented 9.9 %. We may say that until 1956, population age structure was normal so that according to demography, the population was young but afterwards aging rates were accelerated. Up-to-date data show in 2000 an elderly population of 19%. As calculated by use of projections, in 2050 old people would represent 40% of the population. Thus, on long-term fertility evolution in Romania would result in a population that continues to be mainly old and to decrease in number. The study of natality as a factor in determining progression of the aging process does not point towards particular issues. Comparatively, the study of the decrease in mortality and its role in the aging process reveals more complex and even contradictory aspects. The later statement is relevant as evidenced by our statistical analysis of inter-relationships between the mortality progression and the life-expectancy at birth. We thus attempted to clarify mortality progression mechanisms, their characteristics and consequences for Romania. At present, it is widely accepted that the demographic aging is irreversible, with multiple biological, psychological, medical, social, economic and cultural consequences. Advancing of age is associated, in principal, with risk of multiple pathol-

ogy, due to degenerative processes and have determined in the developed countries allocating funds for the elderly that count as the greatest part of the resources foreordained to healthcare. In this sense, recent studies have showed that in countries where life expectancy at birth is high, and further increases, this presumes association of an increased number of years with risky health conditions, disabilities, dependence and very high costs if no concessions concerning life-standards. The above note invalidates optimistic reports of the 80ties stating that any increase in life-expectancy at birth could be maintained by a corresponding life quality so that aging would not prove to be strictly disadvantageous.

798. THE DEMOGRAPHIC TRAJECTORY OF THE OLDEST OLDS

M. Poulain, C. Guibault (UCL, GuDAP, Louvain-la-Neuve, Belgium; poulain@sped.ucl.ac.be)

Is the life history of oldest olds different compared with other people as far as demographic characteristics are concerned? What kind of demographic characteristics have to be considered? First we will compare the impact of the marital status, e.g. being single, married, widowed or divorced. Do single or married people have a higher chance to reach 90 or 100 compared to widowed or divorced? What is the impact of widowhood to the length of life? We already know that usually the level of mortality increases during the first years of widowhood. Consequently is it better to be widowed at younger or older age in order to live longer? We will consider also the role of living arrangements and more specifically whether living alone, living in married couple, living with children or living in institution are favourable for living longer or not. A particular attention will be devoted to people entering in nursing home. What is the impact of institutionalisation on the propensity to live longer? In order to answer these questions we will analyse the situation in Belgium using information about the life history of two different groups of oldest olds. The first group is composed by a representative sample of 2000 persons aged 90 years and over while the second group will include 2000 centenarians born between 1890 and 1900. The demographic trajectories of both groups will be compared with the average situation observed in the total population of Belgium. As an example the age at widowhood of males and females will be compared for these three populations. The basic data source for this investigation is the Belgian population register (*Registre National des personnes physiques*) where data on the demographic trajectory of these selected persons are recorded on an individual base. The conclusion will highlight the individual demographic characteristics that may be considered as determinants of longevity. This investigation will contribute to the scientific debate on longevity determinants involving various disciplines as genetics, geriatrics, nutrition, sociology, psychology etc.

799. HEALTH, PERSONALITY AND SOCIO-CULTURAL TRENDS FOR AN ELDERLY POPULATION IN TRANSITION IN ROMANIA

G.I. Prada, I.G. Fita (Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; giprada@gmail.com)

Since 1990 entire population in Romania faced several transformations and challenges. First of all, there was a constant increase in the percentage of elderly in general

population reaching 14.7% in 2006. Number of retired people increased dramatically at the beginning of this period. This was due to some economical reasons and posed a new burden on the working section of population. Another characteristic is the high proportion of rural population; almost half of the people in Romania live in the countryside, a situation completely different from other countries in European Union. Demographic situation and future trends are analyzed. On the other hand, several aspects regarding medical services for elderly in Romania are presented. Health problems of old people in Romania are discussed taking into account some typical features, including the low life expectancy as compared to the other countries in European Community. A historical perspective of the problems is presented since this could shed a better light over the roots of the particular situation in Romania. Each country has distinctive circumstances and they should be taken into account when tailoring the efforts for integration in a larger community with a different, democratic experience.

800. EMOTIONAL COMPONENTS IN QUALITY OF LIFE OF ELDERLY AND ADULT CHILDREN: EMOTIONAL SOLIDARITY, CONFLICT AND AMBIVALENCE

D. Prilutzky (University of Haifa, Israel; dana@research.haifa.ac.il)

Objective: The goal of this study was to examine the associations between emotional components (emotional solidarity, conflict and ambivalence) and their influence on quality of life of elders and their adult children (caregivers). *Method:* A total of 708 responders were interviewed face to face, and divided into 3 age groups: adult children 45–59, young old 60–74, and old-old 75+. *Results:* Findings indicate that emotional solidarity and conflict, but not ambivalence, are predictors of quality of life in all age groups. Conflict with parent decreases ambivalence, while conflict with offspring increases contradicting feelings. Emotional components have central influence on quality of life of old parents in the younger age group (60–74). The first period of ageing (60–74) is different from the later years (75+) in the process of change in two dimensions: the intra-psycho dimension and the emotional perception of parenthood. *Conclusions:* The meaning and the consequences of intergenerational emotional solidarity, conflict, and ambivalence varies in different age groups. Conflict is differently perceived and experienced by parents and children. Although ambivalence does not predict quality of life, it has a significant contribution for understanding intergenerational relationships in the ageing family.

801. SURVEY OF HOLOCAUST SURVIVORS DURING THE SECOND LEBANON WAR: NEEDS, DIFFICULTIES AND UNIQUE CHARACTERISTICS

D. Prilutzky, A. Lowenstein, B. Rappaport, D. Halperin (Center for Research & Study of Aging, University of Haifa, Israel; dana@research.haifa.ac.il)

The objective of the survey was to examine the needs and difficulties (functional and emotional) of the population of Holocaust survivors under the missiles attack, in order to plan immediate and future responses to urgent needs. *Method:* 110 men and women, Holocaust survivors that lived in communities under missiles attack in north Israel, and received services from the SULAM program

(Holocaust survivors that receive assistance of home care upon discharge from hospital, by the Foundation for the Benefit of Holocaust Victims in Israel), were interviewed on the telephone. The data was collected with a structured instrument that included anxiety, somatization, depression and loneliness questionnaires, personal information, health status, and services received from agencies. In addition, an opened-questions questionnaire included personal, emotional and functional needs of the survivors. The interviewees were Hebrew and Russian speakers, and were interviewed in their mother language. *Findings* reveal higher rates of anxiety, depression and somatization among the newer immigrants (less than 18 years in Israel), and among residents of the periphery. Women, unmarried people, residents of the periphery and the newer immigrants suffered from more loneliness. There were many complaints of breathing difficulties, weakness and use of tranquilizers. The survey revealed some instrumental problems: paid caregivers did not come to work; there was a shortage of food and medicines. The coping patterns that were identified included mutual help; use of past memories for strengthening (the resilience model), for others prior trauma reduced the ability to withstand the additional stress (the vulnerability model). *Conclusions:* it is of major importance to provide basic needs in times of emergency. The old Holocaust survivors have a small and fragile support network that was partly paralyzed during the war. There were functioning difficulties of organizations in the community — caregiver agencies, food and medicines supply. It is necessary to activate help systems and develop programs that will respond to the survivor's basic needs during war or emergency.

802. CROSS-CULTURAL STUDY OF THE INTERGENERATIONAL MUTUAL RELATIONS: THE PAST AND THE PRESENT (A BRIEF SURVEY OF THE ELDER ABUSE)

P.V. Puchkov, S.S. Damzaev (Saratov State University, Russia; pavelpuchkov@yandex.ru)

The ageing of the population is the most characteristic demographic phenomenon of a modern epoch. All basic features of the global ageing of the population of a planet are characteristic for Russia, for its large regions and cities including the Saratov oblast and the town of Saratov. Economic and social consequences of the demographic ageing are being discussed in the demographic literature for many years. Thus the obvious or prospective negative consequences and problems generated by them (for example, health, a financial position and employment, a disproportion of the man's and female elderly population, loneliness of elderly women, position of the older persons in a society, etc.) usually takes place. Against this background some problems of the inner family relationships between adult and their aged parents began to stand out. These mutual relations can be accompanied in some cases by the conflict situations connected with the violence, unacceptable cruel treatment. Such mutual relations with the aged become unacceptable from the point of view of accepted social cultural norms and they are known in the western gerontology literature as gerontology abusing (elderly abuse). However, elderly abuse is not a new problem. The retrospective analysis of the attitude of a society and the state in the different countries and in the different historical periods to the old people has showed that it as well as the

position of the aged themselves was very differently and as a whole is characterized by the risings and the fallings. Though in the traditional culture of many peoples there are still a lot of the vague matters that give rise the most contradiction interpretations among some scientists. It is explained to a considerable extent by the coexistence in the national tradition of these peoples of various levels of their world outlook. Especially it is typically for the Christian epoch when the rituals generated by pagan thinking continued to exist in the transformed and rethought forms. Almost a quarter century has passed since elder abuse first became a matter of public concern in many countries of the world and occurs both in domestic and institutional settings. The researches which have been carried out in a number of the western countries testify in particular that cases of the elderly abuse have the tendency of the growth. As a rule many scientists connect as a whole that fact with the increasing of a share of an elderly part of the population of a planet in the conditions of the demographic world crisis. The analytical survey of the cross-cultural studies of the intergenerational mutual relations also showed that the problem of elder abuse was now in the center of the attention of many domestic and foreign scientists. Nevertheless in the studying of that problematic there are still the certain gaps, solution of which is one of the main tasks faced before the world scientists at present.

803. PROTECTIVE EFFECTS OF SOCIAL NETWORK ON DISABILITY AMONG THE OLDER ADULTS IN SPAIN

D. Puga¹, M.A. Escobar² (1CSIC, Institute of Economic and Geography, Madrid, Spain, 2Universitat Internacional de Catalunya, Barcelona, Spain; dpuga@ieg.csic.es)

Functional and cognitive deterioration that can be reached in advanced moments of the life course does not associate only with the ageing, but also with the way of life and the characteristics of the environment of the individual. Recent investigations have shown that beyond the biological specific conditions, factors as the social network, social integration and participation, affect the social vulnerability, acting like predictors of personal situations relative to the health and the functional autonomy of the elderly. The aim of this study is to analyze the effect of the social networks of a cohort of Spanish older adults in the beginning of old age, on their level of autonomy (in terms of instrumental and basic disability). The source of data is the survey «Processes of Vulnerability in the Oldness», whose first wave was realized in 2005. The population object of study is the cohort between 70 and 74 years resident in metropolitan areas (Madrid and Barcelona) and not institutionalized, with a sample of 1250 individuals. Disability measures up for the development of basic activities of the daily life (ADL), and instrumental activities of the daily life (IADL), by means of the test of Katz and Lawton. The structural aspects of the social relations measure up across the diversity of the social net and of the social participation. After an confirmatory factorial analysis was constructed a model of measurement of the social network at the beginning of old age, defining dominions that organize social links according to role-specific: household, children and grandsons, brothers and friends, intimacy, associationism, social activities, and dynamism. The characteristics of the social network (number of members, proximity, frequency of contacts) measure up of form differentiated for every

link, which allows to obtain a global indicator of network diversity. The most important finding of this study has been the sensibility that has demonstrated the global indicator of social network constructed, to detect the influence of the structural aspects of the social environment on the level of disability to the beginning of old age. The diversity and strength of social network of this cohort of Spanish older adults shows a protective effect on both instrumental and basic disability, though it is more remarkable in case of the most serious disability.

804. WHAT MAKES OLD PEOPLE UTILISE THE HEALTH CARE SERVICES

M. Rennemark¹, G. Holst², C. Fagerstrom³, A. Halling² (1Vaxjo University and Competence Center, Blekinge County Council, Sweden, 2Competence Center, Blekinge County Council, Sweden, 3Blekinge Institute of Technology, Sweden; mikael.rennemark@vxu.se)

Research on what makes old people utilise health care resources is important for both the quality of life of the elderly and for the societal economical future perspective. The most common reason for health care utilisation is of course illness. It can however be assumed that also other factors are related to differences in the degree of health care utilisation. Previous research has shown that women use the health care services more often than men and people who are higher educated and more socially anchored are more inclined to utilise the health care services. Another factor that can be assumed to be related to the health care utilisation is health related beliefs and orientations, such as locus of control and sense of coherence. These factors have previously been shown to be clearly related to the perception and interpretation of symptoms of illness, and it can be assumed that they are related also to the inclination to utilise the health care services. The purpose of this study was to investigate possible differences in locus of control and sense of coherence between high frequent -and low frequent users of the health care services, controlling for age, gender, education level, social anchorage and health status. Even if we know that these factors are related to health behaviours in univariate models, it has not been investigated previously, to what degree they help explaining the degree of health care utilisation in multivariate models. The SNAC-Blekinge baseline database, consisting of data on 585 men and 817 women at 60 to 96 years of age, was used. Stepwise logistic regression analyses were calculated in order to investigate multivariate relationships. The results showed that the degree of health care utilisation was most strongly related to co-morbidity, followed, in mentioned order, by internal locus of control and sense of coherence. The interpretations of the results are that the inclination to use the health care services is multi determined and that psychological factors are involved. If older people could be helped to develop a stronger internal locus of control and sense of coherence, their inclination to use the health care services could be decreased.

805. CONSTRUCTIONS OF OLD AGE BASED ON VISUAL SIGNS

H. Rexbye (University of Southern Denmark, Institute of Public Health; hrexbye@health.sdu.dk)

Postmodern perspectives of ageing have been characterized by phenomena that form a cultural bricolage: diversity, fragmentation and blurring boundaries between young

and old. Such a dechronologization of the life course may result in absence of fixed guidelines through the life course, and thus increased flexibility in visual self-representation. Visual appearance has become increasingly important as a symbol of identity in consumer culture. However, the assumed increased flexibility in visual self-representation through the life course is contrasted by the fact that society idealizes youth. This places the ageing body in a dilemma of representation. The aim of this study is to explore visual ageing and to point towards some tensions in this field. It has been suggested that representations of old age and images of ageing may vary in the different semantic levels of a) popular and consumer culture, b) individuals subjective experiences of own bodies, and c) meanings attached to individuals' bodies by other people. This study concerns the latter aspect. By using photos of older persons (70+) as starting point, it is explored how age is assessed in older persons. Interviews with forty informants of various age and background show that age is read in a spread of stages and categories. Main age indicators are biological markers: skin, eyes, and hair colour, but supplemented by charisma, style, and grooming. In-depth interviews with nine informants reveal key themes of «activity», «moral» and «wear and tear». In both reading and interpreting of visual signs of ageing several discourses interact: medical-gerontological expertise, morals rooted in the early modern period, and postmodern values. The appearance of older persons is read within codes derived from co-existing, merged, and contradictory values hereof.

806. SYMPTOMS, SIGNS AND DISEASES OF TERMINALLY ILL NURSING HOME PATIENTS: A NATION-WIDE OBSERVATIONAL STUDY IN THE NETHERLANDS

M.W. Ribbe, H.E. Brandt (VU University Medical Center, Amsterdam, Netherlands; mw.ribbe@vumc.nl)

Background. Nursing homes (NHs) are less well studied than hospices or hospitals as a setting for end-of-life and terminal care. For more targeted palliative care more information is needed about the patient characteristics, symptoms, direct causes and underlying diseases, and incidence of terminal ill NH patients. These aspects are examined in this study. *Methods.* Prospective observational cohort study in 16 NHs representatives of the Netherlands. All long-term care patients assessed by an NH physician to have a life expectancy of 6 weeks or less were enrolled in our study (n=516). The symptoms-and-signs list was constructed from the MDS-RAI 2.0. The validated Dutch Classification Codes of Diseases for Nursing Home Medicine (CvZ-V) 16 were used for registration of the direct cause of the terminal phase (disorder that directly caused the symptoms on which the NH physician based an estimated life expectancy of 6 weeks or less) and the underlying disease. *Results.* The terminal disease phase of patients was marked with symptoms of low fluid and food intake, general weakness, and respiratory problems or dyspnea. The patients were frequently in a state of somnolence and experienced recurrent fever. Direct causes of these conditions were diseases of the respiratory system (mainly pneumonia), and general disorders (e.g. cachexia, malaise, coma, fever, septicemia). The 2 main underlying diseases of the terminal phase were mental disorders (mainly dementia) and diseases of the circulatory system (e.g. stroke, heart failure). However, regardless of these

two different underlying diseases, symptoms of «(very) little/no fluid intake,» «generalized weakness,» «somnolence» and «cachexia/anorexia» were common in both groups. For patients with mental disorders (mainly dementia) the beginning of the terminal phase was marked with problems of nutritional intake, and they experienced recurrent fever. This group was also most likely to refuse liquid and to develop a (worsening) pressure ulcer. In the circulatory group, this was mostly the presence of respiratory problems and/or dyspnea. Cancer was the underlying disease in only 12% of the patients. Patients with cancer showed a different pattern of symptoms (e.g. generalized weakness, cachexia, tiredness, nausea, loss of appetite, feeling sick) than those without cancer. Hence, we studied for the most a non-cancer population. Per 100 beds per year, 34 NH patients entered the terminal phase. Most patients (82.9%) died within 7 days after inclusion. *Conclusion.* A wide variety of burdensome signs and symptoms are seen in the terminal phase of nursing home patients with fluid and food intake-problems, general weakness, and dyspnea, as the most important. For patients without cancer in Dutch NHs, the terminal disease phase is difficult to predict, and once diagnosed, patient survival time is short. A better identification of the symptom burden might improve the prognostication of life expectancy in elderly patients.

807. OLD MEN LIVING IN THE COMMUNITY: HEALTH, PSYCHOLOGICAL DISTRESS AND SOCIAL SUPPORT

O. Ribeiro¹, C. Pabl¹, A.M. Fonseca² (¹UNIFAI, Institute of Biomedical Sciences Abel Salazar, University of Porto, Portugal, ²UNIFAI, Portuguese Catholic University, Porto, Portugal; oscar-soares-ribeiro@sapo.pt)

Among older adults insufficient social support has been associated both to psychosocial distress and to a decrease in overall general health and well being: while decreased personal ties and poor interaction are potential major sources of stress, supportive social connections and intimate relations are ought to be important sources of emotional strength. Specifically on older men, research has pointed that they are less likely to have supportive social networks and it has been suggested that social isolation may influence the experience of depression. The present study aims to give a broad picture of a representative sample of old men living in a Northern Portuguese community (N=134) and investigate the relationship between health, psychological distress and social support. Participants completed self-report measures of physical health (self-rated health status; presence of long-term illness or disability), psychological distress (GHQ-12) and social support (LNSN). The age range of the sample was 65 to 99 years (mean=73.5, SD=6.16) and the majority of participants were married (84%). Findings revealed that 29% had been diagnosed with a health problem that interfered with daily living, that most participants rated their health as «fair» (54%) and that 22% presented psychological distress (GHQ>4). Most men revealed a good network size of social support (up to 3–4 close family and/or friends) but a lack of trustful and close relationships. Those presenting fewer intimate friends were the ones more likely to present psychological distress. A significant relation was found between those men reporting poorer health and the presence of psychological distress. These results are presented and discussed within a gender lens and considering the society context where these men live.

808. BEST PRACTICES IN PUBLIC HEALTH TRAINING: EVIDENCE FROM FIVE EUROPEAN MASTER PROGRAMMES

R.J.T. van Rijssel (VU University Amsterdam; rjt.van.rijssel@fsw.vu.nl)

Introduction. The PHETICE Project (2005–2008) is funded by the European Commission (EC) Public Health Programme. The overall aim of the project is to make a contribution to the health of European citizens by developing synergy using the experience of colleagues leading European Masters Programmes in specialist areas of public health. The foundations of the Project are built on the experiences of five well-established European Masters Programmes in Gerontology, Health Promotion, Public Health Nutrition, Public Health, and Epidemiology, which have all received investment funding from the EC. Each of the programmes is built upon a comprehensive health promotion model, rather than one of disease prevention. This will help to build consistency with the ideological commitment to the values of equity, empowerment, sustainability and healthy public policy, as formulated within the WHO Ottawa Charter (WHO, 1986); recently reinforced by the Bangkok Charter for Health Promotion (WHO, 2005). The PHETICE Project analyses cross cutting themes within each of the programmes including pedagogical strategies, professional accreditation, core competencies and quality assurance. The Project develops models of best practice, and creates practical education and training opportunities for demonstrating the 'European Dimension' of Public Health in action. The Project focuses in particular on ensuring the participation of colleagues from the New Member States of the EU. In addition, a comprehensive mapping exercise will be carried out with a view to developing a 'State of the Art' database of Public Health education and training opportunities in Europe. The results of the project will be summarised in a set of 'European Guidelines for Public Health' which will be made available through the PHETICE website (www.PHETICE.org). In this presentation results regarding best practices in the five European Master Programmes in the field of Public Health (Gerontology, Epidemiology, Public Health Nutrition, Health Promotion and Public Health) are presented. Curricula of the five European Master Programmes are analysed in terms of commonalities, differences and synergy related to common courses, teaching materials, pedagogical strategies. Lessons to be learned are elaborated, especially with regard to the integration of New EU Member States.

809. MILD COGNITIVE IMPAIRMENT: A FAMILY PERSPECTIVE

K.A. Roberto, R. Blieszner (Virginia Polytechnic Institute and State University, Center for Gerontology, Blacksburg; kroberto@vt.edu)

Mild cognitive impairment (MCI) reflects self-reported changes in cognitive function that do not markedly interfere with work or social relations; it is viewed as a transitional phase between normal cognitive aging and dementia. The purpose of this study was to identify the challenges facing families in which one member begins experiencing mild memory loss. Interviews were completed with 99 memory clinic patients, 99 of their primary family members or care partners, and 57 secondary family members. The care partners were usually spouses/partners (74%); adult children were most likely to be the secondary family

members (77%). Findings suggest that persons with MCI respond in one of three ways. Some patients were *strategists*; their memory loss was apparent to them and they wanted to find out all they could about what it is, why it is occurring, and what they could do about it. Other patients appeared more *ambiguous* about the changes they were experiencing. They did not appear to recognize that they have memory changes and did not understand why they needed to be tested. A few patients appeared *troubled* by their condition. They are not accepting of the memory changes. Care partners reported that their relatives were experiencing memory-related changes that interfere with their daily activities and responsibilities, decision-making processes, and relationships. Their comments suggested that they were frustrated by the continual support they provided for their relative and the changes this has brought to their lives. Secondary family members provided emotional support for the care partners, but typically were not involved in their or the patients' day-to-day lives. They perceived MCI as taking a toll on the entire family and were worried about the future care needs for both the patients and the care partners. Study findings suggest that the existing definition of MCI is not sufficient to capture fully the day-to-day implications of having MCI; rather, there may be a progression of decline within those diagnosed with MCI that involves gradual changes in functional abilities and social relationships. It may be that these subtle changes have gone unnoticed in routine clinical evaluations. Because diagnoses of MCI are likely to become more prevalent as the Baby Boomers move into old age and seek medical evaluation more readily than previous cohorts of elders, it is imperative for researchers and practitioners to collaborate in determining the extent to which families adapt to the changes associated with MCI.

810. COMBINING HEALTHY AND WORKING LIFE EXPECTANCY: A NEW INDICATOR

J.-M. Robine (INSERM, Health and Demography, Montpellier, France; robine@valdorel.fnclcc.fr)

Disability trends at age 65 are now monitored in most developed countries such as in the OECD countries. They are frequently combined with life expectancy to know whether increase in longevity is accompanied by an equivalent increase in life expectancy without disability. Indeed several countries display a clear increase in the number of years expected to be lived with a good functional status. A similar indicator, called working life expectancy, has been sometimes computed to assess the length of the productive life but much less is known about the relationship between increase in longevity and increase in working life expectancy. Taking into account expected financial constraints, it is worthwhile to examine existing relationships between life expectancy, disability level and labour force participation. Using European data, we explore such relationships and develop a new indicator: the healthy and working life expectancy. This indicator will allow comparisons between countries. In particular we explore the existence of a (growing) reservoir of healthy years which can be used to increase the length of the working life expectancy and allow a better social integration of the senior population. This is a crucial challenge for modern societies confronted with the issue of the extraordinary increase in longevity.

811. THE SELF-CONCEPT IN INSTITUTIONALIZED ELDERLY

A.P. Rocha (*Acores, Portugal; paularocha@mail.telepac.pt*)

The way how individuals conceive of themselves and the behaviour that they display in accordance with their self-concept it is important to the elderly well-being especially when they are institutionalized. The purpose of our study was to investigate how older adults who were institutionalized think about themselves. The participants were 65 years and older and have no cognitive deficits, and lived in a retirement home in Açores — Portugal. The data was collected by interview, in which was applied the Tennessee Self-Concept Scale (TSCS), Form C, to 56 residents. As results we have that woman self-concept were more negative when compared with men, but there are differences in the subscales scores, the Personal Self-Concept were the one with the lower score in men and women, but the high score were the Family Self-concept for men and Physical Self-Concept for Women. The knowledge of how older people think about themselves helps the institutional staff to understand some of the elderly behaviour, and it is essential to promote a better care.

812. EPIDEMIOLOGICAL ASPECTS REGARDING VISUAL IMPAIRMENTS IN THE ELDERLY

D.E. Roditis (*Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; elena.roditis@gmail.com*)

In modern era of evidence based medicine, there is growing recognition of the importance of assessing the influence of any disease and treatment on quality of life. The study describes issues generated by visual impairments: physical functioning; «costs» involved; cost-efficient solutions to reduce avoidable blindness. *Materials and Methods:* A sample of 150 elderly was selected based on their sensorial impairments. Some instruments were: Visual Functioning Screening Questionnaire (Horowitz, A., 1998), Vision Functioning Questionnaire (VFQ-25, 2000); PAS Depression Scale (Jorm, Mackinnon, 2000); Stress Assessment Scale; Physic Functioning Scales (Katz and Lawton). *Results:* (1) The modified basic activity is the daily toilet. While all instrumental activities are affected, cooking, house keeping, the ability to manage money and take drugs are most significantly affected. (2) The significant links between health self-assessment / score of visual screening ($r=.232/p=.004$), and health self-assessment / vision self-assessment ($r=.440/p=.000$) show the weight of visual perception in the statement of psychological well-being. Patients with glaucoma, but also those with diabetic retinopathy (less with cataract) must cope with the idea of potential blindness. That is a «cost» in suffering. The distress and the modified social functioning (social isolation, dependency) are shown in VFQ-25: 40% subjects «feel irritated» and «stay at home, most of the time»; 31.3% complain for «the reducing of control on own lives» and «feelings of frustration». The correlation between such perceptions and the stress, evaluated by SAS, was significant ($r=0.33/p=0.004$). (3) Cost-efficient solutions for delaying onset of visual disorders could be screening examinations. Therefore, vascular heredo-colateral antecedents would help in early diagnosis of glaucoma. (The correlation between the two variables has coefficient $r=0.282/p=0.000$). The prolonged therapy with corticoids is a risk for developing glaucoma and cataract ($r=0.215/p=0.008$, $r=0.188/p=0.21$, respectively). Eye disorders may involve a number of symptoms. By the intensity of

correlation: blurred seeing, scotomas, headache, eye pain may indicate a glaucoma; sensation of a foreign body in the eye, conjunctival pruritus and blurred vision may be signs of cataract. *Conclusions:* The work reveals: (a) the influence of visual impairments on the life quality of the elderly observed from a physic, psychological and social viewpoint, and (b) the importance of prevention: primary (early diagnosis through screening), and secondary (periodic assessment of visual function, as well as adequate therapy for cataract, glaucoma, diabetic retinopathy, known to induce avoidable blindness) which are mandatory for preventing or limiting permanent vision loss.

813. MOBILITY AND INTERNATIONAL RETIREMENT TO THE SPANISH COAST

V. Rodriguez¹, **M. Casado**² (*¹Institute of Economics and Geography (CSIC) Pinar 25 28006 Madrid (Spain); ²University of the West of England, Bristol (UK); rodri@ieg.csic.es*)

While elderly migration is hardly a new phenomenon, there has been a remarkable increase in its scale. It was only in the 1960s that international retirement migration (IRM) began to gain importance, due principally to four factors: longer life expectancies, the lowering of the legal age of retirement, the growth and polarization of income, and the accumulation of wealth. The latter has allowed a larger number of elderly people to consider several «post-retirement» options, including international migration and mobility, commonly known as ‘amenity led migration’, which is prompted by the quest for economic and leisure opportunities to achieving a better quality of life. Spain has witnessed a generalized increase in the number of foreign residents from Northern Europe settling in geographical areas around the Mediterranean coast with mild climates and amenity facilities. The migrants’ previous tourist experiences would have informed their search for spaces for retirement, allowing them to become acquainted with the lifestyle and making it easier to integrate when they decide to settle there permanently. This paper has two aims. Firstly, using the latest official statistical data (i.e. 2001 Census of Population and Residential Mobility Survey), this paper will describe the scale and nature of IRM to Spain, its geographical distribution, and some of the associated impacts at the destination level. Secondly, the paper will investigate the mobility patterns of older migrants living in Spain, specifically British and German older residents living in the Costa Blanca, Alicante. This section is based on a survey conducted among 600 foreign older migrants living in the Valencian Region in 2005-6. The paper will discuss the relative importance of the migrants’ individual characteristics on their temporary and permanent mobility patterns, including their links with their country of origin and the pattern of visits from friends and relatives. It is argued that these aspects are of particular importance for the migrants’ well-being and their leisure-based post-retirement lifestyle in Spain.

814. DEPRESSION, HOPELESSNESS AND SUICIDAL IDEATION AMONG THE ELDERLY: A COMPARISON BETWEEN VETERANS AND NEW IMMIGRANTS FROM THE FORMER SOVIET UNION

P. Ron (*University of Haifa, Israel; pitzyron@research.haifa.ac.il*)

The study attempts to compare between levels of depression, hopelessness and suicidal ideation among two

groups of independent and relatively independent elderly in Israel: a) old immigrants from the former Soviet Union (FSU), and b) Veteran persons who live in Israel since 1948 or earlier. The research assumption was that depression, hopelessness and suicidal ideation will be found in higher levels among old immigrants compared to those veterans in Israel. 376 elderly immigrants and 392 veterans participated in the study. Findings show negatively significant differences regarding hopelessness, helplessness and depression among immigrants compared to those veterans. The conclusions of the study indicate the need for paying interdisciplinary attention to the mental health of elderly immigrants.

815. POLITICS OF AGEING IN DENMARK

T. Rostgaard (*The Danish National Institute of Social Research, Copenhagen K, Denmark; tr@sfi.dk*)

This paper presents the politics of ageing in Denmark, looking over emerging major political issues for older people and the political economy of ageing. It addresses macro issues of class, gender and public policy, as well as meso level issues such as the organisational terrain of politics of ageing. Lastly, it focuses on the role of older people as new agents.

816. AGEING IN EUROPE: SIMILARITIES AND DIVERSITIES

G.L. Safarova (*St. Petersburg Institute for Economics and mathematics of RAS, Russia; safarova@emi.nw.ru*)

It is recognized that while the XXth century was the one of population growth, the XXIst century might come out as the one of population ageing. The world is undergoing an unprecedented demographic transformation, and all countries face challenges resulting from the relationships between ageing and almost all spheres of life. In the unifying Europe comparative studies on demographic field present interest both from scientific and applied point of views. The paper aims at analysis of ageing process in selected European countries in a cross-national perspective. Selected countries represent Eastern, Western, Northern and Southern Europe. At the same time they belong to transition and non-transition countries. In turn, considered transition countries represent both post-Soviet states and Eastern European transition countries. To characterize the situation with ageing a number of ageing characteristics of different types (i.e. proportions and age-related indicators) are considered including proportions of the elderly (e.g. 60+, 65+, 80+) in the total population, ageing index, dependency ratios, life expectancies at older ages and others. The study is based on censuses and vital statistics, materials of the State Committee on Statistics of the Russian Federation, the Council of Europe, Population Division of the Department of Economic and Social Affairs of the UN Secretariat, database of the Centre d'Estudis Demogràfics Universitat Autònoma de Barcelona and Human Mortality Database (Max Plank Institute for Demographic Research) are used. Result of the study may contribute to the better understanding of regularities of ageing development in Europe. Showing similarities and diversities in ageing dynamics in different European countries, results of the study may be useful in sharing positive experience in population policy forming.

817. AN INCREASE IN LONGEVITY AND THE INCIDENCE OF PREGNANCY IN FEMALE WISTAR RATS ASSOCIATED WITH A CARROT RICH DIET

N.L. Safrastian, C.H. Castillo, J.M. Pino (*Politechnic National Institute, Medicine School of Higher Learning, Postgraduate and Research Section, Mexico City, Mexico; nilesa10@yahoo.com.mx*)

Introduction. Newborns of women of advanced age (approximately 48–55) have a greater probability of anomalies, which can be avoided only with constant multidisciplinary medical attention during the pregnancy, giving attention to diet, hormone therapy, etc.). *Materials and methods.* In the present study 50 female Wistar rats 60 days of age were employed. Four groups were formed: 1) one consisted of 10 rats with a carrot rich diet and constant exercise, 2) another included 15 rats with a carrot rich diet, but without exercise, 3) the third had 10 rats with a standard animal house diet and daily exercise, and 4) the last group received a standard animal house diet, but without exercise. At 17 months of life (the average life span for rats being 19 to 21 months), 3 rats from each group became pregnant from the same healthy male. The following blood parameters were tested throughout the experiment: complete hematological parameters, coagulation, liver function, glucose, cholesterol, triglycerides, antioxidative defense level of enzymes, catalase, superoxide dismutase, glutathion peroxidase and glutathion reductase. Other factors were considered, such as the general condition, weight, capacity for physical work (a 30 minute run), and reproductive capacity. *Results.* The 3 rats of the first group became pregnant and the fetus did not present any macroscopic internal or external defects. Two rats from the second group presented the same results, while the other aborted all the offspring. The rats from the third and fourth groups did not become pregnant, and were sacrificed in order to observe the uteruses and in this way confirm the absence of pregnancy. Before the pregnancy the rats from the first and second group showed normal blood parameters, with a 3.8 fold increase in the catalase activity and a 2.7 fold increase in superoxide dismutase, during more than one year. On the other hand, the rats from the third and fourth group presented a significant increase in the levels of glucose, cholesterol, triglycerides, transaminases, creatinase (Mb), and coagulation parameters. *Conclusions.* A carrot rich diet increases longevity and reproductive capacity in female Wistar rats of advanced age, probably due to the powerful antioxidant effect of this vegetable.

818. QUALITY OF LIFE OF RESIDENTS IN LONG-TERM CARE INSTITUTIONS

K. Saks (*University of Tartu, Estonia, kai.saks@kliinikum.ee*)

Objectives: To select valid, reliable and free-of-charge instruments suitable for assessment of QOL and QOC in frail cognitively well older persons living in care institutions; to find care-related factors which influence the QOL of cognitively well persons in care institutions; to define key variables for QOL and QOC in institutional care (IC) settings. *Methods:* Review about available QOL and QOC measures, piloting of selected tools in five EU countries. Final database consisted of 435 cognitively reasonably well (MMSE \geq 15) institutionalized clients with all EM-imputed variables. To create models for QoL domains the stepwise linear regression and path analysis were used (using

SPSS-system). Using regression models the reduced list of variables used in MASt was tested and key variables defined. *Results:* Philadelphia Geriatric Morale Scale and World Health Organisation QOL Bref questionnaires were the best tools for assessing QOL in long-term care clients. Original instruments for assessing clients' satisfaction and professional QOC were created. The best possible models describe 30–60% of different domains of the QOL. The leading role has the subjective quality of care that explains about 75% of the variability of the models. The most influential variables in all models were: clean environment, general satisfaction with care, possibility to plan day and having contact with important others. At the same time care documentation quality is an independent factor influencing clients' well-being and satisfaction. Informal care involvement plays important positive role and should be considered as a resource in care planning. *Conclusion:* Assessment of QOL and QOC in long-term care institutions can be performed with reasonably short but comprehensive list of key variables.

819. ELDER ABUSE WITHIN THE FAMILY IN SPAIN

J. Sanmartin¹, I. Iborra¹, B. Penhale² (¹Queen Sofia Centre for the Study of Violence, Valencia, Spain, ²University of Sheffield, School of Nursing, Sheffield, UK; B.Penhale@sheffield.ac.uk)

This is the first investigation realized in Spain on a national level concerning elder abuse within the family. A door-to-door questionnaire designed by the Queen Sofia Center was used. The sample included two different groups: 1,600 elderly people (65 or over), and 800 elderly carers (both resident in the home). The samples were taken following the same demographics as in the general population, in terms of place of residence, sex and age. The information collected (always referring to 2006) includes the existence or not of maltreatment and the typology of different types of neglect, and abuse in all forms: physical, emotional, sexual and financial). It also highlighted certain risk factors; for the victim (who they live with, physical and psychological health, dependency, isolation, etc.) and for the aggressor (work situation, psychological problems, substance abuse, stress, etc.). The survey also included an appreciation of certain aspects of the dwelling and living situation of the elderly person.

820. THE AGE CHANGES OF THE PHYSIOLOGICAL TREMOR FREQUENCY SPECTRE

A. Saulea, V. Minciuna, B. Dragan, S. Lozovanu (National Center of Social-Medical Rehabilitation; asaulea2001@yahoo.com)

Studying the oscillations origin of the locomotor's system distal segments, the clinical application of the accumulated knowledge is very poor, because of a lot of particular factors (stress, age, etc.) that can influence on the tremorometry results. The point of actual studies is the estimation of age changes of the oscillations spectre frequency, detected using the tremorometry based on tenzometry. At the people aged between 18 and 81, about 47 persons, it has been estimated the frequency of oscillation moves of the fingers distal phalanges, based on tenzometry. Hand tremor was detected in right hand's forearm with relaxed fingers. The tremor record was effectuated using the piezoaccelerometers like PAMT-1, which were

fixed on the distal index phalange. The analysis of phalange vibrations shows that at the young people, about 76,6% of oscillations are concentrated in a 7–13Hz frequency segment. Other 17,1% are concentrated in a segment less than 13–50Hz, and only 6,3% of oscillations are detected in a segment less than 7Hz. During all the life, the density of oscillations suffers some modifications, and results that the medial density of oscillations produced by tremor at old people, actually recorded, is about 8,8 times higher than the level of the young people. Some changes of oscillations density were recorded on the hole spectre of frequency: medial density of oscillations in a segment with a frequency more than 13Hz rised about 5,6 times, in the 7–13Hz frequency segment — about 5,9 times; the most important changes were detected in the segment with a frequency less than 7Hz, where the medial density of oscillations rised about 22,4 times. So, the changes detected at the old people, especially, the important rise of oscillations ponder with a frequency less than 7Hz, may be created by rising, in dependence of ages, of incidence of the oscillations moves of locomotor's system pathology.

821. DETERMINANTS OF THE QUALITY OF LIFE OF PEOPLE WITH DEMENTIA: A POPULATION-BASED STUDY IN GERMANY

M. Schaeufele, E. Kunz, S. Weyerer (Central Institute of Mental Health, Mannheim, Germany; Martina.Schaeufele@zi-mannheim.de)

Objective: To determine factors, in particular modifiable factors, influencing the quality of life of people with dementia in the community. *Methods:* The study was part of the large survey «Potential and Limitations of Independent Living in Private Households in Germany» headed by TNS Infratest Social Research. Based on a probability sample of the German population (n = 52,916) which was recruited by Infratest, we contacted all people within the sample who were 60 years of age and older and who screened positively for at least one deficit in a range of activities of daily living (ADL) as well as for cognitive impairment. Different characteristics of the frail person (i.e., mental status, ADL, disabilities) and the living situation were assessed and, if possible, an informant interview was conducted. The assessment included measures of the health-related quality of life (QOL) in people with dementia. *Results:* Of all the frail persons assessed (n=306, attrition: 39%; mean age: 80.2 years; female: 68.6%), n=151 were identified as suffering from dementia according to DSM IV; n=155 did not fulfil the criteria for dementia. A high QOL, defined as frequent activity and positive affect, was determined in one third of the probands with dementia. In multivariate models, the severity of dementia and the severity of non-cognitive symptoms, as well as the proband's gender were independent predictors of QOL. In contrast to this, the impact of motor impairment, use of psychotropic drugs, extent of care needs, and use of professional help on the probands' QOL was less meaningful. Path analytic results revealed various direct and indirect influences of features of the person, the disease, and the care situation on QOL. *Conclusion:* The results provide a basis for the development of strategies to enhance QOL in demented people cared for in the community. Thereby a better assessment and management of neuropsychiatric symptoms in dementia will be essential.

822. THE PERSISTENCE OF AGITATED BEHAVIOURS IN DEMENTIA: A LARGE-SCALE SURVEY IN GERMAN NURSING HOMES

M. Schaeufele, S. Teufel, S. Weyerer (*Central Institute of Mental Health, Mannheim, Germany; Martina.Schaeufele@zi-mannheim.de*)

Objective. Gitated behaviours are common among demented nursing home residents, affecting their quality of life and increasing distress among their caregivers. The aim of this study was to determine the prevalence and prognosis for agitated behaviours in nursing home residents suffering from moderate to severe dementia. *Method.* A prospective survey was conducted based on all residents of 49 nursing homes in the state of Baden-Württemberg, Germany (n=4578). Medication and treatment data together with assessments of dementia, activities of daily living and agitated behaviours (modified Cohen-Mansfield-Agitation-Inventory, mCMAI) were recorded at baseline and 18 months later. *Results.* Cross-sectionally, almost 70% of the residents were found to suffer from moderate to severe dementia. 58.5% of these residents showed agitated behaviours (defined as total mCMAI score >0), in 18.9% these behaviours were rated as being severe (according to German admission criteria for special care units). Mobile demented residents showed behaviours that were rated by nursing home staff as being very time-consuming and distressing significantly more often than did non-mobile demented residents. 75.2% of the demented residents with agitated behaviours at baseline (who were available for assessment at follow up) continued to show at least one such behaviour approximately 18 months later. 37.7% of the demented residents with severe agitated behaviours at baseline continued to show severe behaviour problems at follow-up. Greater cognitive impairment, a younger age, and sustained mobility as well as the use of psychotropic medication at baseline were associated with a higher risk of severe agitated behaviours at follow-up. *Conclusions.* The prevalence and overall persistence of agitated behaviours in demented nursing home residents is high. It is necessary to improve the medical and psychosocial treatment measures for the management of such behaviours in long-term care facilities.

823. AGEING AND SOCIAL EXCLUSION IN RURAL COMMUNITIES: A UK PERSPECTIVE

T. Scharf, B. Bartlam (*Keele University, Centre for Social Gerontology, Research Institute for Life Course Studies, Staffordshire, UK; t.s.scharf@keele.ac.uk*)

Underpinned by a critical gerontology perspective, this paper adopts the concept of social exclusion as a means to explore issues around disadvantage faced by older people in rural communities. With its focus on the structural causes of inequalities in later life, its appreciation of the cumulative impacts of disadvantages faced by different groups of older people, and its value-based commitment to bringing the voices of older people to the fore (Bernard and Phillips, 2000; Holstein and Minkler, 2007), the critical perspective is well suited to the analysis of exclusion amongst rural older people. The paper draws on findings from a qualitative study, involving in-depth interviews with 21 people aged 60 and over living in diverse rural communities of England. Participants were selected, following a screening process, on the basis of their vulnerability to at least one of four forms of exclusion: from material resources, social

relations, services, and the 'community'. The analysis addresses individuals' accounts of the different dimensions of exclusion, explores life course influences on exclusion, and assesses the impacts of exclusion on quality of life. The paper concludes by highlighting the distinctive features of rural social exclusion, and discussing issues for future research.

824. LONELINESS IN URBAN NEIGHBOURHOODS: A UK-NL COMPARISON

T. Scharf¹, J. De Jong Gierveld² (¹*Centre for Social Gerontology, Keele University, UK,* ²*Netherlands Interdisciplinary Demographic Institute (NIDI), The Hague, NL; t.s.scharf@keele.ac.uk*)

Past studies conducted in the United Kingdom indicate that loneliness varies significantly according to characteristics of older people's residential environment, with higher rates of loneliness reported in deprived urban communities (Scharf et al. 2004). This raises important questions regarding potential neighbourhood influences on the quality of individuals' social relationships in later life. This paper examines neighbourhood influences on loneliness in different national contexts, using multiple classification analysis on comparable empirical data collected in the UK and the Netherlands. UK data arise from a survey of 501 people aged 60+ in deprived neighbourhoods of three English cities. Netherlands derive from the NESTOR Living Arrangements and Social Network survey, with a sub-sample of 3508 people aged 60 and over drawn from a nationally representative sample of older people, stratified according to sex and year of birth, living in 11 municipalities. Both surveys incorporated the 11-item De Jong Gierveld Loneliness Scale (De Jong Gierveld & Van Tilburg 1999). In addition to context (neighbourhood) characteristics and indicators of health and social embeddedness, a typology of 8 groups of older persons was developed that accounted for individuals' age, sex, and partner status. Despite significant cross-national differences in terms of the overall level of loneliness, the multivariable analyses show some remarkable similarities between the England deprived areas study and the Netherlands study. Analysis suggests that context data are important in explaining loneliness differences in both countries. While demographic data and social network characteristics are important in reducing some of the variance, when controlling for such influences, the neighbourhood context still remains significantly related to loneliness.

825. AGEING IN CHANGING ENVIRONMENTS: NEGOTIATING PUBLIC AND DOMESTIC SPACE

T. Scharf¹, F. Thomese² (¹*Centre for Social Gerontology, Keele University, UK,* ²*Vrije Universiteit, Amsterdam, NL; t.s.scharf@keele.ac.uk*)

Environmental aspects of ageing continue to represent an important theme in social and behavioural gerontology. Within the context of profound economic, social and cultural changes, older people's well-being is increasingly regarded as being contingent upon the negotiation of the home environment and of the environment immediately surrounding the home. This two-part symposium highlights key concerns arising from the study of ageing in public and domestic spaces of different European nations. The focus is primarily on urban spaces, representing

the environmental context in which most older Europeans live. Each part is introduced with a paper that outlines current theoretical and empirical knowledge in relation to the session's particular theme. Papers in the first part address dimensions of ageing in public spaces, with an explicit focus on 'community', 'neighbourhood' dimensions. In the second part, attention shifts to contemporary issues relating to domestic space and a focus on independence and participation. Common themes in each session are drawn together by an expert discussant. **Symposium 1. Ageing in Changing Environments: negotiating public space.** The 'elected' and the 'excluded': sociological perspectives on place and community in old age (Chris Phillipson, Keele University, UK). Discrepancies between personal income and neighbourhood status: different consequences for the availability of neighbourhood relationships (Fleur Thomése and Dorly Deeg, Vrije Universiteit, NL). Loneliness in urban neighbourhoods: a UK-NL comparison (Thomas Scharf, Keele University, UK and Jenny De Jong Gierveld, Netherlands Interdisciplinary Demographic Institute and Vrije Universiteit, NL). Policy responses to family change in urban Spain: findings from the «Aging in Leganes» study (Ángel Otero, Universidad Autónoma de Madrid, SP). Discussant (Judith Phillips, Swansea University, UK). **Symposium 2. Ageing in Changing Environments: negotiating domestic space.** The home environment and disability-related outcomes in old age: a synthesis of the recent evidence (Hans-Werner Wahl, Heidelberg University, D, Agneta Fänge, Lund University, S, Frank Oswald, Heidelberg University, D, Laura Gitlin, Thomas Jefferson University, USA, and Susanne Iwarsson, Lund University, S). Housing and health in very old age: the impact of control beliefs on behavioural independence (Frank Oswald, Hans-Werner Wahl, Oliver Schilling, Heidelberg University, D, and Susanne Iwarsson, Lund University, S). Dimensions of participation in very old age and their relations to home and neighbourhood environments (Susanne Iwarsson, Maria Haak, Agneta Fänge, Lund University, S, Judith Sixsmith, Manchester Metropolitan University, UK, Vibeke Horstmann, Lund University, S, and Synneve Dahlin Ivanoff, Gothenburg University, S). Preventive home visits for older adults in Danish municipalities. Do they have any effects? (Kirsten Avlund, Mikkel Vass and Carsten Hendriksen, University of Copenhagen, DK). Discussant (Norah Keating, University of Alberta, Canada).

826. AGING: A NEW LOOK INTO AN OLD PROBLEM

S.J. Scherbov¹, W.C. Sanderson² (¹Vienna Institute of Demography and IIASA, Vienna, Austria, ²State University of New York at Stony Brook, Stony Brook, New York, USA; sergei.scherbov@oeaw.ac.at)

In the article by Sanderson and Scherbov published in Nature in 2005 «AVERAGE REMAINING LIFETIMES CAN INCREASE AS HUMAN POPULATIONS AGE» we introduced a new forward-looking definition of age and argued that its use, along with the traditional backward-looking concept of age, provides a more informative basis upon which to discuss population aging. Age is a measure of how many years a person has already lived. In contrast, our new approach to measuring age is concerned about the future. In submitted paper, we are looking at aging in Europe using the concept of prospective age. We arrive to the conclusion, that aging in most of the European countries is not as dramatic as one may conclude using conventional measure of age.

827. FACING CUMULATIVE ADVERSITIES IN MIDLIFE: THE CASE OF RESILIENCE

M. Schmitt, E. Voss, H.-W. Wahl (Department of Psychological Ageing Research, Heidelberg, Germany; marina.schmitt@psychologie.uni-heidelberg.de)

As many studies show, most of the individuals remain relatively healthy when facing cumulative adverse events in midlife. Therefore, the processes and conditions which enable individuals to avoid negative outcomes or regain normal levels of functioning after developmental setbacks are of major interest in psychological research. Based on Staudinger's resilience model, this study aims at investigating different resource systems which may help to prevent negative developmental outcomes. Analyses were based on data from a sub-sample of N=209 middle-aged individuals (born 1950–52) who participated at both measurement points of the Interdisciplinary Longitudinal Study of Adult Development (ILSE) and who reported at wave 2 an accumulation of stressful events in the preceding four years (≤ 7 stressful events). Results show that 71% of the individuals remained mentally healthy while 29% were diagnosed with at least one mental disorder at T2. Although healthy and diseased individuals did not differ in the overall amount of distal and proximal adverse events, individuals who developed mental health problems showed higher amounts of unemployment and other job-related changes, hospitalisation, and problems regarding their social relationships such as increased arguments with spouse/partner, children or neighbours/landlords. Concerning personal resources, individuals who remained healthy despite an accumulation of stressful events scored higher in emotional stability and extraversion and lower in external control beliefs. As to social resources, a higher amount of healthy individuals had an intimate relationship and showed high satisfaction with their family life. Additionally, mentally healthy individuals showed better physical and subjective health. The results accentuate the need for more research on resilience in midlife to foster prevention and intervention of negative developmental outcomes when facing an accumulation of adverse events.

828. ACTUAL DISCUSSION ON QUALITY OF CARE IN GERMAN NURSING HOMES

E. Schnabel (Institute of Gerontology, Dortmund, Germany; schnabel@post.uni-dortmund.de)

Since the introduction of long term care insurance in Germany, the question of quality of elderly care in nursing homes remains a big challenge. Despite a profound growth in knowledge there is still a lack of transparency especially concerning data with regard to the actual provision of care and quality aspects in nursing homes. The lecture reports the results of different studies in nursing homes conducted by the Institute of Gerontology and gives an overview over clinical problems and individual needs of the residents and organisational features. This data is contrasted with the actual provision of care and the design of the care process (qualification of staff, expenditure of time for individual care, organisation of care). The results show, that there is a strong focus on help focusing the activities of daily living covered by the long-term care insurance, whereas psychosocial care and special psychiatric interventions for demented persons are less developed.

829. THE AGE AND MIGRATION BUS — DIALOGUE ON «MIGRATION AND THE ELDERLY»

C. Schneider (CURAVIVA Switzerland, Elderly Section, Bern, Switzerland; c.schneider@curaviva.ch)

Today, migration is a highly topical issue. Social and political changes, not to mention greater mobility, mean that we are now able to travel more easily and widely. For example, Switzerland has a sizeable and varied migrant population, who make an important contribution to the cultural, economic and social diversity of the country. Many of these migrants continue to live in Switzerland long after they have retired. For them, Switzerland has become their home. Following an initiative by the National «Age & Migration» forum, a project entitled «Migration and Age» was launched. A minibus will travel across the country, symbolically linking up those communities in Switzerland where migrants have chosen to settle. The bus will stop off for a few days at around 40 nursing and retirement homes. These institutions will host different events according to the motto «coming together — learning from each other». *Aim of the «Migration and Age» project.* (1) Promoting links between foreign nationals and the Swiss population (2) Mutual learning and exchanging experiences according to the motto «coming together — learning from each other» (3) Raising awareness of the situation faced by foreigners working and growing old in Switzerland (4) Providing information on the services and support available to the elderly in Switzerland. *Target groups.* (1) Nursing and retirement homes (2) Foreign nationals working in institutions providing geriatric care (3) Older people and their family (both foreign and Swiss nationals) (4) Migrant organisations (5) The general public (6) Policy makers. This project is linked to the German and Austrian public campaign for culturally sensitive geriatric services. It receives funding from the federal government's integration budget (Federal Commission for Foreigners FCF, Federal Office for Migration FOM) as well as contributions from the OASI system. The project is managed and organised by the Elderly Section of CURAVIVA, the Swiss association of care homes and social institutions.

830. VANGUARDS OF A BETTER LIFE? LIFE CONCEPTS OF NORTH-EUROPEAN MIGRANTS IN SPAIN

K. Schriewer (University of Murcia, Spain; klaus@schriewer.eu)

In the last twenty years we can observe an increasing welfare-migration which brings pensioners from the north of Europe to the Mediterranean and especially to Spain. Some of them settle at the coast where we can find residential areas constructed especially for these pensioners, others settle in the countryside buying and restoring old houses. The lecture deals with the live-concepts of these migrants and tries to find out how these older people with patterns of very high mobility organize their daily life. It is based on a research project about European pensioners in the Region of Murcia (Spain). The presentation starts with a general description of the frame for mobility in Europe and especially in the Region of Murcia. The second part exposes the different mobility pattern among the north-European migrants regarding the plans and ideas on family life, social environment, intercultural contacts, illness and death as well as concepts of social and territorial belonging («Heimat»).

831. CHARACTERISTICS OF HOSPITAL IN-PATIENT FALLS

R. Schwendimann (University of Basel, Institute of Nursing Science, Basel, Switzerland; rene.schwendimann@unibas.ch)

Background: Hospital in-patient falls are common, with overall fall rates ranging from 2.4 falls up to 9.1 falls per 1,000 patient days, depending on hospital type. Up to 50% of in-patient falls result in injuries, of which 10% are major. Patient characteristics and the risk of hospitalized patients falling vary among clinical settings. *Objective:* To examine characteristics associated with hospital in-patient falls among different clinical departments. Design 5-year retrospective, population based study. *Setting & sample:* Departments of internal medicine, geriatrics and surgery in a 300-bed urban public hospital in Switzerland, including nearly 35,000 hospitalized patients. *Methods:* Analysis of an in-patient incident report database and administrative patient database including descriptive and inferential statistics. Data were summarized using frequencies, proportions, means, standard deviations or medians, then analyzed accordingly using Chi-square and analysis of variance procedures as appropriate. *Results:* Overall, 34,972 hospitalized patients (mean age: 67.3 years; female 53.6%, mean length of stay: 11.9 days) were observed. In total, 2,512 patients (7.5%) experienced at least one fall during their hospitalization (24.8%, 8.8% and 1.9% of the patients from the departments of geriatrics, internal medicine and surgery, respectively). Patient characteristics differed among departments (Table 1). The hospital fall rate per 1,000 patient days was 8.9 falls (geriatrics: 11.7, internal medicine: 11.3, and surgery: 2.9). Of the patients who fell, 64.8% were not injured, 30.1% experienced minor injuries and 5.1% sustained major injuries. Overall, three out of four fell in their bedrooms. Patients fell most often while ambulating (43%) and transferring (35%). Circumstances, consequences and risk factors of those patients who fell in each department are shown in table 2. *Conclusion:* Patient falls in the departments of medicine and geriatrics are common, and their characteristics in relation to time, location, and consequences are similar to findings of other studies. While fall rates varied significantly between departments — likely due to differences in patient case mixes — associated injuries differed only slightly across the clinical departments under study. Given the fact that one in three falls result in at least a minor injury; falls should be regarded as an important safety issue in hospitals, especially for elderly patients with already diminished health status. Attention should be given to identification of patients at risk and effective interventions implemented both to prevent falls and to minimize fall related injuries.

Table 1: Patient characteristics and falls

	MED (n=17,386)	GER (n=2,765)	SUR (n=14,821)	P-value
Female (%)	54.5	72.7	49.1	<0.001†
Age in years*	70.4	83.0	60.6	<0.001‡
Hospital days*	10.8	36.1	8.6	<0.001‡
Fallers (%)	8.8	24.8	1.9	<0.001†
Falls/1,000 pd	11.3	11.7	2.9	<0.001‡

* mean, † Chi square, ‡ ANOVA

Table 2: Circumstances, consequences and risk factors

	MED (n=1,550)	GER (n=663)	SUR (n=299)	P-value
Time of fall (%)				<0.001†
7am–3pm	31.4	38.6	33.4	
3pm–11pm	27.9	34.1	24.6	
11pm–7am	40.6	27.3	42.1	
Location (%)				<0.001‡
Bedroom	77.7	69.5	78.6	
Bathroom	15.0	15.8	15.1	
Other in unit	7.1	14.3	6.0	
Outside unit	0.1	0.3	0.3	
Type of fall (%)				<0.001‡
Ambulating	43.7	41.2	39.1	
Transferring	33.0	40.4	30.4	
Out of bed/chair	20.5	16.4	27.1	
Unknown	2.8	2.0	3.3	
Severity (%)				<0.001†
Minor injuries	31.2	26.8	31.4	
Major injuries	3.8	7.7	6.0	
Risk factors (%)				
Impaired mobility	81	89.9	79.0	<0.001†
Impaired cognition	55.2	55.9	54.8	0.0940 †
History of falls	43.0	69.6	45.5	<0.001†
Narcotic use	37.9	41.6	35.5	0.128 †
Altered elimination	37.5	44.5	31.5	<0.005†
Impaired vision	29.2	36.0	38.8	<0.007†
Unsafe footwear	30.2	22.8	24.0	0.001 †
Psychotropic use	21.5	37.6	18.4	<0.001†

* mean, † Chi square, ‡ ANOVA.

832. THE ROLE OF DEATH IN THE SPIRITUAL LIFE OF MANKIND

V.N. Shabalin (*Russian Research Institute of Gerontology; shabalin.v.n@mail.ru*)

The subject of death is one of the basic subjects in the spiritual life of mankind. There may be singled out three main types of attitude towards death. To the first one belong materialists. They believe that life is a short-term existence of a protein body and with the destruction of this protein body inevitable death comes. Another group prophesies that after death a human soul moves either to hell or paradise. And the third asserts that a human person lives not only once. Practically every great thinker thought and wrote about death. The founders of religions, of philosophic teachings, leading figures in biology, arts and literature studied the problem of death. Mystery of our «existence» before birth and after death causes everlasting irreconcilable antagonisms between the sphere of our mind and our emotional sphere. No matter what science says but belief and hope that we and those who were dear to us do not leave this world absolutely and forever are constantly smouldering in the minds even of the most advanced materialists. Even such militant materialist as Engels showed some doubt concerning the problem of absolute biologi-

cal death. He wrote that death is either decomposition of an organic body leaving nothing after itself but chemical compounds that used to constitute its substance, or it leaves after itself a certain living principle, something more or less identical to the soul that outlives all living organisms not only a human person. The word «death» has a lot of meanings, and not all of them are colored dark. Realization of death has a deep and powerful influence upon the organization of the life of a person. Great German philosopher Friedrich Nitzsche imagined death as a constant pairing partner of a man at the battle field of life, stimulating a person to exert all his vital energy. Martin Heidegger believes that realization of death makes a certain background upon which the existence itself and time get a deeper sense. Up till now the truth is still foggy and a scholar is to analyze thoroughly everything that seems to be truthful and false, real and imaginary.

833. PHYSIOLOGICAL SENESCENCE AND THE EFFECT OF NUTRITION WITH PARTICULAR REFERENCE TO RAJASTHAN, INDIA

M. Sharma, A.L. Bhatia, S. Patni (*University of Rajasthan, Jaipur; dhanju5@yahoo.com*)

Ageing is associated with reduced energy intake and loss of appetite. Physiological changes associated with age, include slower gastric emptying, altered hormonal responses, decrease basal metabolic rate and altered taste and smell also contribute to lower energy intake. Other factors such as marital status, income, education, socioeconomic status, diet related attitude and beliefs likely play a role as well. Many differences exist between the two gender i.e. biological, endocrinological, sociological, and also behavioral, which often depend on age. *Objective:* the aim of this study was to find characteristic difference between nutritional habit of elderly men and women to promote the healthy ageing. *Methods:* 126 elderly people (72 men and 54 women) of age more than 60 years were consequently selected from the district Bharatpur. A self managed questionnaire was filled in on life style and eating habits, including a food frequency questionnaire. Medical checkups, registration of anthropometrical parameters were also performed. *Result:* the meal frequency was increased during the ageing in both the gender. The fluid intake was low, especially in females. Milk and diary products, fresh fruits and vitamin supplement were consumed more frequently by men. The energy ratio of male and female is 9.75 vs 8.76MJ. Alcoholic beverages were consumed more and frequently by men whereas tobacco chewing is found in both the genders. The increase of body weight from youth to elderly was greater in women (15.04 vs 11.02 kg). *Conclusion:* high energy intake for decades lead to over weight in both genders (BMI>29).

834. WELL-BEING AT HOME ASSISTANCE AND SOCIAL CONTACTS

S. Sigurdardottir (*Department of Social Work, Faculty of Social Sciences, University of Iceland; sighsig@hi.is*)

Objectives of the study. The purpose of the study is to gather information on the attitudes and life conditions of elderly people living in their homes in Reykjavik the capital of Iceland. The purpose was also to build up a basic knowledge on the aspects that contribute to their well-being in old age. The value of social contacts and communi-

cation with family and friends was observed and also how the services offered by the authorities can be utilized by the recipients. The purpose is furthermore to find out how the elderly feel about different housing arrangements and what items are considered essential to be able to continue living at home. *Method.* In the study a qualitative method was used. Interviews in focus groups were conducted, with four to nine people of the age of 66 to 90 in each group. The groups were seven in all, four female groups and three male groups. The total number of participants was 46. *Results and Discussion.* The older people consider security a necessity, to have access to appropriate assistance when it is needed. In the analysis of the interviews it became evident that many considered specially designed apartments for the elderly a good option. Those living alone singles, widows and widowers seemed to be more in favor of such apartments and considered them safer to live in. The participants frequently complained that contact with family was too little but some admitted that the elderly could also take the initiative of communication. Most of the participants supported the idea that the elderly should be permitted to work longer than to the 70th birthday. The importance of having a role in life was stressed and also to have some special tasks and responsibilities. These results will serve as a basis for continued research on the attitude and wishes of the elderly staying in their homes. It is of great importance to find out from the elderly themselves what they want and what they need to be able to enjoy a normal life in their homes. Only when we know their answers we can effectively adjust the services.

835. CARE-RELATED QUALITY OF LIFE OF PEOPLE WITH DEMENTIA

A.J. Sixsmith (University of Liverpool; sixsmith@liv.ac.uk)

Cognitive impairment due to age related dementia such as Alzheimer's disease will present considerable challenges to the health and social care services because of population ageing. Cognitive impairment also presents challenges in terms of developing frameworks for evaluating the quality of care and its impact on the lives of clients and patients. For example, approaches to assessing quality of life for people with dementia are fairly still conceptually and methodologically weak. The paper presents some of the specific approaches adopted within CareKeys for evaluating the quality of life of people with dementia. The results from analysis of a subgroup of demented clients from the CareKeys database are also presented. The QUALID instrument was used to assess quality of life outcomes in people with dementia. The QUALID instrument was used to assess quality of life by third party informants (care providers). Administration of QUALID was determined through screening respondents primarily using the Mini Mental State exam. A subgroup of 394 clients with moderate or severe levels of dementia from the CareKeys combined database was included in the study. A key aim of the research was to define key measures of subjective well-being for the client group. This involved the translation and back translation of QUALID to produce versions in 4 other EU languages as well and English. The paper presents the results of the validity testing of the QUALID. Comparison indicated a strong but imperfect correlation between the scales indicating they were measuring related but non-identical phenomena (depression and well-being).

Cronbach's alpha coefficients of 0.76 and 0.81 for Cornell and QUALID respectively indicated strong internal consistency. Analysis of data indicated that 19% of the subsample lived at home, while 81% lived in residential or nursing home care, indicating the very significant role of institutional settings in the long-term care of people with dementia. The chapter provides descriptive statistics in relation to input factors (person needs and characteristics and care situation) and output factors (well-being etc.), disaggregated in terms of country and living situation. Exploratory factor analysis indicated a two factor solution for describing well-being in dementia, with factors relating to physical and emotional well-being. Regression analysis was used to identify key predictors of well-being in dementia.

836. THE INDEPENDENT PROJECT: DEVELOPING TECHNOLOGIES TO ENHANCE THE QUALITY OF LIFE OF PEOPLE WITH DEMENTIA

A.J. Sixsmith (University of Liverpool; sixsmith@liv.ac.uk)

INDEPENDENT was an inter-disciplinary project to explore the potential of technology and design solutions to enhance the quality of life of people with dementia, to help them to live independently, to empower them without compromising their rights or privacy. This paper describes the user-focused approach and methodology devised within INDEPENDENT to drive the technology development and to ensure that any subsequent devices and systems were grounded within a thorough understanding of the needs, preferences and desires of potential users. A key aim was to take into account the everyday realities within which people with dementia lived, and the paper outlines an ecological model of quality of life as a guiding framework involving factors associated with the person, context, everyday activities, personal meanings and well-being. The paper describes the user-driven research and development process to explore the problem area, to specify a «wish list» of opportunities where technology interventions could help to improve the quality of life of people with dementia and identify and develop possible technology solutions. The project developed two technologies based on this process. An easy-to-use music player was developed to allow people with cognitive impairments to have better access to listening to music they enjoy. A system called «window on the world» was devised to enhance social participation by using video technology to link a person at home with the wider community and with their families. The potential of two other technologies was evaluated in feasibility studies with end users: a conversation prompter; and a system for supporting activities of daily living. The results of field trials and feasibility studies are presented.

837. ELDERLY PEOPLE AS SOCIALLY DISADVANTAGED IN POLAND, LITHUANIA AND FINLAND

M.A.K. Slovenko (University of Warmia and Mazury in Olsztyn, Poland; slovenko@wpl.pl)

Nowadays many groups of people have to deal with difficult situations and social problems, a lot of people are discriminated, socially disadvantaged and socially excluded. Social exclusion, which can be described in sentence «who is in and who is out», is a process of marginalization and isolation. One of the groups which often become socially disadvantaged and excluded is the elderly. Today

we can mention in some part about –globalization of ageing» — the whole world is ageing. Older people are the only growing segment of Europe's population. They are important consumers and contributors to the economic and social lives of the European countries. As citizens, they should share the same rights as people of other ages to access to every part of our society. Yet, the reality of life in Europe is that older people face barriers in some of the most basic areas of life (areas which other members of our community can access at will — just because of their age): education and training, health care services, insurance and other financial services, housing, volunteering and community activities, social, cultural and political life, marketing and the media, public spaces, transport and modern technologies. It is not a comprehensive list but it seeks to highlight rather general areas of life from across the different European countries where older people face discrimination. In paper I want to fix my attention on age discrimination and on elderly people as excluded group in Poland, Lithuania and Finland. I want to present situation of older people in areas of life mentioned above. Age discrimination blights the lives of older people, some of its examples are inconveniences to older people, but others are serious and can jeopardise health, income and living standards. In Poland, Lithuania and Finland ageism has both similarities and differences. All these countries deal with some exclusion of elderly people. In Poland, Lithuania and Finland the elderly have similar experience related to their age. In all these countries (and maybe on the whole world) people when they are growing old they begin feel uneasy, useless, dependent, experience less social roles, status in work, family and in society. The elderly persons can hardly adapt immediately to changing very fast nowadays life in all these countries. In Poland, Lithuania and Finland old people face problems in basic areas of life; they experience social, economic, health and psychological problems, etc among other things. One of the differences between these three countries is that economic problems more often have Polish and Lithuanian elderly persons than Finnish. In addition, support which is offered for old people in Finland is better than in Poland and Lithuania in spite of their efforts. More similarities between Poland and Lithuania than Finland can be notice. Intensity of discrimination is related to situation in some country; Poland and Lithuania have similar historical and economical backgrounds and that's why nowadays situation (also situation of the elderly) is similar in these countries. The elderly people experience age-based discrimination in these countries, but intensity of this phenomenon is the weakest in Finland. Today a vision of a society for all ages where people do not face discrimination on the basis of their age and where people of all ages can play a full and active role is more and more essential. In an ageing society, and in a European society of increasing diversity and mobility, it is need a cultural and policy framework which breaks down barriers to participation rather than erecting and permitting them, and maximises the ability of individuals to participate in economic and social activity, whatever their personal characteristics. The use of age as a limiting factor for access to goods, facilities and services will become increasingly difficult to justify. Poland, Lithuania and Finland and whole Europe have yet to come to terms with its changing demography and recognised that in an ageing society older people will be crucial to the economic and social development of

Europe — as consumers, contributors and citizens. Poland, Lithuania and many other countries have yet to develop a strategy where the elderly will be regarded with respect and treated as equal members of society in which old age won't be treated only as a difficulty and problem.

838. VisAge: A NEW COMMUNICATION SERVICE TO KEEP THE BOND BETWEEN FAMILY MEMBERS ACROSS GENERATIONS

S. Smidtas¹, A.A. Yartseva² (¹Association VisAge-1901, France, ²University of Evry, France; visage@sergi5.com)

Background: Social isolation is a predictor of morbidity and mortality in older people. Families in Europe increasingly have one or more members living outside of the family household, but many people don't want to lose the bond between family members when they live apart. Care for elderly persons with disabilities is usually characterized by fragmentation, often leading to more intrusive and expensive forms of care such as hospitalization and institutionalization. *Methods:* An environmental scan was conducted, which focused on organizational, human resource, clinical and technological issues. Then, we developed a web-based home welfare and home care services support system using VisAge screens connected to the Internet, which employs a web camera and a keyboard, used by the elderly people as the entry device for their care requests and communication with their families. The VisAge screen sends the image of a part of the elderly person living room to the client's web page, which can be accessed by his family members, as well as transfers the service requests to our partners providing the home care services. In a prospective study, 5 women (mean 80 years) and 16 of their natural helpers (mean 56 years) completed objective and subjective assessments of functioning and participation, and provided personal information. Assessments were individually conducted in a face-to-face interview situation with the researcher. The outcomes included health status, satisfaction with care, caregiver burden, and out-of-pocket expenses. *Results:* Assessments revealed the frequent involvement in a wide range of communication activities through the VisAge screen, variable social network size and social activities participation. The VisAge screen service was designed based on the inter-human interaction approach, and the acceptability of this system was verified by a field test. Accessibility was increased for health and social home care with increased intensification of home health care, as well as the social participation. Satisfaction was increased for caregivers with no increase in caregiver burden or out-of-pocket costs. *Conclusion:* We have developed for family and social services use a system called VisAge and aimed at fostering a feeling of connection between people and maintaining their social relationships through the use of the Internet. We have field tested this system with family members living apart, and our interviews of users have shown that the users' family relationships are significantly improved by use of this system.

839. AGEING AND PLACE IN DEPRIVED URBAN NEIGHBOURHOODS: ANGLO-CANADIAN COMPARISON

A.E. Smith (Research Institute for Life Course Studies, Keele University, Staffordshire, England; a.e.smith@appsoc.keele.ac.uk)

'Ageing in Place' is generally viewed to be optimal for the process of ageing. However, this proposition has

traditionally been based on contextually and conceptually narrow research. This paper presents findings from an empirical study that examined the experience and expression of 'ageing and place' in deprived inner city neighbourhoods of England and Canada. A key question concerns the degree to which particular environments that present multiple risks (e.g. high crime, poverty, poor housing) test the optimality of ageing in place. Data were collected using a mixed qualitative approach, encompassing discussion groups, face-to-face interviews, and participant photographs and written text. Discussion groups formed part of an explorative phase where research questions and terminology were tested, and knowledge of neighbourhood issues gained. Participant photographs and text enabled the direct involvement of older people in the construction of knowledge related to 'place and ageing' and contextualisation of the neighbourhood through their eyes. Fifty-two face-to-face interviews represented the main element of data collection. Analysis was in part inductively driven by the literature (i.e. drawing on the approach used in classic studies by Lawton and Rowles). Findings revealed similarities in cross-national results associated with: the environmental experience of older people; factors underlying 'place and ageing'; and in the relationship between individuals experience of 'place and ageing' and well-being. Inductive analysis of interviews revealed three environmental categories to which people belonged. These were termed environmental *comfort*, environmental *management* and environmental *distress*. Results reveal some similarities to previous research on factors underlying 'place and ageing', such as the importance of physical, social and historical attachment (Rowles 1983; 1993). However, other variables, such as life-course factors, religiosity/spirituality and public spaces, were also found to be important. The research found that the relationship between personal competences and environmental pressures, and well-being are not always unidirectional. This suggests that the person-environmental relationship is complex and might be mediated by religion/spirituality, life course factors and/or temporal dimensions. The similarity of results between England and Canada, suggests that these findings might also be relevant in other countries sharing similar characteristics. In addition, understanding the relationship between 'place and ageing' and how this leads to a desire or rejection of ideas of ageing in place and place in ageing, has important implications for national housing and neighbourhood policies and fits with current international discourse and concern around environmental sustainability.

840. THE UK GOVERNMENT APPROACH TO TACKLING SOCIAL EXCLUSION THROUGH THE LIFE COURSE

A.E. Smith (Social Exclusion Task Force, Cabinet Office, London, England; allison.smith@cabinet-office.x.gsi.gov.uk)

Tackling social exclusion has been a key area of social policy in the UK since the current Government (Labour) came to power in 1997. In the last 10 years significant gains have been made in improving the life trajectory of those suffering persistent and entrenched exclusion. This presentation will define what social exclusion is, who is affected by exclusion, and policy approaches to tackling and measuring exclusion through the life course. This area of policy has sought to address both the groups affected by disadvantage (e.g. older people), and environmental con-

ditions that present barriers to inclusion. In policy terms there is a focus around addressing not only the *stock* of those currently experiencing exclusion but understanding and preventing the *flow* into exclusion. Given that the needs of individuals suffering with exclusion differ through the life course, policy solutions have been generally tied to four cohorts — early years and children; young adults; working age adults; and older people; Such that the exclusion early in the life course tends to be more dynamic in nature as individuals might move in and out of employment and/or as health improves versus the more enduring and entrenched nature of social exclusion at the later end of the life course. While still adhering to principles of *progressive universalism* the policy approach to tackling exclusion has principally involved the reform of services to deliver progressive, preventative and personalised services that reflect the diverse and potentially complex needs of those suffering from exclusion. This presentation will examine the role of 'the sure start approach', amongst other policy developments, aimed at tackling the needs of those most disadvantaged. This presentation will also show how the Government aims to measure progress on tackling social exclusion.

841. LONGITUDINAL STUDY OF AGEING IN A RETIREMENT COMMUNITY — LARC

A.E. Smith, M. Bernard, B. Bartlam, T. Scharf, J. Sim, J. Hislop (Research Institute for Life Course Studies, Keele University, Staffordshire, England; a.e.smith@appsoc.keele.ac.uk)

Retirement communities are a relatively new accommodation and care option in Britain, and policy makers and providers are sensitive to the possibilities they provide to accommodate both 'fit' and 'frail' older people. As yet, we know comparatively little about what it is like to live in such communities over time; whether they can indeed cater adequately for a wide spectrum of needs and abilities; and if they provide acceptable solutions to housing needs, care needs or both. This poster outlines a study exploring Anchor Trust's new flagship retirement development in the UK: Denham Garden Village. Begun in May 2006, the study is the first 3-year phase of a 10–15 year longitudinal project. The mixed method approach, building on previous work by the Keele team, will explore issues such as how the needs posed by increasing frailty amongst residents will be met; the potential impact of dementia and how it can best be managed over time; attitudes amongst residents towards mixed tenure; and the extent to which a care centre might need to be provided in the future. In addition, the research will explore residents own experiences of daily life in such a community.

842. «PIPAUIDA» — INTERVENTION PROGRAMME TO PROMOTE CAREGIVER'S AUTONOMY IN THE ADMINISTRATION OF THERAPEUTIC TO ELDERLY IN THE AMBULATORY SERVICE

M. Sotto Mayor¹, I. Varandas², C. Paul¹ (¹UNIFAI — Instituto de Ciências Biológicas Abel Salazar, Universidade do Porto, Portugal, ²Hospital Magalhaes Lemos, Psicogeriatrics, Porto, Portugal; mgsottomayor@netcabo.pt)

«Pipacuida», the intervention programme to promote caregiver's autonomy in the administration of therapeutic to elderly in the ambulatory service, took place in 2006 by attending dementia patients who were in the house

call programme of the psychogeriatric service of the Magalhães Lemos Hospital (HML) in Porto, Portugal. Following are the characteristics of a longitudinal study. It included 100 caregivers, mostly women, married, with low academic education and with little professional differentiation who are responsible for a relative with dementia. This programme's objectives are: (1) Assess caregiver's mental and functional compromises; (2) Identify social and family supports; (3) Implement strategies that promote quality of life for the elderly with dementia; (4) Improve the caregiver's functional autonomy; (5) Inform the caregiver about therapeutic preparation. PIPACUIDA's results reveal that the majority of caregivers have functional autonomy without cognitive compromise, have consistent family support and have improved their task competency of preparing the therapeutic after an intensive training period. The programme's authors highlight the importance of health service vigilance, of evaluation/intervention, of risk detection and of preserving the functionality in order to guarantee quality of life for the caregivers and the dependent elderly in their residence.

843. GENDER AND IMAGES OF AGEING: AN EXPLORATORY STUDY ON THE PORTUGUESE POPULATION

L. Sousa, M. Cerqueira, D. Figueiredo (University of Aveiro; lilianax@cs.ua.pt)

This exploratory study aims at contribute to a better understanding of the images of ageing, considering gender. Therefore a questionnaire was administered to 100 subjects. Main findings suggest that: «sadness and vulnerability» is an image shared by both men and women towards older men and women, while «dependent and impaired» is associated by both genders to an old man, but is associated by women only to an old woman.

844. COMPREHENSIVE GERIATRIC ASSESSMENT IN PATIENTS AGED 70 YEARS IN ITALY

L. Spazzafumo¹, C. Sirolla¹, M. Sebastiani², The CGA Study Group³ (¹Statistical Centre INRCA, Ancona, Italy, ²Department of Health INRCA, Ancona, Italy, ³INRCA, Italy; l.spazzafumo@inrca.it)

Background: The aim of the study is to evaluate the performance of Comprehensive Geriatric Assessment (CGA) in patients aged 70 years and over and the role of CGA in the management of the older patient admitted to the care geriatric ward. **Methods:** We enrolled 6200 patients, aged 70 years and over, from January 2005 to December 2006 admitted INRCA Hospitals (Ancona, Fermo, Appignano, Casatenovo, Cosenza, Cagliari and Rome). Patients had an average age of 81,1±6,2 years and 52,7% were females. The CGA of INRCA study included seven scales which look for the domains of health needed for a multidimensional approach of older patients: composite measures of illness severity and comorbidity (CIRS Scale), cognitive status and psycho-emotional state (Mini Mental Examination Test and Geriatric Depression Scale), functional ability (BADLs and IADLs), measure of generic health-related status (ISF12), social support (Lubben Scale) and socioeconomic information. Medical evaluation was classified using medical diagnosis discharge codes (ICD-9-CM). **Results:** The 70% of patients showed high comorbidity score and the majority of patients had also high illness severity score (from 40% to 70%). Patients showed a weakened cognitive status (mean MMSE 22,8±5,2) and they

were mildly depressed (mean GDS 4,9±3,6). The 27,3% and 53,7% of patients needed assistance in the basic and instrumental activities of daily living. The health-related quality of life was not well for all patients (mean PCS 33,4±9,6 and mean MCS=42,1±11,2) and women had a worse mental health-related quality of life (t-test=3,33 p<0,001). The Lubben scale showed that patients had a good environmental assessment (mean 27,7±9,4). The correspondence analysis was made to compare information of CGA evaluations coming from different INRCA Hospitals, helpful in development of care plans. **Conclusion:** The CGA provides multidisciplinary information on the mental health and physical assessment of elderly patients and it is easy to apply by operators in the acute care geriatric wards. This tool might encourage more providers to add the CGA to routine health care with the aim of collecting homogeneous data useful for the management of elderly patients.

845. «LET'S GO FOR A WALK» — EFFECTS OF MEASURES TAKEN (IN THE OUTDOOR ENVIRONMENT) TO INCREASE ACCESSIBILITY, SAFETY AND MOBILITY FOR OLDER PERSONS

A. Stahl¹, S. Iwarsson (Lund University; agneta.stahl@ft.lth.se)

Purpose. The aim of the study was, by fully integrating the older persons in a process-oriented study, to identify and prioritize concrete measures for implementation for increased accessibility, safety and mobility in a residential area in a medium-sized Swedish town. After a 3 year period of implementation, the aim was also to evaluate the effect of the measures taken. **Method.** The study was built up of three sub-studies, before and after implementation, applying different methodologies (postal questionnaire survey, participant observation and focus group interview), thus cross-validating the findings. **Results.** General prioritized measures were: separation of pedestrians/cyclists, lower speed limits, better maintenance and specific measures were: wider sidewalks, curb cuts, even surfaces at sidewalks. The evaluation showed that the measures taken decreased experienced specific problems in the outdoor environment as well as experienced anxiety and fear for falling and fear of being involved in an accident when walking in the area. Most measures taken were also highly valued. **Conclusion.** The prioritization of measures by the older persons gave knowledge to the highway engineering department about the importance of small details in contrast to large infrastructure measures when planning for an accessible and safe outdoor environment. Even if the attitudes towards the measures taken were very positive, the measures taken did not seem to improve the outdoor mobility to any large extent. One explanation to this particular finding might be that the older persons in the study had aged 4 years and acquired more functional limitations between the pre- and after study.

846. THE «GERIATRIC HOME HOSPITALISATION SERVICE MOBILE TEAM» IN THE EMERGENCY DEPARTMENT

M.F. Stasi, N. Aimonino, V. Tibaldi, R. Marinello, M. Rocco, D. Calo, M. Boscarino, M. Molaschi (University of Torino, Italy; mariafrancesca.stasi@unito.it)

The Geriatric Home Hospitalization Service (GHHS) is operating in Torino at S. Giovanni Battista Hospital since 1985. GHHS provides diagnostic and therapeutic treatments by health care professionals, in the patient's home, of a condition that otherwise would require acute hospital

in-patient care. A quick admission to hospital is possible for examinations or interventions that are not possible to carry out at home. GHHS normally operates 12 hours a day (from 8 am to 8 pm), seven days a week. At night our Regional Emergency Unit («118») can be contacted. For selected patients, medical staff is on-call 24 hours a day. The team is multidisciplinary and consists of geriatricians, nurses, physiotherapists, social workers and counsellors. Since 2001, a close collaboration has been started between GHHS and the Emergency Department (ED) of our hospital. Now, about 60% of our patients are referred from the ED, 25% from hospital wards and 15% from Specialists or General Practitioners in the community. Very important is the relationship between the ED team and the «GHHS mobile team» consisting of a geriatrician and a nurse. By using a multidimensional case sheet, the «GHHS mobile team» carries out an assessment of the patient and his caregiver to evaluate the possibility of hospitalization at home and in order to give information on GHHS. In the ED all the necessary diagnostic tests are provided and then the patient moves home by ambulance, sometimes within a few hours. Entry criteria for GHHS are: informed consent of patient and caregiver; stable, diagnosed medical conditions needing hospitalization but not expected to require emergency intervention; appropriate care supervision; telephone connection; living in the hospital catchment area (southern part of the city). Many services or treatments can be provided at home: blood tests; medications; ECG; echocardiograms and internistic echographies; spirometry; pulse-oximetry; oxygen and other respiratory therapies; intravenous therapies, including fluids, antimicrobials, blood transfusion and cytostatic drugs; surgical treatment of bed sores, etc... Until now about 10000 admissions have been recorded. In 2006 we recorded 454 admissions, 7982 nursing visits and 3911 medical visits. Mean age of patients was 82.8 ± 9.4 years. Mean length of stay was 19,3 days. Most important diagnosis on admission were: cardiac and cerebrovascular disease, respiratory disease, infections, cancer. GHHS is a feasible alternative care to hospital for frail elderly patients. The collaboration between GHHS and ED improve the efficiency and the effectiveness of health interventions for acute elderly patients.

847. MODELS OF MORBIDITY: COMBINING DIAGNOSES AND SYMPTOMS. IMPLICATIONS FOR MORTALITY AND LIFE SATISFACTION IN 80-YEAR-OLDS

I. Steij Stalbrand¹, T. Svensson², S. Elmstahl³, V. Horstmann², B. Hagberg², O. Dehlin², G. Samuelsson² (¹Lund University, Dept. of Psychology and The Vardal Institute, Lund, Sweden, ²Lund University, Dept. of Health Sciences, Lund, Sweden, ³Lund University, Dept. of Health Sciences, Malmö, Sweden; Ingela.Stej-Stalbrand@psychology.lu.se)

Morbidity (certain combinations of diagnoses and symptoms) is analysed in relation to mortality from age 80 to 95 in a cohort born in 1908. It can be shown that having or expressing symptoms is just as harmful as being diagnosed with disease. The mortality risk doubles (HR 1.8-2.2). Persons living with several diseases but reporting few symptoms to a higher degree than others use active coping strategies and have better life satisfaction. Different models (different combinations of diagnoses and symptoms) to describe morbidity and multimorbidity and its implications on life satisfaction are presented within cohorts born

in 1908 and 1913. Diagnoses per se showed to be a poor predictor of life satisfaction; however symptoms as well as certain combinations of diagnoses and symptoms were. It is important to consider the complex associations between objective and subjective health when, for example, planning interventions with purpose to increase or retain life satisfaction.

848. PSYCHO-SOCIAL-MEDICAL COMPARATIVE FINDINGS FROM «KLAIPEDA 80+» STUDY

F. Stepukonis (Klaipeda University, Lithuania; faustep@balticum-tv.lt)

The gerontological study «Klaipeda 80+» aims to investigate the impact of medical, social and psychological factors on the aging process in a total population of Klaipeda city inhabitants 80-year olds and older. The study method is multi-disciplinary, longitudinal-sequential, cross-cultural — the «Klaipeda 80+» study is a member of the international «The 80+ Studies» consortium, with studies in 3 European countries — Sweden, Iceland and Lithuania. The «Klaipeda 80+» population is a cohort of 80-year-olds (200 participants), born in year 1923, living in Klaipeda city. In the year 2008 it is intended to investigate a new cohort of 80-year-olds. Study findings. Psychological findings showed relatively low scores for verbal understanding. Tests of spatial cognition were executed much better compared with verbal understanding and cognition tests. Executing recognition tests, where stimuli materials were well known objects and actions, study participants demonstrated relatively good abilities. Most 80 year-olds; had good sensoric and motoric abilities or only minor support was needed, and live independently in their own living environment. Passive reactions — consolation, sorrow — are the dominating coping strategies in crisis situations. Most of the 80 year-olds are introverts. Social findings showed that most of the 80 year-olds live in relatively commodious flats. Those, needing assistance, receive it from family members, living together or separately. Those, living alone, are subjectively well adapted to own health status. Quite good psychological adaptation is testified by mostly positive valuations of professional life and retirement period. Most participants evaluate communication with children, relatives, and friends as being sufficient. Significantly more 80 year-olds evaluated their own personality as being –optimists«, compared to –realists«, and even more compared with –pessimists«. Medical findings showed that most investigated person have overweight, more than half of them have hypertension, but most of them are not heavily suffering from age-related illnesses. Overall somatic health status is fairly good, physical health disorders could be treated. Conclusion: Health examinations show fairly good health status of Klaipeda 80 year-olds in investigated psycho-social-medical spheres.

849. RETIREMENT IN TRANSITION: CHANGES IN RESOURCES FOLLOWING RETIREMENT OF TWO COHORTS OF OLDER DUTCH WORKERS

N.L. Stevens, R. Cozijnsen, T. van Tilburg (Social Science Faculty, Amsterdam, The Netherlands; nl.stevens@fsw.vu.nl)

For many years the Netherlands had one of the lowest employment rates in Europe for older workers due to favorable early retirement schemes designed to make jobs available for younger workers. However, growing aware-

ness of the high costs of this policy led to major reform in pension policy in the mid 1990s. This study focuses on the consequences of changes in retirement policy for two important resources related to adjustment to retirement, income and health. Recent policy, directed for at delaying retirement should have an influence on the level of resources available when people retire. This study involves a comparison of two cohorts of older workers and retirees drawn from two nationally representative samples. One cohort of 55–65 year olds was studied in 1992–1996 when conditions favored early retirement. The second cohort of 55–65 years old was followed in 2002–2006 when pension policies promoted working longer. The following hypotheses were tested: 1a) Those belonging to the later cohort will have experienced a greater decline in income following retirement compared to the early cohort, due to less favorable retirement policy. 1b) Retirees in the early cohort will be healthier at retirement than the later cohort since exit routes related to disability have been blocked. 2). Differences in resources between those who have retired and those who continued to work will be greater among members of the later cohort in comparison to the early cohort, due to selection effects. Results partially confirm these hypotheses and form the basis for predictions for future consequences of current retirement policy.

850. COHORT COMPARISON STUDY ON COGNITIVE FUNCTIONS AMONG 65–69-YEAR-OLD PERSONS IN 1988, 1996 AND 2004

T. Suutama, I. Ruoppila (*University of Jyväskylä, Finland; timo.suutama@psyka.jyu.fi*)

Cognitions and metacognitions among three cohorts of 65–69-year-old persons living in Jyväskylä, central Finland, were compared in the study. The earliest born cohort (n=362) participated in an interview study of the Evergreen project in 1988, the next one (n=320) in 1996 and the latest cohort (n=292) in 2004. The research methods were the Mini-D test as a rough measure of general cognitive functioning, self-evaluations of the level of and changes in memory, learning ability and mental agility, as well as self-evaluated memory difficulties in various matters. The reliabilities of the methods were mostly satisfactory and equal in all cohorts. No significant differences were detected in the Mini-D test results between the cohorts or between women and men. The amount of experienced memory difficulties was quite small, and smallest in the latest cohort. Names were most likely and appointments least likely to cause memory difficulties. According to the sum scores based on the self-evaluations of memory, learning ability and mental agility, these abilities were mostly perceived to be at least satisfactory and not to have changed much with increasing age. The results indicated a somewhat more positive attitude toward one's own cognitive abilities among the later cohorts, especially among women. Only the sum score of the self-perceived cognitive level had significant correlations with the Mini-D test results in all cohorts. In all, the maximal 20-year span in the years of birth of the three cohorts produced some differences in the self-evaluations of cognitive abilities in favor of the later born cohorts, but not in the cognitive test results.

851. THE 80+ STUDIES — HISTORY, DESIGN, COLLABORATION AND CULTURAL COMPARISONS

T. Svensson (*Lund University, Sweden; torbjorn.svensson@med.lu.se*)

The development of the 80+ Studies from the start of Lund 80+ in Lund, Sweden in 1988 will be presented. The basis and rationale for choosing a longitudinal sequential design with addition of new cohorts is explained. As of today The 80+ Studies are represented in Sweden, Iceland, included in 1993, Canada, 1998, and Lithuania, 2003. The first cohort at each site is followed from age 80 until all persons in the cohort is dead. During this period a new cohort of 80-year olds is included every five years and also followed in 5 year intervals. The studies include medical, social and psychological data collected through interviews tests and examinations. Each person in the study is seen by a physician, a psychologist and also has blood tests at a laboratory. A total of about 500 variables are collected from each individual at every measurement point. The design allows for aging, cohort and cultural comparisons of 80-year olds and older. Here comparisons between cohorts and cultures will be presented for cognitive functions. Differences in verbal understanding, reasoning, spatial ability, and immediate and secondary memory is discussed. There are signs of stability in aging in cognitive functions, but also clear indications of terminal decline. Younger cohorts perform better than older cohorts, and there are cultural differences especially in the more complicated tasks. The cultural differences can mainly be attributed to historical developments in the respective countries during the formative years of the now aged persons.

852. POSSIBILITIES FOR ENDOECOLOGICAL REHABILITATION IN THE IMPROVEMENT OF LIFE QUALITY IN AGING

L.P. Sviridkina, Yu.M. Levin, S.G. Toporova (*Russian Research Institute of Gerontology; gerinfo@mail.ru*)

One of the mechanisms of aging is inadequacy of the microcirculation system including interstitial humor transport (IHT) and of lymphatic drainage (LD) of tissue. This inadequacy is growing in case of development of any pathology. Proceeding from this, we consider nonpharmacological stimulation of IHT and LD, which is at the base of endoecological rehabilitation and treatment (ERT), as one of the possible approaches to raise the efficacy of measures aimed at health improvement and disease treatment and thus leading to a higher life standard for aged, old and the oldest old. It is very important that ERT technology enables to carry out non-traumatic sanitary measures at every level of the organism beginning with cell habitat inaccessible for other detoxification methods. Results of the study showed that introduction of ERT modifications (depending on the presence and specificity of the disease) into the system of medical sanitation activities in more than 10 thousand patients aged 50–82 helped to accelerate, irrespective of the disease aetiology and pathogenesis, the arrest of main symptoms and to reduce risk factors (increased variability of cardiac rate, decreased amount in blood of aggregate cholesterol, beta lipoproteins, triglycerides, glucose). We also noted increased duration of remission, prevention in the development of unfavorable changes, connected with the disease patho-genesis or with standard therapeutic medicinal load. Positive shifts in the general state of patients (improvement of psychoneurological functions, normal-

ization of immunity indices, different types of metabolism) testified to a higher life standard. Objective manifestation of ERT efficacy was reflected in the changes in a number of homeostasis parameters, including blood toxicity markers, towards their modal meanings that in its turn showed to the decreased expression of endogenous intoxication. Thus ERT method gives real possibility to improve the life standard of aged and old patients and may be considered as one of the helpful approaches towards higher effectiveness of treatment and prevention of untimely aging.

853. SPEAKING OF EVERYDAY LIFE AT THE AGE OF 100

C.E. Swane (EGV Foundation, Denmark; csw@egv.dk)

Images of centenarians split between categorisations like «successfully aged» and persons whose «life stands still» due to mental and physical frailty. The aim of this research has been to develop our understanding of very old people's everyday life experience as well as understandings of old age among family and professional caregivers. Everyday life of centenarians is represented through qualitative interviews with 18 centenarians, four men and fourteen women. The participants were selected from the Danish centenarian cohort 1995–96 at the time of a medical follow up study at the age of 101,5 years. Two centenarians lived alone, one with a spouse, two with a daughter and son-in-law, five in care facilities, eight in nursing homes. Mentally the participants are described as relatively well to well functioning, with great variety in terms of physical resources. The closest relative was interviewed in 15 cases as well as a contact person from home or institutional care in 14 cases. Different interpretations and experiences related to old age are discussed by use of the gathered interviews. According to a nurse, who is the primary caregiver of a (very old) lady who lives in a nursing home, the lady's life is an example of successful old age — Living her life like this, she wouldn't mind to reach the age of 100 years herself. The lady's closest relative, her niece on the other hand finds that the old lady is unhappy with her life in the nursing home and «is not stimulated at all». Whereas the lady herself describes how hard it is to become so incapable, but how she loves to sit by herself and sleep in a chair in the sun. The interviews with the centenarians show that, despite various levels of frailty, the participants all reflect complex aspects and experiences of agency in their everyday life. The presentation touches upon various ways of attaching meaning to the structure and processes of everyday life, according to interests earlier in life.

854. THE MAIN TRENDS IN DEVELOPMENT OF LONG TERM CARE IN POLAND

*K. Szczerbinska¹, A. Kozierekiewicz¹, K. Czarniecka²
(¹Jagiellonian University Medical College, Institute of Public Health, Krakow, Poland, ²Former Vice Minister of Health, Poland, mxszczer@cyf-kr.edu.pl)*

During the last 15 years the continuous health care reform with the main goal of lowering of the health costs brought significant reduction of the average length of stay in hospital (ALOS) (from 12 days in 1990 to 6 in 2005). It was possible thanks to the very fast development of LTC. Currently, the elderly are the predominating group of patients in LTC, reaching 98% in residential homes, 80% in LTC institutions, 87% in nursing homes and 70% in hos-

pices. The presentation is devoted to particular results of the project 'Situational Analysis and Future Requirements for Long-term Care in Poland', founded by The World Bank. *Purpose* of the study was to present main trends in LTC development in Poland, starting from 1999 (the year of introduction of the common health insurances and Sickness Funds) and to describe the underlying problems and factors that were crucial for changes in LTC. *Method*: The study of statistical data concerning capacity (beds) and utilization of services (persondays, number of patients admitted and number of patients waiting for admission during a year, ALOS and use of beds) in the period of 1999–2005, based mainly on the resources of Polish Central Statistical Office. The study of data concerning contracts for services with the National Health Fund (in 2005). *Results*: General trends for all LTC institutions in Poland showed the continuous growth of capacity (beds) and use (in persondays) of services, but after analyzing each region separately, quite large differences appeared. The development of LTC was unequal among different types of institutions (hospitals for the chronically ill, hospices, LTC institutions, nursing homes, residential homes). Legal acts/regulations and contracting policy may influence strongly and very quickly the use and capacity of medical and social care services (for example Social Care Act in 2004 rapidly reduced the number of persons waiting for admission to residential homes). ALOS became shorter, allowing to admit more patients and to improve the use of LTC beds, but as a result more patients seek for care at home, where LTC services are hardly developed. *Conclusions*: The harmonized development of LTC is needed, as well as wise investment in regions with insufficient services. Legal regulations may cause rapid changes in use of services, even in time of a year. The economical factors (the way of contracting services) have the strongest influence on creating capacity and the use of services.

855. AGEING AND POLITICS IN HUNGARY

Zs. Szeman (Institute of Sociology Hungarian Academy of Sciences, Welfare Mix Team, Budapest, Hungary; szemanzs@hu.inter.net)

The Hungarian population is aged both in the demographic sense and socially, in respect of the proportion of pensioners within the population, a rate that rose continuously from the systemic change and stabilised at around 30% from 1997. The paper shows the changes that occurred at the macro political level from 1990 to 2006, tracing the measures and trends that had an economic, social or political impact on the elderly population. The paper deals with the tension between the mezo and macro levels, comparing the government intentions for ageing manpower with the discriminative behaviour of employers towards ageing employees. It analyses why the employer favours 'young' older persons and pensioners and why the pensioners' labour market flourished (again) from 2000 to 2006. It examines the changes introduced by the macro level affecting the pensioners' labour market, its intentions and the anticipated consequences. In addition, the paper examines the impact of public policy from the viewpoint of institutions providing services for the elderly, as well the processes that resulted in innovation from below in care for the elderly and influenced their quality of life.

856. SOME DEMOGRAPHIC INDICES OF AGING AND LONGEVITY AMONG ABORIGINES OF YAKUTIA

O.V. Tatarinova¹, Y.P. Nikitin² (¹*Yakutsk Scientific Centre RAMS and Government of Sakha Republic (Yakutia), Dept. of Internal Medicine, Yakutsk, Russia,* ²*Research Institute of Internal Medicine under the Siberian Branch of the AMS, Novosibirsk, Russia; tov3568@mail.ru*)

Yakuts as well as evens, evenks, jukagirs, dolgans and chukchi, the latter referring to small northern peoples, are considered to be aborigines of Sakha Republic (Yakutia). Based on statistical data of Yakutia there was a decrease in a total amount of the population (13.2%), however, the number of small northern natives and yakuts for the 1989–2002 census period has risen nearly three times. Age structure of the natives is determined by a low specific gravity of men aged 60 years and older (4.2–7.3%), except yakuts (8.3%), as compared with the whole population of the republic. However, aging of the population is observed among the natives of Yakutia as well. For 1989–2002 there was an increase of aging population as well as their specific gravity in the total amount of all nationalities. As for old-timers (90 years and older), their dynamics is unfavourable for aborigines. In accordance with the 2002 census data, no any old-timers among chukchi were reported, no male old-timers were among dolgans and jukagirs too. No centenarians were registered among evens, dolgans, jukagirs, chukchi. Demographic indices of longevity testify, that this phenomenon is not typical for the whole population of Yakutia, but for the natives (yakuts, evens, evenks). 462 older men and women aged 90 and over were registered among aborigines in 1989, and moreover, 83 centenarians were noted there. This parameter amounted to 80.3% and 93.3% accordingly from the total number of old-timers in Yakutia. Based on the 2002 census data there was a decrease of the specific gravity of aborigine old-timers as compared with the total amount of old-timers all over the republic, but it still remaining at a significant rate: 61% among 90-year-old natives of the republic and 88% among centenarians. The 1989 census indices of longevity in aborigines of Yakutia were higher than in the republic and Russia as a whole. The amount of IL 2 (index of longevity) was equal to 16.4‰ for yakuts, 17.6‰ for evens, 14.9‰ for evenks. In 2002 there was a statistically significant decrease of IL 2: 9.0‰ in yakuts, 9.7 in evenks, 10.5‰ in evens. On the basis of a sex-adjusted analysis IL 2 appeared to be higher in women as compared with men (11.3‰ and 5.5‰ accordingly) among yakuts and among evens (3.9‰ and 13.4‰). Among evenks the higher rate of IL 2 was identified in male (11.3‰) as compared with female (8.4‰).

857. EVOLUTIONARY OPTIMALITY OF OLDER REPRODUCTION

A.T. Teriokhin, E.V. Budilova (*M.V. Lomonosov Moscow State University, Russia; terekhin_a@mail.ru*)

The life history strategy of one population is evolutionarily more successful than that of another population if the ratio of the first population size to the second one tends to infinity with time. It is known that in the case of an unlimited exponential increase of population size it is the Malthusian coefficient, i.e. the largest root of the Euler — Lotka equation, r , which is the criterion of evolutionary optimality. It implies, particularly, that, all other things being equal, an increasing (i.e. having $r > 0$) population is evolution-

arily more successful if its individuals reproduce earlier. The purpose of this communication is to call attention and discuss social implications of another, rather counterintuitive, fact: all other things being equal, that decreasing (i.e. having $r < 0$) population is evolutionarily more successful whose individuals reproduce later. For example, compare two hypothetical human populations whose women, in average, live 86 years and give birth to 0.75 children during their live, but the women of the first population reproduce from 46 to 50 years old whereas the women of the second one reproduce from 16 to 20. In this case, if the ratio of the first population size to the second one is 100:100 at the beginning, it will be 46:23 in 110 years, 28:7 in 195, etc. So, the first population is evolutionarily more successful ($r = -0.035$) than the second one ($r = -0.073$). We suggest, particularly, that the really observed later average marital age in the most European countries (mostly having $r < 0$) is a circumstantial evidence of an unconscious tendency to the evolutionarily optimal reproductive behavior of their populations. We suggest also, that, may be, it is worth to inform the population about this fact in order to make the later reproduction conscious and, furthermore, to shift the state support of child-bearing in favor of older age groups of population.

858. QUALITY OF LIFE AND SOCIAL INEQUALITY IN OLD AGE: COMPARATIVE PERSPECTIVES FROM THE OASIS PROJECT

C. Tesch-Roemer, A. Motel-Klingebiel (*German Centre of Gerontology, Berlin, Germany; tesch-roemer@dza.de*)

We analysed quality of life and inequality in old age in an international comparative. To examine societal and cultural differences we compare different countries (Norway, the United Kingdom, Germany, Spain, and Israel), using data from a large age-stratified random sample of the adult urban population. Quality of life is seen as an outcome of unequal chances in life. We distinguish between overall and domain-specific expressions of quality of life, which allows us to analyse the determinants of overall quality of life and their development over the life course. As determinants of quality of life we considered not only the domain of social relations, but also psychological health, somatic health, and environmental factors. There are decreasing mean levels and increasing variation in quality of life with advancing age. With age the impact of physical health on overall quality of life increases, while the predictive power of other variables decreases. The results support the hypotheses of differentiation and age dependence. For both of these the international comparisons show similar results in different countries. These uniform age tendencies in modern European society support the interpretation of age group differences as being life course effects. Based on these results, theoretical requirements for comparative ageing research will be discussed.

859. EARLY RETIREMENT AS CRITICAL LIFE EVENT

C. Tesch-Roemer, S. Wurm (*German Centre of Gerontology, Berlin, Germany; tesch-roemer@dza.de*)

In recent years, older employees have often been released to early retirement or unemployment. This has been a common practice, not only in Germany but in other European countries as well; it has reflected both the economic situation and the attitude towards older employees. However, becoming redundant or retiring early is presumably a rather more critical life event than going into normal retirement. Which factors contribute to unemployment or

early retirement of older employees and to what extent are changes in employment status accompanied by changes in health? Analyses were based on the German Ageing Survey, a nationwide representative survey on middle-aged and older adults, aged 40 to 85. The present study included a sub-sample of middle-aged adults (N = 384) who were interviewed twice during a six year period (T1: 45-54y., T2: 51-60y.). The analyses revealed that individuals with worse physical health at T1 were more likely to retire early or to lose their job during the six year period; by contrast, subjective health at T1 could not predict changes in the employment status. However, changes in the employment status (i.e., job loss or early retirement) were accompanied by a worsening of subjective health. An additional analysis of older employees (N = 392, T1: 55-64y., T2: 61-70y.) revealed that this does not hold true for individuals who took normal retirement during the study period. The findings therefore suggest that worse health is a risk factor for unemployment and that early retirement or job loss is more stressful than taking normal retirement.

860. HEALTH AND EMPLOYMENT STATUS IN MIDDLE ADULTHOOD

C. Tesch-Roemer, S. Wurm (*German Centre of Gerontology; clemens.tesch-roemer@dza.de*)

Demographic development will change European societies in the next decades. One of the most salient questions for the development of societies relates to ageing workforces, e.g. extension of retirement age. However, in the last decades, older employees have often been released to early retirement or unemployment. Although this has been a common practice, it was predominant in Germany. At the time being, there are changes in social policy throughout Europe concerning the extension of the working phase. The health status of ageing workers is one of the main factors influencing employment status in late middle adulthood. In the presentation we will pose the question, which role the health status plays in the employment status of (unemployment or early retirement) of older employees? Analyses were based on the German Ageing Survey, a nationwide representative survey on middle-aged and older adults, aged 40 to 85. The present study included a sub-sample of middle-aged adults (N=776) who were interviewed twice during a six-year period (T1: 45-64 yr, T2: 51-70 yr). The analyses revealed that in the younger age group (45-54 yr) more than 40%, and in the older age group (55-64 yr) more than 50% suffered from two and more (often chronic) diseases. The analyses revealed that younger individuals (45-54 yr) with worse physical health at T1 were more likely to retire early or to lose their job during the six year period; by contrast, subjective health at T1 could not predict changes in the employment status. The findings show that despite a secular trend towards improved health in middle and late adulthood, multimorbidity is already a major problem for the majority of older workers. The analyses also suggest that worse health is a risk factor for unemployment.

861. INTERGENERATIONAL RELATIONS IN COMPARATIVE PERSPECTIVE: THE NEED FOR THEORY

C. Tesch-Roemer, A. Motel-Klingebiel, H.-J. von Kondratowitz (*German Centre of Gerontology; tesch-roemer@dza.de*)

Intergenerational relations in old age are the source of support, help, and positive emotions, but sometimes also for conflict and stress. Although some aspects of intergen-

erational relations might be similar across cultures and societies, there are other aspects which might vary between different cultures and societies. Theories for comparative ageing research are needed which relate cultural and societal factors. The comparative research project 'OASIS — Old Age and Autonomy: The Role of Service Systems and Intergenerational Family Solidarity' will serve as an example. OASIS used the discussion regarding «crowding-in» versus «crowding-out» of the family by the welfare state as theoretical background. Results show that total help received by the elderly is more extensive in welfare states with strong infrastructure of formal services. Moreover, there is no evidence of a substantial crowding out of family help if social structure, preferences and familial opportunity structures are statistically controlled for. Based on these results, theoretical requirements for comparative ageing research on intergenerational relations will be discussed (distinguishing and describing levels of analyses, explicating mechanisms for the macro-micro-linkage, and generating hypotheses).

862. DISCREPANCIES BETWEEN PERSONAL INCOME AND NEIGHBOURHOOD STATUS: DIFFERENT CONSEQUENCES FOR THE AVAILABILITY OF NEIGHBOURHOOD RELATIONSHIPS

F. Thomese¹, D.J.H. Deeg² (*¹Vrije Universiteit, Amsterdam, NL, ²VU University Medical Centre, Amsterdam, NL; gcf.thomese@fsw.vu.nl*)

Changes in individual or neighbourhood socio-economic status may cause discrepancies between older persons' income level and neighbourhood status. Although this may be common for long-term residents of the same neighbourhood, the consequences of discrepancies for neighbourhood relationships are unknown. The paper analyses the neighbour networks of older adults in discrepant situations. Personal networks are considered an important buffer against stresses arising from personal and neighbourhood changes, implying that neighbour relationships might be mobilised. Yet the same changes provoking the need for relationships in the neighbourhood may result in their lower availability. Based on two waves of the Longitudinal Aging Study Amsterdam, we explore the effects of income discrepancies on the number, type and stability of neighbourhood relationships among 1228 men and women (ages 64-94 years) living independently. Two categories defined discrepancies: discrepant-low (DL, low income in high status neighbourhood) and discrepant-high (DH, high income in low status neighbourhood). Both categories were compared with the same reference category: matched low (LL, low personal and low neighbourhood income status). Of the 229 persons reporting a high income, 102 lived in a low status neighbourhood (DH). Of the 157 persons with a low income, 67 lived in a high status neighbourhood (DL). Differences in neighbourhood relationships between the discrepant groups and the LL group are explored. Preliminary analyses show that, compared to the LL group, the DH have less kin (0.69 vs. 1.72 members) and a higher turnover (2.38 vs. 1.76 relationships lost) in their neighbour networks, and the DL have smaller neighbour networks (3.20 vs. 4.02 members) containing less kin (0.53 vs. 1.72 members). The differences are correlated with neighbourhood status changes, but not with individual income change. The results will be discussed in the light of personal and neighbourhood resources.

863. THE INTERGENERATIONAL CARE POTENTIAL OF DUTCH OLDER ADULTS IN 1992 AND 2002

T. van Tilburg, S. van der Pas (VU University, Amsterdam, the Netherlands, e-mail: tg.van.tilburg@fsw.vu.nl)

Intergenerational ties are an important source of care in old age. Research has consistently shown that instrumental help and emotional support exchanged in parent — adult child relationships are more intense than in any other relationship type, apart from the spousal relationship. This intergenerational potential seems to be in danger. Among recent generations childlessness increases and the number of children decreases. Moreover, there has been a strong increase in divorce changing the structure of families. Furthermore, traditional patterns such as care provided to an older adult by a co-residing or a non-employed child will be less prevalent in the years to come. In this respect, it is not only the availability but also the contact and quality of the intergenerational ties which are of interest. This study investigates whether intergenerational contact changes over successive cohorts in the Netherlands. Respondents are from the Longitudinal Aging Study Amsterdam and included birth cohorts from 1903–1937 with data collected in 1992 ($N=4483$) and cohorts from 1913–1947 with data collected in 2002 ($N=2404$). Information on contact frequency is available for each biological and stepchild. Preliminary results show that for the successive birth cohorts (ages 55–89) the number of frequently contacted children did not change over ten years. Furthermore, we assessed among respondents aged 55–64 whether cohort changes in the domain of traveling distance (decreasing prevalence of co-residence), marriage (increasing rates of ever been divorced among parents) and employment (increase of being employed among both parents and children, in particular daughters) affected the intergenerational care potential of Dutch older adults over ten years. The results show that although children living at a greater distance and a parental history of divorce affected the contact and support exchange negatively, the main effect of the cohort was still of importance. Parents of the later cohort had more contact and support exchanges with their children than the earlier cohort, revealing that families have not declined in importance. The overall conclusion is that for current cohorts of older adults the intergenerational potential is not in danger.

864. OCCUPATIONAL POSITION, WORKING CONDITIONS, WORK-RELATED HEALTH ATTITUDES, AND MORTALITY PATTERNS IN OLDER AGE.

B. Tobiasz-Adamczyk, E. Bartoszewska, P. Brzyski, M. Kopacz (Jagiellonian University Medical College; mytobias@cyf-kr.edu.pl)

An 18 year follow-up study in Krakow, Poland. There have been few empirical attempts to explore the relationship between working conditions during one's productive period of life (during active employment) and mortality patterns in older age. Geriatric studies show the difficulties faced in explaining possible pathways by which long-term consequences of occupational activity influence the risk of death during one's inactive period of life. *Aim.* The aim of this study was to use occupational position and working conditions to determine health-related attitudes and health characteristics as independent predictors of mortality risk in older age. *Material and methods.* A base-line study was

performed over 1986/87 in a randomised sample of 2605 individuals (34.6% males and 65.7% females), aged 65 years and over, resident in the Kraków city centre. Face to face interviews covered questions concentrated on demographic and social characteristics, occupational history, chronic health conditions, self-rated health, and health-related attitudes and behaviours. Working conditions were analysed based on level of education, occupational position, branch of employment, exposure to occupational hazards, and early retirement because of health status. The vital status of all individuals under study was ascertained by monitoring city vital records. Statistical analysis was performed using Cox proportional hazard model. Compared to specialists, a higher risk of mortality was noted in men employed as industrial workers and craftsmen ($HR=1.47$, 95% $CI=(1.19;1.81)$) as well as manual labourers doing simple work ($HR=1.33$, 95% $CI=(1.01; 1.73)$). Industrial workers and craftsmen entitled to early retirement or a disability pension had the highest risk of mortality ($HR=1.80$, 95% $CI=(1.35; 2.40)$). Occupational history significantly affected the risk of mortality across occupational groups. With respect to industrial workers and craftsmen ($HR=1.68$, 95% $CI=(1.28; 2.22)$) as well as manual labourers doing simple work ($HR=1.47$, 95% $CI=(1.04; 2.08)$), attributing small to moderate meaning to their occupational history increased the risk of mortality. *Conclusion:* (1) Occupational history and entitlement to early retirement or disability pension were found to be independent predictors of mortality. (2) Health and work-related attitudes as well as health-related behaviors connected to one's occupational position yielded the most significant differences in risk of mortality among industrial workers and craftsmen, the most at-risk occupational group.

865. HOUSING MATTERS IN VERY OLD AGE — YET DIFFERENTLY DUE TO ADL DEPENDENCE LEVEL DIFFERENCES

S. Tomson¹, V. Horstmann², B. Slaug², F. Oswald³, S. Iwarsson² (¹Academic School of Occupational Therapy, Riga Stradins University, Latvia, ²Lund University, Sweden, ³University of Heidelberg, Germany, tomsones@inbox.lv)

In order to support the development of optimal housing options for older people, we need to increase our understanding of relations between aspects of housing and aspects of health in old and very old age. The objective of this cross-sectional study was to explore whether and how aspects of housing are related to life satisfaction and perceived health among very old, single-living people. Based on survey study data in three countries (Sweden, Germany and Latvia) from the ENABLE-AGE Project ($N=1150$), correlation and regression analyses were performed with sub-groups of participants defined according to different levels of ADL dependence. The results in Sweden showed that the aspects of housing related to life satisfaction and perceived health were different in the three ADL sub-groups. Among objective aspects of housing, accessibility problems influenced life satisfaction as well as perceived health, while differently among the sub-groups. As concern perceived aspects of housing, aspects of meaning of home (MOH) were influential on perceived health in several sub-groups, while only among persons dependent in I-ADL social aspects of MOH were related to life satisfaction. Among persons dependent in I-ADL, also external housing-related control beliefs played a role. In conclusion, the results indicate that housing matters in

very old age, yet differently due to ADL dependence level differences. Most importantly, different aspects of housing seem to play a role in different phases of the trajectory of disability in very old age, while longitudinal studies are needed to verify these indicative results. In order to explore these dynamics further, at the conference results from additional analyses involving data from Germany and Latvia will be presented.

866. ACUTE CONFUSIONAL STATE DURING ADMISSION IN A GERIATRIC HOSPITAL. A PROSPECTIVE STUDY

M.A. De la Torre, S. Amor, R. Padilla, A. Cruz, B. Cobos, M.A. Carbonell, C. Yera, R. Daimiel, F.J. Tarazona
(Hospital Virgen del Valle Toledo Spain Carretera de cobisa s/n 45071 Toledo; tarazona71@TISCALI.ES)

Introduction: The diagnosis of acute confusional state (ACS) during hospital admission is a predicting clinical factor of cognitive deterioration, morbidity and mortality. *Objective:* To define risk of mortality or developing morbidity in patients who presented acute confusional state during hospital entrance. Prospective study analysing mortality, morbidity and hospital reentrance during a year. *Material and methods:* Clinical histories were reviewed from patients admitted in Hospital Virgen del Valle (Toledo) between January and June of 2005, taking shelter the following variables (sex, age, Katz, social situation, previous cognitive damage, previous psychiatric pathology, reason for the entrance, detection of the ACS, medical treatment, effectiveness and destiny to the discharge). After twelve months we measured number of new hospital entrances, percentage of death in this sample, variability in cognitive situation and morbidity. *Results:* 236 cases were detected on 1518 income (15,54%), the age average was 86,53±3,97 years, 147 (62,29%) were women. 131 (55,51%) presented A or B level in the index of Katz, 105 (44,49%) a level C or above. 97 (41,1%) lived with a relative different from the spouse, 85 (36,2%) were institutionalized and 26 (11,2%) lived with their spouse. 121 (51,27%) did not present cognitive damage and 115 (48,73%) presented cognitive deterioration in any of their degrees. 168 patients (71,19%) were sent to the discharge to their Center of Primary Attention. After one year we detected a mortality rate of 16,53% (39 patients), Stroke in a 19,51% (46 patients), 58,89% (139 patients) presented at least a new hospital entrance, 35,61% (84 patients) presented a deterioration in their previous cognitive situation. *Conclusions:* An important percentage of the hospitalized patients presents ACS during the entrance. The ACS is a predictive factor of the development of cognitive deterioration, morbidity, mortality and new hospital entrance. To know the profile of patient who presents ACS could be used as a risk factor of mortality, stroke and cognitive deterioration.

867. GRANDMOTHERS AS AUXILIARY CAREGIVERS OF THEIR GRANDCHILDREN: A QUALITATIVE STUDY

C. Triado¹, F. Villar¹, S. Pinazo², C. Sole³, J.L. Conde¹, J. Montoro⁴, M. Celdran¹ (¹University of Barcelona, Spain, ²University of Valencia, Spain, ³Ramon Llull University, Spain, ⁴Kent State University, USA; fvillar@ub.edu)

This study is focused on grandmothers that assume auxiliary care tasks with their grandchildren. Specifically, our aim is to explore the type of care that they typically offer, which circumstances lead them to play a part-time care-

giver role and the benefits and difficulties they emphasize when talking about such care tasks. Twenty grandmothers participated in the study. All of them look after at least one grandchild five out of seven days a week or, alternatively, at least 10 hours a week. They were interviewed about topics related to the objectives of the research. Typically, the interview took between 20 and 45 minutes. Interviews were audio taped and content-analysed. NVivo 2.0 software was used to carry out such analysis. Our results suggest that parents' necessity, and especially mother's, of going on working lead grandmothers to offer regular care. So, grandmothers see their role as a security net that has been activated due to their children need of help, and many of them mention a sense of duty towards their children as the main motivation to look after their grandchildren. Being auxiliary caregiver seems to be something 'natural' and 'taken for granted' for most of the grandmothers. So, they find it difficult to isolate a specific moment of decision. All our grandmothers said that they are very satisfied with their role as auxiliary caregivers. Caregiving seems to have some intrinsic rewards for them, sometimes related to seeing how grandchildren grow or doing things with them that couldn't be done with their own children, and it is also a way to get company and sense of purpose.

868. MEDICAL AND SOCIAL ASPECTS INFLUENCING TO THE QUALITY OF LIFE OF St. PETERSBURG ELDERLY POPULATION

S.V. Trofimova¹, T.V. Bondarenko² (¹St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia, ²St. Petersburg City Geriatric Center, St. Petersburg, Russia; tama_ra@rambler.ru)

Demographic situation in St.Petersburg is comparable with that in advanced European countries and by the rate of aging essentially passes ahead of other regions in Russia. In the frames of the St.Petersburg Law «The city target program «Geriatric Services and hospices for the St. Petersburg's Population in 2001–2004», the survey of social health and well-being of elderly people was carried out. The study provided information useful for the planning of health and social services for the elderly in St. Petersburg and gives reliable information on the needs of the elderly in these services. The total number of respondents was 1500 aged from 55 to 95 yr. The questionnaire of 136 items included questions about assessment of health and functional self-ability as the most important aspect influencing to the quality of life of the elderly. Instrumental activities of daily living (IADL) and Physical activities of daily living (PADL) were used in the questionnaire. Analysis showed that most of the respondents could easily do the following: walk between rooms (95,6%), get to and out of bed (96,7%), eat (98,2%), take shower or bath (91,4%), clean teeth, shave (97,5%), use the telephone (95,3%), take medicine (97,1%). All these procedures they could do themselves and only seldom they needed assistance. The most difficult for the elderly were the following activities: shopping — 8,5% respondents could not do this by themselves because of the necessity to go up and down stairs and other barriers; 9% could not use the public transport means; 6,2% could not clean the flat. Partly difficulties were also reported by the respondents: shopping — 10,4%; using the means of transport 69,1%; cleaning the flat — 9,1%; cooking — 6,2%. As a rule the relatives and social services helped them to overcome the

difficulties. Unfortunately non-governmental institutions were not mentioned at all. Hypertension and ischemic heart disease were mentioned as the most frequently medical problems among elderly. Muscular-skeleton diseases took the second place. At the same time it should be noted that among all respondents 54,4% were officially certified as disabled persons, including 4,2% those of I group, 47,1% — of II group, 3,1% — of III group. Among respondents who were not certified as disabled, only 7,5% respondents considered necessary to get the certificate of disablement. Thus, 38,1% respondents did not have this certificate and did not consider getting it necessary. More than 50% respondents marked the worsening in their health during the last year; however about 20% never asked for medical assistance during the last year as they could not have an adequate support in public health institutions. One of the serious tasks for the people who have the limited capacity in moving is to reach a medical institution: 36,1% respondents reported of this. This fact is possibly the main reason limiting their using different kind of rehabilitation (physiotherapy and physiotherapy exercises, therapeutic physical training, massage, water-cure etc.). In addition, more than 80% elderly citizens of St.Petersburg who mostly could improve their health by rehabilitation did not get adequate treatment in public health institutions because of poor state of material and technical basis of these institutions. Survey results were submitted to the Committee on labour and social protection of population of St.Petersburg and are used nowadays to optimize the work of medical and social service.

869. NEED FOR TRAINING IN HEALTH CARE: A PROGRAMME FOR PRIMARY HEALTH CARE WORKERS IN THE FIELD OF AGEING

J. Troisi (International Institute on Ageing, United Nations-Malta, Valletta, Malta; joseph.troisi@um.edu.mt)

The significant increase in life expectancy unavoidably implies not only a heightened demand for existing support services, but also for new services and alternative approaches for the care of the older population. Health promotion is the best approach to healthy ageing. In various countries, an effective network of Primary Health Workers at community level is the focus of health care policy. In line with primary health care strategy, it is essential that primary care workers should have the necessary skills, knowledge and techniques to facilitate good care of older persons in their care. To achieve this aim, governments should ensure that continuing health education concentrates on primary health care, including health promotion and multi professional teamwork. The standard of care provided to any person especially to older persons, depends on the personal qualities of the carers as well as on their professional preparation. They must have the basic training which will give them the required skills and orientation to carry out their tasks competently. This presentation reviews and analysis a training programme for primary health care workers in the field of ageing. It emphasises the fact that in order to maintain the well being and independence of older persons through self-care, health promotion and the prevention of disease and disability, a new orientation in training and new skills among all those involved is required.

870. PERSPECTIVES FOR EDUCATION IN AN AGEING SOCIETY

J. Troisi (International Institute on Ageing, United Nations-Malta, Valletta, Malta; joseph.troisi@um.edu.mt)

Issues: Although 25 years have passed since the First World Assembly on Ageing in Vienna and 5 years since the Second World Assembly in Madrid a serious deficiency being faced by many countries in meeting the challenges of population ageing is the acute shortage of trained personnel at all levels. This includes all those who work with older persons namely: health professionals, formal carers, volunteers, family members as well as the older persons themselves. This is the more so in rural and remote areas where the need is very pronounced. Most of the people providing a service to older persons still lack the necessary training. Governments in developing countries are thus being faced with a two-edged sword. On the one hand they are being faced with a rapid growing older population especially in the rural and remote areas. On the other hand, very often these areas lack the basic resources and trained personnel to provide these services. This symposium aims at reviewing and analysing some national and international attempts being made to meet this need. The panellists will discuss how the education and training in the various aspects of ageing are to be made available at all levels ranging from high specialisation at university level as well as the grass roots' level. Although the basic issues dealt with are similar, the approach varies. *Members of the Panel:* (1) Joseph TROISI, Director, International Institute on Ageing, United Nations-Malta, Valletta, Malta (chairperson), <joseph.troisi@um.edu.mt>. (2) Vladyslav BEZRUKOV, Director, Institute of Gerontology of the Academy of Medical Science of Ukraine, Kiev, Ukraine. (co chairperson), <admin@geront.kiev.ua>. (3) Rocio FERNANDEZ-BALLESTEROS, Director of Gerontology programmes, Department of Psychobiology and Health Psychology, Autonoma University of Madrid, Spain, <r.fallesteros@uam.es>. (4) Gloria GUTMAN, Director, Dr.Tong Louie Living Laboratory & Professor, Department of Gerontology, Simon Fraser University, Vancouver, Canada, <gutman@sfu.ca>. (5) Alexandre SIDORENKO, UN Focal Point on Ageing, Department of Economic and Social Affairs, New York, USA, <sidorenko@un.org>

871. AGING IN TURKEY

I. Tufan (Akdeniz University, Antalya, Turkey; itufan@akdeniz.edu.tr)

We would like to present you our evaluation on 68 million people living in Turkey. Almost 30 milyon people (43,5%) do not have any social security in Turkey. Of these 93% fall into the age group of 0–59 years. Even disabled do have similar picture, they are more handicapped. *The number of disabled people is 8,4 million (13,7%).* Demential patients have been forgotten in the statistics. It is estimated that 500.000 people have dementia and 50% of these are diagnosed Alzheimer' disease. Almost halve of disabled people did not attend school (42%) and 40% do not have social security. A high number of disabled people do not utilise socio-cultural services (86%). Almost all (98%) did not have any rehabilitative support and care services. Two thirds even do not leave home. Progressed aging is going to be observed more frequently. People aged 60–79 comprised 57% between the years 1960–2000 and the group 80+ revealed a 266% increase. It is estimated that in the 2020's 16% and in the 2050's 30% will elderly

people. Problems concerning elderly in Turkey will begin in the future. Basic properties of Turkish Elderlies is as follows: Poor, ill, no social security and lower educational status. Nowadays the ratio of elderlies in the population is 9%. The population will increase in the 2020's to 100 millions and 2050's to 200 millions and under this circumstances to overcome this obstacles support is needed.

872. CARE OF THE ELDERLY IN TURKISH RURAL SETTING

I. Tufan, H. Yaman (Akdeniz University, Antalya, Turkey; hakanyaman@akdeniz.edu.tr)

The world population is aging. Even population aging is frequently seen as a problem of developed country, developing countries with higher proportion of young people are not well prepared to face the health needs of the demographic shift of the next 20 years. Turkey seems to be such a country, of which 22% of the population is expected to elderly in 2020. urbanisation and migration from rural areas to metropolises is another problem of developing countries. Leaving elderly in elderlies in rural areas, where medical support is already lacking. Close to 60% of the world's elderly are estimated to live in rural areas. Therefore, any reference to rural aging addresses the majority of the world's older persons. In this study the health utilisation behavior of elderly leaving in rural area has been evaluated. Elderly living in rural Antalya/Turkey have been asked during their visit to the primary care center to participate in this survey. One hundred twenty two agreed to participate. The questionnaire included questions on sociodemographic properties, presence of chronic disease, availability of social security, co-morbidity, drug use for a certain chronic condition, health behavior during a health condition, reason of today's encounter to the primary health care center, health problems, how often do you visit the doctor. Participants were predominately women (n=63, 52%). More than half of the participants had a chronic condition (n=57, 57%). Most had no social security (67% female, 61% male), 62 (62%) had multi-morbid conditions, 57 (57%) have to take medication for a chronic condition, 44 (46%) first used self-medication, 26 (26%) asked a relative for their illness. Social security is a frequent problem in rural population. Chronic conditions, polypharmacy is common. Most apply self-care and ask lay people before going to doctor. We believe that rural communities show deficiencies in their health and social-support systems. And further steps should be taken to provide elderly people in rural communities easy accessible, free, equitable health services.

873. CLOTHING, THE BODY AND AGE

J.M. Twigg (University of Kent, Canterbury, Kent, UK; J.M.Twigg@kent.ac.uk)

Clothes are central to the ways older bodies are experienced, presented and understood within culture, so that dress forms a significant, though neglected, element in the constitution and experience of old age. The paper, which is based on the early stages of an empirical study of clothing and age, traces how dress intersects with three key debates in social gerontology: concerning the body, identity and agency. It examines the part played by clothing in the expression of social difference, exploring the role of age ordering in determining the dress choices of older people, and its enforcement through moral discourses that discipline the bodies of older people. Dress is, however, also an

arena for the expression of identity and exercise of agency, and the paper discusses how far older people are able to use clothing to resist or redefine the dominant meanings of age, addressing questions of the changing cultural location of older people, and the role of consumer culture in the production of Third Age identities.

874. FORMAL HOME CARE ORGANIZATION FOR THE OLDEST OLD IN TURKEY: A MODEL EXAMPLE OF IZMIR

R. Ucku¹, J.-C. Henrard² (¹Dokuz Eylul University medical Faculty, Izmir, Turkey, ²Health and Ageing Research Unit, Centre of Gerontology Sainte Purine Hospital, Paris, France; reyhan.ucku@deu.edu.tr)

The population of Turkey is getting older, although Turkey has a younger population than most of the OECD countries and according to the projections, the proportion of those aged 65 and over will increase. Even if the proportion of older people is lower in urban areas than in rural areas, it is high in the big cities where elderly living alone are more common. In Izmir, which is in the western region and the third biggest city in Turkey, the people aged 65 and over (older) are 229 623, (6.9% of the total population); people aged 80 and over (oldest old) are 27 528 (0.8% of the total population, 12.0% of the older population). Care of older people are mainly informal home care, families are the main care givers. Older people needing support in their own living environment, especially after the age of 80 have more illnesses, are more dependent. Although this support has been given by the families and/or relatives, formal home care is also necessary. One of the main reasons is the decrease of the number of children in the families, especially in the cities. Therefore to take responsibility for older people should be difficult. At the same time, more women have joined the working life and have been worked more outside the home. In Turkey, monitoring oldest old people should be under the responsibility of the health centres, which are the main primary health care unit, and are common across the country. Whereas health centre team doesn't include a social worker or a psychologist, those professionals work at the provincial directorates of social services. They are responsible of assessment of the elderly for social care which is part of a public agency or of an institution for older people. Formal home care in the big cities should be given by both health centres and directorates of social services working together. Although there are also some challenges for this community-based integration, comprehensive, holistic, needs-oriented and integrated care should be provided as soon as possible. Starting in a big city where meeting the needs of the population, aged 80 and over is considered as a priority is more rational that to spread out integrated care across the whole country which should be much more difficult. *This article was prepared from the report of assignment of Health Gerontology Module (31 March–April 2006, Paris), European Master in Gerontology.

875. FEAR OF FALLING IN ELDERLY PEOPLE LIVING IN THE COMMUNITY

R. Ucku, A. Oz, E. Kara, M. Parti, E. Kose, U. Gergerli, K. Erdem (Dokuz Eylul University medical Faculty, Izmir, Turkey; reyhan.ucku@deu.edu.tr)

Falls are common in the elderly people, and can lead to mortality, morbidity and disability. It can also result in fear of falling, leading to restriction of activities of daily living.

The objective of this study was to evaluate the prevalence of and risk factors for fear of falling in the community-dwelling elderly, aged 65 and over, living in a midwife region of a health centre, Izmir, Turkey. A cross-sectional study was conducted from February 2006 to March 2006. The elderly aged 65 and over living in a midwife region of a health centre has been obtained from Household Registration Cards. The study population was composed of 201 people. 156 people (77.6%) were reached at the end of the study. Data was obtained from the participants via face-to-face interviews at their homes. Fear of falling was measured with a question asking "Are you afraid of falling?" The answer choices to this question were 'not at all afraid,' 'slightly afraid,' and 'very afraid'. The independent variables were age, gender, education, marital status, social security, income, chronic diseases, self-perceived health, experience a fall and recurrence falls in the previous 12 months, a fall requiring medical treatment and resulting in disability, a fall resulting in disability. Chi-square and logistic regression were used in the analysis of data. The mean age of the study group was 72.6 ± 5.4 years and 46.8% were males. It was found that 24.7% of the elderly were illiterate, 55.8% were married, 14.1% were living alone, 85.3% had regular income. 91.0% of the elderly have at least one chronic disease. The prevalence of chronic diseases was as follows: hypertension 67.3%, musculo-skeletal diseases 33.9%, diabetes mellitus 30.1%, cardiac diseases 23.7%. 46.2% of the participants rated their health as excellent, very good or good. Among the participants, 87.2% were using at least one drug per day. Out of 156 subjects, 69.2% reported having fear of falling. Women were more likely than men to express fear of falling. Fear of falling increased among illiterate elderly people; it also increased with increasing number of falls and number of used drugs. Logistic regression analysis indicated that risk factors for fear of falling in the study group were female gender and low educational level. As a conclusion, fear of falling is prevalent in the community-dwelling elderly people. Elderly women and uneducated elderly people are more likely to have fear of falling.

876. DEVELOPING THE NORDIC MASTER PROGRAMME IN GERONTOLOGY

V. Uotinen¹, T. Parkatti¹, T.-M. Lyyra¹, T. Svensson², S. Sigurdardottir³ (¹University of Jyväskylä, Finland, ²University of Lund, Sweden, ³University of Iceland, Reykjavik, Iceland; virpi.uotinen@avoim.jyu.fi)

The need for international cooperation at the academic level is growing. Especially in multidisciplinary disciplines like gerontology it is important to share knowledge and expertise in teaching and research. Although several Nordic universities offer separate master level courses in gerontology, master programs in gerontology are rare. The aim of this presentation is to describe the goals and development of the Nordic Master Programme in Gerontology (NordMaG). A joint programme enables the partner universities to share their expertise in teaching and research. The programme will also increase mobility within the partner universities as well as enhance internationalisation in host universities. The students and scholars within the network will also benefit from the wide existing gerontological research databases and expertise of partner universities. The curriculum will be interdisciplinary having foundations health gerontology, social gerontology, edu-

cational gerontology, environmental gerontology, and psychogerontology. The courses and /modules accomplished in the partner universities will be fully and automatically recognized by the home university. Student mobility between partner universities will be an integral part of the programme. Nordplus and Socrates/Erasmus funding can be used to support the student and teacher mobility. Studies will consist, for example, of intensive courses, web based courses, and studies at home and partner universities. The Master degree will be issued by student's home university with a statement that the degree programme has been organised as a joint programme (diploma supplement). The programme will start in autumn 2008. *Supported by the Nordplus-network and Universities of Jyväskylä and Lund.*

877. CARE-RELATED QUALITY OF LIFE

M. Vaarama (University of Lapland, Finland; marja.vaarama@ulapland.fi)

Purpose: To study the determinants of Quality of life in care-dependent old people, and specify a model encompassing all relevant elements of it. A central question was whether formal care contributes to the quality of life in old age, and if yes, how care should be delivered and managed to be able to meet this challenge. The study was part of the European Care Keys -research project (2003–2006), funded by the V Framework programme of the European Commission. *Method:* The research was multi-disciplinary: sociology, social policy, medical sciences, nursing science, economics, mathematics, statistics and management sciences. Theoretical framework included: multidimensional concept of Quality of life, theory of welfare production, care theories, management theories, the concepts of horizontal and vertical target efficiency of care, and a multi-dimensional approach to quality evaluation. The models and methods were tested in the five project countries (Finland, Germany, Sweden, Estonia and UK) for their validity, reliability and relevance. The methods included statistical analyses on random and total samples, and qualitative methods (literature reviews, cross-walks between instruments, Delphi-panels, focus group sessions). Using system theory, a 4-dimensional model of care-related Quality of life was specified, encompassing the perspectives of the clients, professional care and care management. *Results:* The basic dimensions of QoL in frailty are similar to those in adult population in general (physical, psychological, social, environmental), but the variables within the dimensions as well as the weight of the diverse dimensions are partially different due to the different life situation determined by dependency. To support the QoL of older clients, care needs to involve physical, emotional and social support, and provide the necessary help for everyday life. For this, care management has to employ appropriate ethical concepts, regime and procedures for teamwork, goal oriented interventions and collaboration. Clients and their close ones have to be involved in the assessment, goal setting and evaluations of care. Beside clinical outcome measures, measures of client quality and management quality shall be employed in regular evaluations. *Conclusions:* The concept and models of Care-related Quality of Life (crQoL) can be used as a basis for research within social gerontology, and as a framework for quality and performance evaluation within health and social care services for older people.

878. EFFECTIVENESS OF CARE — CAN GERONTOLOGICAL SOCIAL WORK CONTRIBUTE TO IT?

M. Vaarama (University of Lapland, Finland; marja.vaarama@ulapland.fi)

The task of Social Work is to provide the expertise of «social» into the social and health policy and services at the individual, family, societal and society levels. Also in older people, the central tasks of social work are to ensure sufficient conditions for well-being in everyday life, to empower the client and their families in solving difficult life situations, to strengthen their own competencies of problem solving, and to provide information for decision making and development of the care and support systems. The conditions for a good life quality (QoL) and well-being are (also) in later life social, psychological, social and environmental in their nature, and the gerontological research evidence shows that the importance of psycho-social and environmental factors only grow with advanced age. The more vulnerable an old person is the more important are the psycho-social well-being and supportive environment. Many important decisions that impact directly on QoL of older people are made in the processes of needs-assessment, care planning and delivery, and evaluation of the effectiveness of care. Currently, these processes tend to emphasize physical and cognitive aspects and medical needs, as well as clinical performance and quality of professional nursing care, and the voice of older clients and their families is weak. To maximise the quality of life of the older clients and to be effective, care should be responsive for the varying and complex life-situations of the clients, and empower them to use their own capacities and resources maximally. A multi-agency assessment, intervention and evaluation methods, involving not only the medical and nursing care professionals, but also social work and the client and his family or close ones would better support the achievement of these goals. The presentation will discuss the potential of social work in supporting active ageing, independence and quality of life in older people. This will increase the inclusion of older people in the decisions on their lives, strengthen their voice in the development of the care systems, bring the psycho-social aspects of well-being and quality of life in the forefront, promote multi-professional collaboration and development of preventive measures, and prevent immature decisions for «induced dependency». A theoretical model to approach the effectiveness of the care of older people will be presented, the role of social work in addressing the problem discussed, and the perspectives of research on effectiveness of gerontological social work in the near and long term future will be outlined.

879. QUALITY OF LIFE IN OLDER HOME CARE CLIENTS — RESULTS OF THE EUROPEAN CARE KEYS-PROJECT

M. Vaarama (University of Lapland; marja.vaarama@ulapland.fi)

The objective of enabling older people to live in their own homes as long as possible is a widely accepted policy goal in most European societies, and home care is among the key means to achieve the goal. The aim of the presented part of the European Care Keys study was to investigate the determinants of subjective QoL amongst older clients of home care, to examine the role of home care in production of their welfare, and to find out the features of

good quality care that have the most positive impact on the QoL of the clients. The approach to evaluating the quality of care particularly emphasised the perspective of the older clients. Also the role of care management in quality of care outcomes was investigated, and an attempt was made to specify a restricted amount of key-variables for evaluation of care outcomes from the perspectives of the clients, professionals and management. The data consisted of 513 home care clients from Estonia, Finland, Germany, Sweden and UK in the year 2004-early 2005, collected by face-to-face interviews with clients in reasonable cognitive function (MMSE \geq 15), using the data collection instruments validated in the project. WHOQOL-Bref was used as main measure of QoL, and client-specific circumstances, features of subjective and professional quality of care, and diverse care management variables were used as potential arguments in multivariate data analyses. The results show that the determinants of QoL in home care clients are largely similar as in adult population in general, but the situation of being care-dependent is emphasized by high importance of psycho-social and environmental factors. For clients, it is important that care is responsive to their everyday needs, and care workers kind and understanding. For a good professional quality, goal-orientated care planning and interventions, good care documentation, teamwork and use of prophylaxes are important. Care management and leadership style can have a direct impact on care outcomes. In the improvement of the quality of home care outcomes, more attention should be paid on good care documentation and in quality of management. In the evaluation of care outcomes, the client feed-back on effectiveness and quality of care should be strengthened. The Care Keys models and instruments provide useful tools in this respect, and the Care Keys theoretical model of care-related QoL is a useful conceptual framework for the research of QoL amongst care-dependent people living at home.

880. DETERMINATION LIFE QUALITY OF ELDERLY AND RELATED FACTORS IN A DISTRICT OF ANKARA, TURKEY

S. Vaizoglu, D. Aslan, M. Kaya, B. Dursun, A. Erayman, C. Doruk, O. Ertekin, T. Gulen, U. Dokur, V. Bicici (Hacettepe University; sacar@hacettepe.edu.tr)

Objective. Life quality may be defined as «individual's perception of their position in life in the context of the culture and the value systems in which they live and in relation of their goals, expectations, standards and concerns». In this study, it was aimed to determine the life quality and the related factors of 65 years of age and older individuals in the catchment area of a Primary Health Care Unit (PHCU) in Ankara, Turkey. *Materials and Methods.* PHCU records were used to determine the participants. There were 347 registered people at this age group and 73.5% of them participated in this study (255 people). Data was collected by using a questionnaire form including Short Form-36 (SF-36) by face to face interview in October, 2006. Statistical Package for Social Sciences (SPSS) program was used for data entry. Independent samples t- test was used in comparison of the group scores. Short Form 36 (SF-36) which was validated for the Turkish culture was used to determine the quality of life of the elderly. *Findings.* Mean age of the participants was 70.21 \pm 4.5, and the median was 69 years of age. Majority of the people were females 54.9%; (140 people), and 45.1% of them were males (115 people).

Only 0.4% (2 people) worked. Nearly half of the participants (46.3%; 118 people) were illiterate and 82.0% (209 people) stated that they had at least one chronic disease of which the majority was the cardiovascular system diseases. For the question «What do you understand from the quality of life?» the responses were «being healthy, economical well-being, and being happy». The majority of the elderly defined their current health status as «fair». The mean score for the general health area was 54.88 ± 7.87 . The mean scores from the other areas were as follows; physical function 62.39 ± 24.95 , physical role 56.86 ± 40.13 ; vitality 43.90 ± 15.84 , mental health 54.03 ± 13.13 ; emotional role 66.66 ± 42.65 , body pain 56.83 ± 22.08 and social function 66.97 ± 23.07 . The scores of physical function, physical role, vitality, emotional role, body pain, social function were statistically higher among males than females. In all the SF-36 areas, 70 years of age and younger's scores were statistically higher than that of the group older than 70 years of age. The literate groups' and the healthy elderly's scores in all the above mentioned areas were higher than that of the illiterate and ill group. Physical function, vitality, mental area and emotional role scores were higher in the group who were doing regular physical exercise. *Conclusion.* The results of this study recommend that the scores from the components of SF-36 were low for the study group and some of the determinants were sex, age literacy, chronic disease, and regular physical exercise. The ways of increasing the life quality of the elderly should be strengthened and promoted and the PHCU staff may play a crucial role for this purpose.

881. TRAINING ON DRUGS SELF-ADMINISTRATION IN THE ELDERLY

N. Varela, A. Maseda, B. Nespereira, P. Marante, L. Lodeiro, J.C. Millan-Calenti (Gerontology Research Group and Adult Day Care Center La Milagrosa. University of A Coruna, Spain; nati.enfermeria@centrolamilagrosa.org)

Nowadays we could say that most of the people over 65 follow some medical treatment. The fact that this group has a dependent disease means that many of their life daily activities have to be performed by their formal or informal caregivers who very often, assume more duties than necessary, which implies even more limits for these dependent elders. The main aim of this study was to test a reinforce programme in order to: a) know the level of knowledge the users had on the medication they took; b) increase their information on the treatment they followed; c) the non-necessity of a caregiver for the drug administration; and d) monitor the administration at their homes with the help of the family. 14 people were selected from a Gerontological Day Care Center. Inclusion criteria: to be under medical treatment and to have punctuation equal or over 7 in the immediate memory section of the Mini Exam Cognoscitive (MEC). We asked the families of these patients to approve their participation in the reinforce program and also their own participation. First, the patients were evaluated using a self-prepared questionnaire to know their knowledge about their medical treatments. Then, they were informed in a personal interview about the drugs they were taken, the doses, and their prescription. The process would be repeated in every daily dose. Based on the questionnaire, 93% of patients had the awareness of being taking some medicines but surprisingly 86% didn't know the reason why; 65% out of the 93% recognised the medicines though this percent-

age decreased when asking them the time of the day they took them and the dose; 71% didn't remember for how long they had been under treatment and only 50% recognised who was providing them with the drugs. After the reinforce programme, all 100% increased the knowledge about their own treatment and all participants agreed with the supplied information on their treatment. As conclusion, the programme improved the level of independence in the drugs administration and in relation to the caregivers, who tend to assume overprotective conducts fomenting the elder dependency.

882. HELPING TO TERMINAL PATIENT IN THE END LIFE

C.S.F. de la Vega (SERGAS, Primary care, LUGO, SPAIN; comesues@mixmail.com)

Introduction: When a patient is informed about an illness by his/her family doctor, that he/she suffers a cancer, at the moment, he feels his/her life has an end. The patient begins to think, in death as real something that it can happen and is nearby in time. He begins to feel fear. Fear is an instinctive reaction of survival. Subconsciously he/she establishes a mechanism of survival that can generate anxiety and this will lead him/her to through for different phases of depression. All it lived as a stressful situation, that is necessary and we must control it. *Aim:* To facilitate the medical cares to the terminal patients, we follow a performance guideline that conjugates the principles of the bioethic (autonomy, beneficence, nonmaleficence and justice), and avoids conflict, when applicable to the clinical practice. *Method:* (1) First of all, we are able to communicate to the patient as he/she can face the disease. The impact the words used in the information given to the patient, if they are not the right words, they can cause fear and anxiety in the patient. (2) Any therapeutic measure to be undertaken in the patient, it must keep in mind his/her principle of autonomy. We must verify what the patient wants to know about the disease, always being sure, the patients exercises the principle of autonomy. We have to consider the information given to the patient, it can not annul the principle of beneficence of medical act, because an information, although it can be right, cannot be adequate for the patient, causing more bad than well. (3) When the patient asks about the course of the disease, we must consider the principle of nonmaleficence and beneficence, giving a true answer do not annuls the principle of beneficence in medical act. We are only obliged to answer about the disease, what we know with certainty. This helps both the patient and the physician, since it is the course of the disease gives answers, and so patient assumes progressively his/her state of health. (4) Finally we must avoid therapies leading to a Life-sustaining. *Results:* By using this single methodology in primary care, we have facilitated the fourteen terminal patients' keeping in mind the principles of bioethic and helping to the patient and his/her family in the end life. *Conclusions:* GP and Nurses in primary care are the most adequate staffs for helping the patient and his/her family to spend this difficult experience.

883. DEVELOPMENT OF GERIATRICS IN LATVIA (1997–2007)

A. Vetra, J. Zalkalns, A. Slokenberga, D. Robalde (Riga Stradins University, NRC –Vaivari, Latvia; gedina@inbox.lv)

On the initiative of rehabilitation specialists of Latvia a new speciality was founded in the country — the

Association of Gerontology and Geriatrics of Latvia. Its main task was to inform and educate the specialists working in health care about the aging problems. This task is carried out by the association itself and in collaboration with other associations of health care specialists and with Riga Stradins University (RSU). New study courses in gerontology, geriatrics and gerontopharmacology were created and introduced in the Faculty of Rehabilitation. The members of the Association of Gerontology and Geriatrics have meetings with older population on regular basis by delivering lectures on the aging problems in senior clubs, societies. Special attention is paid to promoting and facilitating healthy aging and understanding by involving radio, TV and other mass media. During the recent years the investigation of aging problems has become the topic one. The doctorate study programme in Geriatrics has been introduced in Riga Stradins University. There is a team of professional teaching staff that ensures the residency studies in Geriatrics in Riga Stradins University, which was created on the basis of joint study programme in the academic year 2001/2002; 80% professors from RSU and 20% from Sweden. In the frames of the Pilot project carried out in Latvia the first 7 specialists in Clinical Geriatrics with Internationally recognized Certificate were trained. During 10 years fundamental changes have been introduced in the old age patient health care and rehabilitation. Since 1999 the programme in Gerontology have been carried out in the National Rehabilitation Centre –Vaivari”, within this programme 1500 patients have received gerontorehabilitation services. In November 2000 a specialized State Clinical Gerontology centre with 70 beds was opened in Latvia. The team work principle with a physician rehabilitologist, nurse, nurse assistant, rehabilitologist, physiotherapist, occupational therapist, psychologist has been applied in providing the rehabilitation services. From the start of the functioning of the centre the health care services are provided to more than 12 000 patients. *Conclusions:* The solid work during the 10 years have enabled to form a circle of scientists, pedagogues, health care persons and rehabilitation specialists who can be considered to be the core of persons who are carrying forward the problems in geriatrics, that could be in its turn considered to be one of the essential preconditions for the development of the field of geriatrics in Latvia.

884. OLDER PEOPLE ATTENDING UNIVERSITY EDUCATIONAL PROGRAMS: A COMPARISON BETWEEN MODELS IN SPAIN

F. Villar¹, S. Pinazo², C. Triado¹, J. Montoro³, C. Sole⁴, M. Celdran¹ (¹University of Barcelona, Spain, ²University of Valencia, Spain, ³Kent State University, USA, ⁴Ramon Llull University, Spain; fvillar@ub.edu)

Participation of older people in courses and educational programs organized by universities is a widespread phenomenon across Europe. However, the nature of these programs is quite variable. The aim of the present research is to compare the motivations to attend, how older learners evaluate different kind of university programs, and what kind of gains in their life have been stimulated by program attendance. Specifically, we have compare three types of programs: programs organised as a set of independent conferences (model 1), programs designed with an integrated curriculum, similar to regular university degrees but

adapted to older people (model 2), and programs with an integrated curriculum that include intergenerational contact, since the curriculum also includes some regular university courses where older learner mix up with ordinary younger students (model 3). The sample was composed of 627 people of 55 years old and over. The participant completed four instruments: a questionnaire about motivations to attend the university program, a questionnaire to evaluate different aspects of the program (teachers, methodology, facilities, etc.), two incomplete sentences in which the participant was prompted to tell the best feature of the program and the thing he/she would improve in the program, and a questionnaire of possible gains stimulated by attending the program. Results show that the profile of participants was different between programs. Participants tended to be younger in model 2&3. Also, in these models the percentage of males was higher, compared to model 1. Some of the motivations to attend the programs raised significant differences between programs. Particularly, knowledge-oriented motivations were higher in model 3, whereas social motivations were more important in model 1. Satisfaction and the general evaluation of the course were excellent in every program. However, participants who belonged to models 2&3 rated significantly higher aspects related to the methodology, degree of participation and relationships with other students, whereas they were more critics about organization and facilities. As for perceived gains promoted by attending the program, they are focused in an increasing self-satisfaction and more capacity to enjoy life. In a slightly lesser degree were rated an increase in number of friends or feelings of being useful and productive. Particularly, participants in model 3 perceive significantly more gains than participants in models 1&3 in self-satisfaction and a greater increase in activity thanks to attending the program.

885. EFFECTIVENESS OF A CLIENT-CENTRED OCCUPATIONAL THERAPY INTERVENTION FOR INDEPENDENT-LIVING OLDER ADULTS: A RANDOMISED CONTROLLED TRIAL

P. De Vriendt, W. Peersman, M. Verbeke, D. Van de Velde (*Opleiding Ergotherapie, Kinesithérapie, Centrum voor Onderzoek, maatschappelijke dienstverlening en permanente vorming van de Arteveldehogeschool; patricia.devriendt@arteveldehs.be*)

Occupational therapy focuses on increasing or maintaining functional independence. The objective of this study is to evaluate the effectiveness of a client-centred occupational therapy intervention to improve the basic activities of daily living (B-ADL) and Quality of life in independent-living older adults. 158 independent-living older men and women with B-ADL functioning problems were recruited from 6 home care organisations. 85 were randomly allocated to the intervention group, receiving a 8-week client-centred occupational therapy intervention and 73 to a nontreatment control group. Trained interviewers evaluated the participant at baseline and after 8 weeks by means of a questionnaire, including the topics of the Bartel-index and 5 SF-36 dimensions (physical functioning, role limitations due to physical health problems, bodily pain, general mental health and vitality). Positive effects were found for B-ADL, bodily pain and general mental health. Implications for evidence-based occupational therapy practice will be discussed.

886. SATISFACTION WITH LIFE — ONE PARAMETER FOR DEFINING SOCIAL CARE OF THE ELDERLY

E.S. Vvedenskaya¹, I.I. Vvedenskaya¹, L.S. Shilova²,
B.A. Tolchionov³ (¹*Nizhny Novgorod State Medical Academy*, ²*Institute of Sociology of RAS*, ³*Regional Geriatrics Centre; evveden@rol.ru*)

The authors investigated the basic parameters of Self-preservation of the elderly». «Satisfaction with life» is one of the major self-preservation parameters. In our research, satisfaction with certain conditions of life in elderly individuals was examined. These conditions included; housing and resources, food, health services, leisure time, relations with family members and intimate acquaintances, and everyday contact with other individuals. Also included under the term, «conditions» are; the current state of ones health, an individuals employment status and his or her life as a whole. A fundamental sociological research was carried out by a method of inquiry using residents who were 60 years or older in the city of Nizhny Novgorod, one of the largest cities in Russia. In total, 1797 subjects were questioned. The questionnaire was adapted from a similar instrument for an international sample developed at the Russian Academy of Sciences Institute of Sociology. A factor analysis was applied to the basic types of items which indicated the subjects' «satisfaction with life». The factor analysis revealed the specificity of satisfaction with various aspects of life of the elderly. They appear to be able to compensate for a total dissatisfaction with selected aspects of life by achieving some satisfaction with two or three conditions which we investigated. The ability to compensate appeared to be an important social adaptation mechanism of the elderly. Having offered the elderly a selection of two or three aspects of life from which to choose appeared to have facilitated their choice of a greater «satisfaction» response for their life as a whole. This allowed for an allocation of groups of elderly to a higher satisfaction rate with varied aspects of life. It appeared evident to us that it is necessary to define the appropriateness of medical and social help for each group of elderly persons according to their «degree of satisfaction» responses to specific items used in this investigation. In short, adequate social or medical help is dependent upon the subjects' responses to the pertinent items in this study.

887. PRIORITY ACTIONS FOR END-OF-LIFE CARE ESTABLISHMENT FOR THE ELDERLY IN RUSSIA

E.S. Vvedenskaya¹, I.I. Vvedenskaya¹, L.V. Grinykova²,
A.P. Isaev², G.N. Larina² (¹*Nizhny Novgorod State Medical Academy*, ²*Regional Geriatrics Centre; evveden@rol.ru*)

The Nizhny Novgorod region demographic aging is amongst the highest in Russia. In 2005 the rate of 60 years and over people amongst the whole population in the Nizhny Novgorod Region reached 22.0%. It was Nizhny Novgorod where the first Geriatrics Center in Russia was founded in 1989. Since then the Geriatrics service has been established in the region. A network of different medico-social institutions for the elderly has been set up: geriatrics departments and outpatient clinics, nursing departments and hospitals, nursing homes, special homes for single elderly etc. A network of municipal centers including day centers has been developed in different districts. The main aims of these units are providing medical aid for old patients, rais-

ing their functional activities, life quality improving. But peaceful dying and end-of-life care are of crucial importance for the elderly and their families nowadays as most of the elderly have no access to qualified palliative and end-of-life care. Medical and social care for the elderly at the end of life mostly is managed by general practitioners (at home) and nursing homes' staff, and the trouble is that neither physicians/nurses no social workers or other staffs are prepared in good palliative care. Palliative care education is still not recognized. Today we can observe the first steps of palliative care (PC) development in Russia. Different PC units have been already established in 70 territories of the country. But almost everywhere PC is considered to be the care for cancer patients. But it is essential for every patient with life threatening illness and at the end of life. We hope to establish a special hospice for the elderly in our city and to create PC courses for geriatricians at the Geriatrics Center and the State Medical Academy. We find it necessary to educate all geriatricians and then all general practitioners and nurses in PC, to advocate for PC issues to be included into the official educational programs for medical students, nurses and postgraduates. We need to set up a renewed Gerontology Service model which will contain palliative/end-of-life care units/wards for the elderly with well educated staff. These units could be based in different facilities and institutions which provide medical and social care for the elderly including community based care.

888. ENVIRONMENT-RELATED QUALITY OF LIFE — IMPORTANCE FOR LATE ADULTHOOD

H.-W. Wahl (*Institute of Psychology, University of Heidelberg; h.w.wahl@psychologie.uni-heidelberg.de*)

This presentation starts from a classic citation now more than 25 years old, but still worth considering in its fundamental message: «The right to a decent environment is an inalienable right and requires no empirical justification.» (Lawton, 1980, p. 160). While it is true that person-environment fit in old age has generally improved since the 1980's in many European countries, the possible argument that the environment doesn't matter anymore for ageing processes and outcomes is not justified. Data from the European project ENABLE-AGE point to the fact that environmental barriers, e.g., in the area of housing, are still prevalent and even reveal similarity in their patterns in a scope of European countries with different socio-economic standard such as Germany and Latvia. On the conceptual level, though quality of life in the later years has always been linked with the environmental dimension, there is still a tendency to neglect or overly reduce the importance of the physical-spatial context for individual and societal ageing. Against this background, this presentation summarizes the main arguments and theoretical avenues why the environment matters as people age. We then present the recent findings of the ENABLE-AGE project based on a careful and rather comprehensive assessment of person-environment relations in nearly 2000 alone-living older adults aged 75 to 89, sampled from urban areas of five European countries. Findings underline the need for the simultaneous consideration of a range of housing-related variables on the objective and perceived level as well as a range of outcomes such as depression, well-being and autonomous functioning.

889. THE HOME ENVIRONMENT AND DISABILITY-RELATED OUTCOMES IN OLD AGE: A SYNTHESIS OF THE RECENT EVIDENCE

H.-W. Wahl¹, A. Fange², F. Oswald¹, L. Gitlin³, S. Iwarsson² (¹*Institute of Psychology, University of Heidelberg*, ²*Lund University*, ³*Thomas Jefferson University, Philadelphia, USA*; h.w.wahl@psychologie.uni-heidelberg.de)

The paper evaluates empirical evidence on the relation between the home environment and disability-related outcomes in old age. Analysis is restricted to the physical component of the home environment, private home settings, and the period 1997-2006. Informed by an adjusted version of Verbrugge and Jette's (1994) Disablement Process Model (DPM), we address two research questions: (RQ1) What is the current evidence regarding the relationship between the home environment and disability-related outcomes? (RQ2) What is the current evidence regarding the optimisation of the home environment and changes in disability-related outcomes? A literature search identified 26 studies and no review papers regarding RQ1 and 32 studies and 11 review papers regarding RQ2. The body of work was further qualified according to level of evidence (following Evidence-Based Medicine). Regarding RQ1, evidence supports a substantial relation between the home environment and disability-related outcomes, but most studies are cross-sectional (i.e. low level of evidence). Regarding RQ2, randomised controlled trials (RCT) (i.e. high level of evidence) focusing solely on the optimisation of the home environment tentatively reveal more positive than negative findings. RCT multi-component interventions including a home environment improvement component also tentatively produce more positive than negative findings. This also applies to studies located on lower levels of evidence. Persisting methodological problems include a lack of validity and reliability of the home environment assessment (RQ1) and pronounced differences in home-related interventions (RQ2). In sum, a fairly sound body of empirical work now exists regarding links between the home environment and disability-related outcomes. While there is empirical support for a substantial relationship between the home environment and disability-related outcomes, the evidence is inconsistent and not always strong in terms of levels of evidence.

890. AGEING AND POLITICS IN EUROPE

A.C. Walker (*University of Sheffield, UK*; a.c.walker@sheffield.ac.uk)

This paper provides an overview of the politics of ageing in Europe. It emphasises the development of new forms of the politics of ageing on three different levels. First, at the macro level, there are significant changes in public policy, some of which are linked to globalisation, which are affecting the socio-economic security of current and future generations of older people. A political economy of the EU and the nation states of Europe is required to understand this development. Second, at the meso level, some countries have seen the emergence of new organisations representing older people. Third, at the grass roots level, there is evidence of a recent shift in participation and local action. The barriers to and potential of such participation will be outlined.

891. DISCUSSION

A.C. Walker (*Sheffield Institute for Studies of Ageing, University of Sheffield, UK*; a.c.walker@sheffield.ac.uk)

Discussion of cross-national comparisons of social engagement and quality of life.

892. DISCUSSANT, SYMPOSIUM ON «RURAL COMMUNITIES: GOOD PLACES TO GROW OLD»

A. Warnes (*University of Sheffield, Sheffield Institute for Studies on Ageing (SISA), Sheffield, UK*; a.warnes@sheffield.ac.uk)

Symposium: Rural communities: Good places to grow old?

893. LIFE ACTIVITIES AND WELL-BEING

G. Windle (*Centre for Social Policy Research and Development, University of Wales, Bangor, UK*; g.windle@bangor.ac.uk)

Active ageing is considered by many to be crucial to well-being in older age. This paper focuses specifically on some of the types of activities that older people in Britain take part in. It examines the effect of activities on mental well-being in older age and profiles the characteristics of those who have little or no involvement in activities of any type. The data was obtained in face-to-face interviews using a structured questionnaire with 1847 people aged 50-90 in England, Wales and Scotland. This collected a wide range of data within the areas of social support resources, health and physical functioning, mental health and well-being, life activities and material resources. The results show that compared to those people who did not participate in any type of activity, well-being was better for those who were volunteers, were involved in productive activity, provided assistance to others, participated in sports, outdoor activities, hobbies or indoor activities and were engaged in cultural and civic activities. The characteristics of those who are not active includes being older, female and in worse health. The results highlight areas of activities where health promotion interventions could be beneficial to well-being and specific populations that could be targeted. In the UK there has been recent policy interest in the neglected area of mental health promotion. Taking this agenda forward the paper concludes by discussing current work in progress which is systematically reviewing the effectiveness of interventions that promote mental well-being in older age.

894. THE HEALTH AND ACTIVITY OF OLDER PEOPLE IN RURAL NORTH WALES

G. Windle (*Centre for Social Policy Research and Development, University of Wales, Bangor, UK*; g.windle@bangor.ac.uk)

Evidence from intervention studies demonstrates that exercise and activity have positive effects on health and well-being in older age. However opportunities for active participation in older age can be affected by a number of barriers. This paper examines the health related quality of life of rural elders, the types of activities undertaken and reasons for non-participation. The project reflects a participatory approach with older people being involved in the whole research process as co-researchers. Eighty two people (mean age = 81) living in the most remote areas of the county were interviewed in their own homes using

quantitative and qualitative techniques. Focus groups were held to further validate the results. Data includes a standard measure of health related quality of life and self reported health (EuroQol), types of activities and hobbies, reasons for non-participation, social resources and well-being. The results show that over three-quarters of the participants took part in some type of sport, exercise or outdoor activity and almost all were regularly engaged in hobbies. Health and mobility were the main barriers to participation. The focus groups elaborated on the importance of some of the key activities in the wider, social context. The paper concludes with recommendations for policy and health promotion initiatives.

895. ASSESSING RESIDENT PHYSICIAN'S ATTITUDES AND KNOWLEDGE TOWARDS OLDER ADULTS IN A TERTIARY HOSPITAL IN SINGAPORE

C.H. Wong, N.L. Lui (*Singapore General Hospital, Singapore, wong.chek.hooi@sgh.com.sg*)

Introduction: The medical community in Singapore is faced with a rapidly aging population. This would result in increased interaction between medical professionals and older adults. However, little is known about the attitudes of healthcare professionals of Asian ethnicity towards older adults. Hence, we sought to determine the attitudes and knowledge towards the elderly among the resident doctors from a Medical Department in the largest tertiary hospital in Singapore. *Methods:* A descriptive survey of resident doctors carried out during a luncheon, using a validated self-administered structured questionnaire. Data collected include the Kogan's Old People (KOP) scale for the evaluation of attitudes towards older adults, basic demographic and education variables were collected. *Results:* Fifty-one questionnaires were completed. The mean KOP score was 114.4 suggesting an overall positive attitude towards older people in this sample. The prevalence of negative attitude was 7.8%. There was no significant difference in attitudes among doctors with different designation, age, marital status, medical school attended, nationality, years in medical practice and living arrangement. Residents with previous exposure to a posting in Geriatric Medicine had higher KOP scores but was just out of significance ($p=0.098$). Respondents who found treating older people unrewarding had significantly lower KOP score ($p < 0.001$). *Conclusion:* In this sample of resident doctors, overall attitude towards older people as measured by the KOP scale was positive. Previous exposure to a Geriatric Medicine posting during residency may positively influence a doctor's attitudes towards the older adults.

896. THE RELATIONSHIP BETWEEN RELIGIOUS PRACTICE AND QUALITY OF LIFE AMONG THOSE AT THE BEGINNING OF OLD AGE

B. Wouniak, B. Tobiasz-Adamczyk, M. Kopacz (*Faculty of Medicine, Krakow, Poland; abajka@tlen.pl*)

Aim: The aim of this study was to examine the relationship between time devoted to religious practice and quality of life in a cohort of individuals aged 65 years. *Materials and Methods:* A random selection of 733 individuals resident in Kraków (421 women and 321 men) took part in this socio-medical study. Data was collected through face-to-face interviews using a structured questionnaire. Quality of life was measured using the following

scales: Life Satisfaction Index, Geriatric Depression Scale, Groningen Activity Restriction Scale, SF-36. Time devoted to religious practice was based on time spent on prayer and religious services throughout the week, including Sundays. Nonparametric tests (Kruskal-Wallis and Jonckheere-Terpstra) were used for statistical analysis due to non-Gaussian distribution of the variables. *Results:* For women, there existed a statistically significant relationship between religiosity and being restricted in their roles due to health reasons (greater religiosity was paired with greater restrictions). Similarly, in both genders, frequently participating in religious practices was related to greater role restrictions due to one's emotional state. Women and men who devoted the most time to religious practice had a smaller social network than those devoting less time. For both genders, those most involved in religious practices indicated greatly reduced stress in the relationship with their partner and not being as affected by stressful family situations. Males devoting more time to religious practice also scored higher on psychological health scales. Greater religious practice was found in males reporting worse general health perception as well as worse functional state assessment. Greater religiosity could be found in both men and women leading a more health-conscious lifestyle, especially in terms healthy dietary habits. *Conclusions:* Greater religiosity was related to role restrictions (due to health status or emotional state) and a smaller social network. Those reporting greater religiosity also cited less stress in family relations. In men, religiosity was related to psychological health, health perception, and functional state. These relationships were not found among women. A high level of religiosity was related to positive health behaviors in both groups.

897. EFFECTIVENESS OF A NON PHARMACOLOGICAL COGNITIVE INTERVENTION ON ELDERLY: FACTORIAL ANALYSIS OF DONOSTIA LONGITUDINAL STUDY

J.J. Yanguas, C. Buiza, I. Etxebarria, E. Urdaneta, N. Galdona, M.F. Gonzalez (*Matia Gerontological Institute Foundation, Donostia, Spain; jyanguas@fmatia.net*)

Background: There has been very limited research of non pharmacological therapies in elderly people. In the present paper the results of a cognitive therapy are described. *Objective:* The aim was to investigate if in the experimental group number one a different profile was observed. *Method:* **Subjects:** 238 community dweller elderly people were enrolled in the study. The Global Deterioration Scale (GDS) was 1–2 distributed in 3 groups: experimental group number one (followed a specific cognitive intervention), experimental group number two (didn't follow a specific intervention) and control (didn't follow any intervention). The study lasted two years. **Theoretical model:** The cognitive intervention applied in the experimental group number one was based in Braak & Braak's neuropathological model, although several modifications were done by the authors. This model is based on the existence of a different anatomopathologic correlate that affects to different cerebral areas in several phases of the Alzheimer's disease. **Neuropsychological assessment:** The following variables were measured: attention and orientation, memory, language, visuoconstructive skills, executive functions, visomanual coordination and praxis. *Results:* Factorial analyses two dimensions identified. The first one was related with the disease evolution differences between patients, which represents a pattern of general evolution.

However, in this first factor there were not find significant differences depending on the group condition (experimental group number one, experimental group number two, or control) age related differences were only stated. The second factor represents a crux of stability in the scores. This factor distinguish between some participants who maintain stability in the scores, locating them in a positive area, and elderly people that experimented changes, locating them in the negative area. Participants in the experimental group number one, people between 65 and 69 years, and those belonging to GDS 2 group, maintained their scores more stable than the average. *Conclusion:* It is possible to distinguish two factors. The first one represents the persons that improve their scores. In this group, the differences are not related to person's group but with the age. The second one represents persons that maintain stable their scores. In the last factor there was a bigger amount of participants from the experimental group number one. The cognitive interventions are effective in a sample of elderly people without cognitive decline or with memory subjective complaints.

898. STRUCTURE OF HEALTH RELATED QUALITY OF LIFE: DIFFERENCES DEPENDING ON AGE

J.J. Yanguas, I. Etxeberria, N. Galdona, C. Buiza, E. Urdaneta, D. Prieto (*Matia Gerontological Institute Foundation, Donostia, Spain; jyanguas@fmatia.net*)

Background. There has been limited research on health related quality of life in elderly, although has been considered as a multidimensional important concept. *Objective.* One of the aims of the study was to investigate the factorial structure of the health related quality of life in elderly. The identification of the main domains of its functioning would allow developing adequate intervention programs. *Methods.* The randomized sample consisted of 500 elderly living in nursing home settings. The average age was 79.23 yr and the standard deviation was 9, 42 yr. The variables and the instruments used to measure them were: (1) Social support: Social resources (OARS) (2) Depression: Geriatric Depression Scale (GDS) (3) Anxiety: Sub-scale of Anxiety of the Anxiety and Depression Scale of Goldberg (EADG) (4) Vital Satisfaction: Satisfaction Scale of Philadelphia. (5) Functional capacity: Barthel Scale (6) Health perceived: General Questionnaire of Health (Goldberg). (7) Cognitive functioning: (8) Mini Examen Cognoscitivo (MEC) (9) Abbreviate Questionnaire of Mental State (SPMSQ) (10) Quality of life related to health: Sheets of COOP-WONCA. The SPSS statistical program was used. A factorial analysis was carried out. *Results.* According to different age ranges, the variability of health related quality of life it's explained by: 65–69 yr, from 65,3% of the explained variance, the anxiety explains 59,1%, whereas vital satisfaction explains 6,2%. 70–74 yr, depression explains the 54,3% of the explained variance. 75–79 yr, from 55% of the explained variance, depression explains 41,1%, anxiety 6,1%, not related to memory cognitive functions 4,9% and cognitive functions related to memory 2,9%. 80–84 yr, from 59,1% of explained variance, 44,8% is explained for vital satisfaction, 6% for depression, 3,9% for cognitive functions not related to memory, 1,5% for the perceived health, 1,2% for cognitive functions related to memory and 1,7% for performance on activities of daily living. 85–89 yr, 54,2% from explained variance, vital satisfaction explains 46,1%, anxiety 6,7% and depression

1,4%. 90–94 yr vital satisfaction explains the overall of the variance (55,8%). 95–99 yr, perceived health explains 70,7% of the variance. Affective functioning is the most influential variable, except in the oldest ones where perceived health is the most influential variable. *Conclusions.* We conclude that the age is an important factor to have into account when developing intervention programs. It's necessary to adapt the domains of intervention depending on the age of the participants in order to achieve elderly peoples' needs.

899. INCORPORATING FUNDAMENTAL PROPERTIES OF AGING TO MODELS OF LONGITUDINAL DATA

A.I. Yashin, K.G. Arbeev, I. Akushevich, L. Akushevich, A. Kulminski, S.V. Ukraintseva (*Duke University, Center for Population Health and Aging, Durham, USA; aiy@duke.edu*)

Ageing-related changes in a human organism follow dynamic regularities, which contribute to the observed age patterns of incidence and mortality curves. The internal senescence process changes organism's «optimal» (normal) physiological state, affecting the values of risks of disease and death. The resistance to stresses, as well as adaptive capacity, declines with age. An exposure to improper environment results in persisting deviation of individuals' physiological (and biological) indices from their normal state (due to allostatic adaptation), which, in turn, increases chances of disease and death. Despite numerous studies investigating these effects, there is no conceptual framework, which would allow for putting all these findings together, and analyze longitudinal data taking all these dynamic connections into account. In this paper we suggest such a framework, using a new version of stochastic process model of aging and mortality. Using this model, we elaborated a statistical method for analyses of longitudinal data on aging, health and longevity and tested it using different simulated data sets. The results show that the model may characterize complicated interplay among different components of aging-related changes in humans and that the model parameters are identifiable from the data

900. COMORBITY AND ANTIEPILEPTIC TREATMENT OF ELDERLY EPILEPTIC PATIENTS IN SPAIN

R. Yubero¹, J. Salas-Puig², G. Garcia-Ribas³, C. Bas⁴, D. Sanchez⁴ (*¹Hospital Clinico de Madrid, ²Hospital General, Oviedo, ³Hospital Ramon y Cajal, Madrid, ⁴Janssen Cilag, Madrid, Spain; ciguzman@jaces.jnj.com*)

Objectives: To evaluate the comorbidity, describe the antiepileptic drug treatment provided and to assess the impact of illness on the quality of life of elderly epileptic patients. *Material and Methods:* Crossover epidemiological study of the clinical practice conditions in Spain. The total number of patients who attended to the Neurological services in 62 centres were registered during 5 days. For those patients diagnosed with epilepsy or that presented with a first seizure at 65 years of age or older, information related to demographic characteristics, family history, comorbidity and treatment were collected for their assessment. *Results:* A total of 3085 patients >65 years old were registered initially. 177 of them met the necessary selection criteria to participate in the study. 81,9% of selected patients presented with a concomitant illness, the most frequent being high blood pressure (40,7%), acute stroke (35%), high cholesterol serum levels (24,3%), diabetes

(21,5%), ischemic cardiopathy (14,1%), digestive pathology (9,6%) and dementia (7,9%). Drugs for prevention of acute stroke, ischemic cardiopathy, hypertension and high cholesterol serum levels were most frequently used as concomitant medication within the study population. 75% of patients had received antiepileptic therapy prior their participation in the study. Monotherapy was the most frequent therapeutic regimen provided to the patients (70%) followed by 12% of evaluated patients that received multi-therapy regimen. The drugs most frequently used as monotherapy after the study visit were: Topiramate (19,8%) followed by lamotrigine (14,7%). An important decrease in the quality of life of the recruited patients was observed through the questionnaire SF-12, especially in both, the physical (40,37) and mental (46,11) components of the teSt. *Conclusions:* The most frequent pathologic comorbidities found in epileptic elderly patients were: Hypertension, acute stroke, high cholesterol serum levels and diabetes. 75% of assessed patients had received antiepileptic drugs prior to the study visit. Monotherapy was the most common type of regimen used. Topiramate was the most commonly used antiepileptic drug as monotherapy as part of the regimen for this study population. The quality of life of the patients assessed by SF-12 was worse than in the general population, specifically in the physical domain.

901. EPILEPSY AND EPILEPTIC SEIZURES IN SPANISH ELDERLY PATIENTS

R. Yubero¹, J. Salas-Puig², G. Garcia-Ribas³, D. Sanchez⁴, C. Bas⁴ (¹Hospital Clinico de Madrid; Geriatriy, Madrid, Spain, ²Hospital General, Neurology, Oviedo, Spain, ³Hospital Ramon y Cajal, Neurology, Madrid, Spain, ⁴Janssen Cilag, Neurology, Madrid, Spain; ciguzman@jaces.jnj.com)

Objectives. To assess the incidence of epileptic seizures, the prevalence of epilepsy and to determine the most frequent reasons for consultation to neurology services under clinical practice conditions by the elderly population in Spain. *Material and Methods.* Crossover epidemiological study of the clinical practice conditions in Spain. All patients who attended to the Neurological services in 62 Centres were registered during 5 days. For those patients diagnosed with Epilepsy or who consulted due to a first seizure at 65 yr old or more, information related to demographic characteristics, family history, comorbidity and treatment were collected for their assessment. *Results.* 3085 patients >65 yr old attended in the Neurology clinics were included in the study. The most frequent clinics attended were: Hospitalary: 48%, Outpatient: 38,0% and specific for epilepsy: 9,2%. 758 patients from the total population consulted due to epilepsy (27,6%) with a prevalence of epilepsy in the group >65 yr of 9,9%. The incidence of epileptic seizures within the study period and in the study group was approximately 1,8%. The diagnosis of epilepsy was made in 249 patients (8,1%). The median of age for epilepsy diagnosis was 71 yr old. The median number of seizures was 5. Approximately 4,5% of patients studied had family history of epilepsy. 59,3% were males and 40,7% females. The main reasons for consultation were as follows: Dementia (18,7%), CVA (16,8%) and Parkinson's disease (14,0%). 60,5% and 32,2% of patients presented focal symptomatic epilepsy and focal

Cryptogenic epilepsy respectively. Accordingly to the type of crisis, 42,4% presented partial seizures with secondary generalization followed by single partial seizures (28,8%), complex partial seizures (26,6%) and generalized tonic-clonic seizures (16,9%). *Conclusions.* The incidence and prevalence of epilepsy in the studied population (>65 yr) were 1,8% and 9,9% respectively. The prevalence of late onset epilepsy was approximately 8,1%. The most important places for consultation were the hospital and outpatient clinics. Epilepsy was the main reason for neurological consultation in patients >65, followed by dementia, CVA and Parkinson's disease. The most frequent types of epilepsy in the study population were focal symptomatic and focal cryptogenic. Secondary generalized seizures were the most frequent types of seizures.

902. CORRELATION BETWEEN EDUCATIONAL STATUS AND QUALITY OF LIFE IN ELDERLY

H. Yuçel (Hacettepe University; hulya.yucel@gmail.com)

Aim: To show the effect of educational level on life satisfaction in elderly. *Material and Methods:* 40 elderly who live in private rest home were included in this study. Demographic features such as age and sex etc. were recorded. Educational status were asked if they illiteracy, literacy but not finished the school, finished primary school, secondary school, high school or university. Life Satisfaction Index (LSI) was used to assess quality of life related to general health. The SPSS 13.0 was used for statistical analysis. *Results:* There were 15 (%37) male and 25 (%63) female elderly with a mean age of 78.8±10,1 years (range 65–108). 3 (7.5 %) of 40 were illiteracy. 5 (12.5%) literacy but not finished any school. 10 (25%) elderly were graduated primary school and 6(15%) were university. LSI score was 22,9±8,9. There was not a correlation between educational status and life satisfaction (>.05). *Conclusion:* The life satisfaction was independent from educational level in this study. Life satisfaction is high although illiteracy elderly are many in Turkiye.

903. EFFECT OF GERIATRIC DEPRESSION ON PHYSICAL PERFORMANCE

H. Yuçel, H. Kayihan (Hacettepe University; hulya.yucel@gmail.com)

Aim: To determine the effect of depression on physical performance in elderly. *Material and Methods:* 40 elderly who live in resthouse were included in this study. There were 15 (%37) male and 25 (%63) female elderly with a mean age of 78.8±10,1 years (range 65–108). Depression was assessed according to Turkish version of 30 point-Geriatric Depression Scale (GDS). Physical Performance Test (PPT) was used to assess performances of older people on some daily activities such as dressing, writing etc. The statistical analysis of relationship between GDS and PPT were investigated by using SPSS 13.0 program. *Results:* The mean score of GDS was 10.9±7.46; PPT was 17.85±9.41. The strong relationship between GDS and PPT were found (p<0.05, r=0.39). *Conclusion:* The relationship was meaningful although the number of the subjects is not many. We concluded that geriatric depression decreases physical performance. If there is depression we must make older people physically active on their daily living.

904. COMMUNITARY GERONTO PSYCHIATRY ASSISTANCE — A REAL NECESSITY

A. Zamfirescu¹, M. Gurgu², A.M. Corbu¹ (¹Ana Aslan National Institute of Gerontology and Geriatrics, Bucharest, Romania; ²Ambulatory of the Emergency Clinical Hospital Brasov; andrea.zamfirescu@gmail.com)

Introduction: The elderly that are now taken care of at a community level were born at the beginning of the 20th century. They survived two World Wars and grew old in a society which stated that «socialism would never face issues such as biological, social or economic dependency», things that were eventually proved wrong. The purpose of the study was to compare the group of 60 plus year old patients that are followed up in a Geriatric Day Care Center with geriatric patients who do not benefit from such services, patients from the Geriatric Ambulatory. Patients were followed up for 6 months, from the 1st of August 2006 until the 30th of January 2007, and the prevalence of psychiatric disease as well as their outcome was evaluated. We also studied rates of different comorbidities in the two groups, and the therapeutical possibilities, both pharmaceutical and non-pharmaceutical. *Methods:* In the first group we had 120 patients who benefit from the Geriatric Day Care Center's services from the Ambulatory of the Emergency Clinical Hospital in Brasov. In the second group there were 80 patients who do not benefit from such services. Patients from both groups were assessed with specific geriatric tests in order to evaluate cognition: MMSE, the clock test; depression: a geriatric scale of depression, and functionality: ADL, IADL. *Results:* In the first group the prevalence of psychiatric disorders was of 13.3 % (17p/ patients had symptoms of anxiety, depression, MCI), HBP at 67.5% (81p), CCF NYHA 2: 10.83% (13p), ischemic cardiac disease: 56.6% (68p), rhythm and conductivity disorders: 6.6% (8p), chronic venous insufficiency: 10% (12p), COAD: 2.5% (3p), degenerative arthropathy 45% (54p), dislipidemia: 8.3% (10p), type 2 diabetes mellitus: 6.6% (8p), glaucoma 4.14% (4p), DU and GU (duodenal and gastric ulcer) 3.2% (4p), other gastrointestinal diseases: 15p etc. In the second group there were 12.5% patients with psychiatric disorders such as anxiety, depression, MCI: (15p), with HBP: 58,3%-70p, ischemic cardiac disease: 50%-60p, degenerative arthropathy: 54,16%-65p, dislipidemia: 16,66%-20p. *Conclusions:* Since in the elderly psychiatric disorders frequently coexist with somatic, social and functional disorders, it is extremely important to develop a well structured program, in order to enlarge the number of elderly properly evaluated, treated and educated regarding geronto-psychiatry on a community level. Communication between specialists in all fields must be developed as well, in order to prevent from useless polypharmacy with all the sides effects that we are all aware of.

905. TRANSITION INTO CARE NEED IN WEST GERMANY 1986-2005

U. Ziegler¹, G. Doblhammer² (¹University of Rostock, ²University of Rostock; MPIDR, ziegler@demogr.mpg.de)

The tremendous changes in the population structure of developed countries will have far reaching consequences

for the society as a whole. It has been repeatedly pointed out that the increasing share of the elderly population may result in an increasing demand for care. Three hypotheses of the development of health have been put forward: the 'compression-of morbidity' hypothesis, the 'expansion-of morbidity' hypothesis and the 'dynamic-equilibrium' hypothesis. The outcome is extremely important for the estimation of the future number of people in need of care. Do people live longer because they live longer with illnesses or because they are healthier? For the estimation of future trends past trends have to be analysed. So far no consistent results over countries could be seen. We analyzed the transition into care need of people above age 60 living in West Germany between 1986 and 2005. Data from the German Socio-economic Panel was analyzed longitudinally with event-history models. We divided the time into two periods 1986-1995 and 1996-2005. Over time we find an increase of care need for each successive cohort during the first period. However, this effect reverses in the second period. These results are consistent with many findings from the literature, where during the 80s an expansion of morbidity was found but a compression of morbidity during the 90s and early years of this century (e.g. Robine et al. 2003, Crimmins et al. 1997). The transition rate into care need is about the same for females and males. As expected we find a positive influence of higher education which gives hope to further decreases of care need, since future elderly cohorts increasingly will have participated in the education expansion that started in the 60s. Also higher income has a positive effect on a lower incidence. Since the institutional population is not included in the SOEP data our results regarding household type and marital status are influenced by this fact. People with a social network can stay longer at home in case of care need. Thus, the aging of the population will not necessarily be accompanied by a parallel rise in the number of frail people; there is a good chance that the gained years in life expectancy will be spent in good health.

906. USING MDS RESIDENT ASSESSMENT INFORMATION TO FOCUS QUALITY IMPROVEMENT PROGRAMS

D.R. Zimmerman, E.N. Antonova (University of Wisconsin-Madison; davidz@chsra.wisc.edu)

This presentation will describe the development of quality measures based on information in the Minimum Data Set and how the measures are used in quality assurance and improvement programs in the United States. Descriptive statistics on the prevalence and incidence of selected quality measures for the United States will be presented, along with examples of the variation in prevalence rates across U.S. regions. Examples of how the measures have been used for benchmarking of nursing homes will be presented. The presentation will also include a description of how the measures have been combined with root cause analysis protocols for use in quality improvement efforts in U.S. nursing home corporations.

LAST MINUTE UPDATE

907. ASSESSING ELDERS ATTITUDES ABOUT QUALITY OF SOCIAL SUPPORT IN NURSING HOME

H. Abedi¹, S. Salarvand² (¹Islamic Azad University, Khorasgan Branch, Arghavanieh, Isfahan, Iran; ²Lorestan University of Medical Sciences, Lorestan, Iran; drhabedi@yahoo.com)

Introduction: The dramatic increase in the overall number of older adults currently in the population, and further increases expected, heightens the awareness of the need for adequate support for older persons living in the community. The elderly are particularly vulnerable to stress. Social support plays an important role in managing stress. Nevertheless, there are a few researches assess quality and intensity of relationships with others as a part of elders' social supports, especially elderly living in nursing homes. Researchers have found social supports protect elders against the harmful effects of stress and promote emotion and physical wellbeing. Older adults who are connected to active social networks and who receive informal social support have been shown to demonstrate better physical and mental health than those who are less connected and involved with others. For this reason, researcher intends to assess elders' attitude living in nursing home with regard to religious and cultural aspect in Iran. This study aimed understanding elders' perceptions of social support quality in their residency period in nursing home. *Method:* in this study, the qualitative phenomenological approach was used by several in-depth interviews with elders over a 9 months period, and applied purposive sampling amongst elderly residents in private and governmental nursing homes. Purposive sampling continued until data saturation was occurred when sample size became 10 participants. The data was collected by in-depth interviews. Researcher has used field notes for completing data collection process. Colaizzi's method applied for data analysis. The rigor of present study was based on transferability and credibility. *Findings:* The findings were including: 80 codes, 5 sub themes and two themes which was extracted from the research results (structural components of experience), including: 1-quality of informal social support in nursing home, 2- quality of formal social support in this setting. The sub themes of informal social support were: quality of relationship with family, friends' support, others' support and relationship with other residents and sub themes of formal social support were quality of relationship with staff. Each of them has sub concepts. *Discussion and conclusion:* In this study, there were three important elements in older people's attitudes, including: staff, family and other resi-

dents, have very much important in elder's life and provide social support network to elders. In present study, nursing home residents stated various degrees of relation with family and friends and others and sense of support from them. Some of residents have explained lack of family visitors and some of them satisfied for visiting friends, family and relatives. All of them stated other people's visits as encouraging and supporting.

908. ACTIONS, INCREASING VISION QUALITY OF ELDERLY AND OLD PATIENTS WITH ARTERIAL HYPERTENSION

L.E. Atahanova¹, E.P. Ahmedova² (¹Tashkent Medical Institute for Postgraduate Studies, Uzbekistan; ²Republic Cardiological Centre, Uzbekistan; svetlana@gerontology.ru)

In Uzbekistan, there is a high level of visual disability, mostly due to the disorders in retinal channels in patients with arterial hypertension. The main approach to the problem is prevention of these complications and revealing them at early stages. Eye fundus lesion is usually preceded by the stable increase in blood pressure indices, triggering functional changes in retinal vessels with further organic changes of vascular retinal bed, retina and optic nerve. Taking into consideration that 20-40% of patients got the diagnosis arterial hypertension accidentally, we should say that 75% of them do not undertake any treatment or this treatment is not effective. That is why it is important to reveal risk factors contributing to the lowering of visual functions in elderly and old people, as well as to reveal the prognostic significance of the factors, which worsen the disorders in the vascular retinal bed in patients with arterial hypertension. The conducted study (1540 patients with arterial hypertension) led to the following conclusions: a) the lack of timely and regular treatment of arterial hypertension leads to the development of the organic changes in target-organs, such as eye retina, this leads to the loss of quality of life and to early disability with loss of vision, b) to prevent disability of population it is necessary to conduct obligatory clinical examination in order to reveal arterial hypertension starting from the age of 35-40, in particularly paying attention to the patients aged 50-59, c) besides ECG and EchoCG tests, blood biochemical test the patient should undergo ophthalmologic examination, as revealing changes of the eye fundus together with results of the ophthalmologic tests can contribute to the early diagnostics of arterial hypertension.

909. MAJOR DEVELOPMENTS AND TRENDS IN GERIATRIC EDUCATION IN UKRAINE

V.V. Bezrukov (Institute of Gerontology AMS Ukraine; admin@geront.kiev.ua)

In Ukraine, an efficient provision of geriatric medico-social servicing and care depends on coordinated efforts of two systems — Health Ministry (HM) and a Ministry of Labour and Social Policy (MLaSP), as well as on geriatric education and training of personnel in both systems. The *pre-diploma geriatric education of physicians and nurses* for MH is carried out in the HM educational institutions and that of social workers and nurses for MLaSP system — in the MLaSP institutions. The *post-graduate geriatric education and training of physicians* is carried out at the National Academy of Postgraduate Education of Physicians (NAPEP). Annually nearly 200 general practitioners undertake this study course, lasting from one to four weeks and being held either in the Academy or on-site (in regional hospitals). This training is budget covered. Also, a special course is given to the trainers (medical university teachers). *Post-graduate training of nurses and social workers* is given in hospitals or specialized courses. Curricula include issues of normal aging, specificity of disease course, care and treatment of elderly patients, as well as psychological and social dimensions. The range and scope of curricula depends on the audience (trainees — physicians, nurses, social workers, etc.). Geriatric education programs are based on research agenda of the Institute of Gerontology AMS Ukraine (IG) and are approved by both HM and MLaSP. Recent developments include the opening of a National educational-methodological Center, under NAPEP and IG aimed at geriatric training of physicians, nurses and paramedicals not only from HM but also from MLaSP system, on the one hand, and the development/publication of manuals and text-books for practitioners, on the other. Future strategies will be: a) raising awareness and changing attitudes of authorities and students; b) a wider implementation of gerontological/geriatric issues into curricula of medical students and professionals, social workers, paramedicals and volunteers; c) introduction of innovative approaches to geriatric training (teaching technologies, web-based distance education, etc.).

910. HYPOTHALAMIC EMOTIOGENIC ZONES AND THE GERONTOGENESIS

V.V. Bezrukov, T.A. Dubiley, Yu.E. Rushkevich (Institute of Gerontology AMS Ukraine; admin@geront.kiev.ua)

Emotiogenic zones of the hypothalamus, as integral centers, regulate various kinds of metabolism and behavior, vegetative and endocrine functions and, hence, play an important role in adaptation processes. In this study we found that chronic super threshold electrical stimulation of positive and negative emotiogenic zones of the hypothalamus variously influenced the viability of old rats. Thus, chronic 15 min electrical stimulation (during 1–3 months, 4 times a week) of positive emotiogenic zone of the lateral hypothalamic area (LHA) increased survivorship and lifespan of 29-month old rats, while analogous stimulation of negative emotiogenic zone of the ventro-medial nucleus (VMN) had an opposite action. LHA stimulation led, *firstly*, to the slowing of pace of aging (reduction of resting oxygen consumption rate, a reduced rectal temperature and a decreased food intake, decreased basic metabolism, energy spending and calorie intake, and, *secondly*, to the intensification of antiaging processes (increase of back-

ground electrical activity and frequency of self-stimulation of the LHA proper; increase of background electrical activity of caudate nucleus, hippocampus and ventromedial nucleus of the hypothalamus; increase (up to a level that is correspondent to adult animal level) of blood plasma corticosterone, thyroxin and testosterone concentrations and an increased dopamine metabolism and a decreased serotonin metabolism in the caudate nucleus; increase of animal mobility on rotating drum, improvement of active avoidance conditioned reflex maintenance, an increased time of animal stay in closed pathways of elevated plus maze, reduced time of animal stay on its deck and reduced numbers of grooming; rise of brain superoxide dismutase and splenocyte proliferative activities. Above-listed changes caused by LHA stimulation were opposite, by their direction, to the disadaptation shifts, typical of aging process. Negative effects of chronic VMN stimulation were obviously conditioned by essential hormonal status changes like a drastic rise of plasma thyroxin and testosterone concentrations and also by pathology development. The presence of the latter was evidenced from the rise of contents of secondary and end lipid peroxidation products in the brain and in the myocardium, and from the appearance of multiple destructive changes in cardiac muscle. In summary, the activity of emotiogenic hypothalamic zones ensures the viability of «successful» organisms via activating LHA and decreases the viability of «unsuccessful» ones via activating VMN, eliminating thereby unfit individuals.

911. COGNITIVE IMPAIRMENT IN ALZHEIMER'S DISEASE: THE FUTURE THERAPY

E. Giacobini (University of Geneva, Medical School, Geneva, Switzerland; Ezio.Giacobini@hcuge.ch)

Following the introduction of cholinesterase inhibitors in 1986 and its 20-yr long successful application in mild, moderate and more recently in severe patients, the treatment of AD has reached a turning point toward disease modifying approaches. The most promising treatment is based on the reduction of beta-amyloid in the brain of patients with mild-moderately advanced disease by means of active or passive immunization. Several types of vaccines are presently available. Three large international immunization trials are in progress in US and Europe on mild-moderate AD patients. The most advanced in time is the humanized antibody trial. Drugs aiming to reduce tau phosphorylation (GSK3 inhibitors) are entering in clinical phase. On the other hand, due to intrinsic difficulties, the development of gamma- and beta-secretase inhibitors is still at an initial pre-clinical phase with no drugs on sight. Anti-amyloid-aggregation therapies are being developed but only one of them, based on aminoglycan compounds, is still in clinical trial. Anti-APO-E approaches are being evaluated but only one is at a clinical stage. Stem cell therapy and gene-replacing therapy are being applied only at the experimental stage and are still far from clinical application. Prolonged protection of the central cholinergic system has been attempted by means of growth-factor therapy, either directly through i.c.v. infusion of NGF, with genetically modified fibroblasts or indirectly by means of gene therapy. NGF treatment could double the clinical effect of ChEI in time. It is expected that within the next five to ten years a new therapy for AD will emerge. This therapy will allow long term stabilization of at least 5 years, block disease progres-

sion or be preventive if applied at preclinical stages of the disease.

912. THE ROLE OF GERONTOLOGICAL RESEARCH IN THE DEVELOPMENT OF THE SYSTEM OF MEDICAL MEANS OF PREVENTION OF PREMATURE AGEING AND AGE-RELATED PATHOLOGY IN THE POPULATION OF RUSSIA

V.Kh. Khavinson, V.V. Malinin, O.N. Mikhailova

(*St. Petersburg Institute of Bioregulation and Gerontology of NWB RAMS, Russia; ibg@gerontology.ru*)

Long-term experimental and clinical studies performed by the research team of the St. Petersburg Institute of Bioregulation and Gerontology highlighted several specific key points of modern public healthcare. Developing these key points will strongly improve the quality of medical means of preventing premature ageing and age-related pathology in the population of Russia. These key points are: 1) Design and introduction into medical and medico-social practice of a new class of geroprotectors based on peptide bioregulators, which exert a normalizing effect on immune, biochemical, physiological, structural, functional and molecular-genetic indices of ageing, 2) Administration of peptide bioregulators for preventing and correcting the disorders of intellectual functions and unfavorable psycho-emotional conditions in older patients with cerebrovascular pathologies, 3) Administration of peptide bioregulators for correcting adaptive reactions of the ageing organism with high level of anxiety, 4) Introduction of angiography and intervention arterioplasty methods into the geriatric practice. Complex treatment of cardiology patients, involving peptide bioregulators, 5) Design of complex treatment schemes for cancer diseases, including peptide bioregulators administration to improve the quality of such treatment, 6) Administration of peptide bioregulators to patients with different age groups with eye diseases for enhancing the efficacy of treatment for chorioretinitis and age-related retinal diseases, 7) Administration of peptide bioregulators for the correction of age-related endocrine disorders, 8) Administration of peptide bioregulators for the prevention of premature ageing, increasing mental and physical working ability in persons from different age groups, working in adverse conditions, 9) Administration of physiologically active peptides for the correction of metabolic alterations, which are related to alimentary disorders. Design of individual recommendations for therapeutic nutrition, including small peptides in the form of parapharmaceuticals, 10) Introduction into the medical practice of methods of molecular-genetic diagnostics for the prognosis and optimization of prophylaxis and prevention of most frequently occurring multifactorial diseases in different age groups, 11) Study of demographic patterns of population ageing for the prognosis on the dynamics of gender and age composition of ageing societies.

913. THE EVOLUTIONARY GENETICS OF AGEING

T. Kirkwood (*Institute for Ageing and Health, Newcastle*

University, Newcastle upon Tyne NE4 6BE, UK;

tom.kirkwood@newcastle.ac.uk)

There is clear heritability of human longevity and rapid technical advances are creating exciting possibilities to identify genes that influence longevity and age-associated diseases. However, the genetics of ageing is likely to

be complex. Evolution theory tells us not to expect genes that have been selected to promote ageing. Senescence is in most cases not programmed but results largely from accumulation of somatic damage, owing to limited investments in maintenance and repair. Genes controlling the levels of activities such as DNA repair and antioxidant defence thus regulate longevity. In addition, there may be adverse gene actions at older ages arising either from purely deleterious genes that escape the force of natural selection or from 'pleiotropic' genes that trade benefit at an early age against harm at older ages. In some species, there is evidence that genes have evolved to detect and respond to changes in the environment, e.g. food supply. Understanding the evolution of such environmental modulation will be important in helping to assess the potential relevance to humans of interventions like dietary restriction that extend life span in smaller animals.

914. PERIOPERATIVE COGNITIVE DYSFUNCTION IN THE ELDERLY

Z. Mikes, J. Odraska (*Bratislava, Slovak Republic;*

zoltan.mikes@centrum.sk)

Surgery and the acute critical situations represent a serious stress even for the healthy seniors. It is caused by the decreased functional reserve of various organs and systems. This situation is further worsened by the fact, that more than the half of seniors over 75 years of age are undergoing acute surgical procedures without optimal preoperative assessment and therapy and often in acute situation caused by injury or acute illness. The start of involutional deterioration and its speed in the elderly is individual. This is determined partly by genetically programmed aging and accelerated by comorbidity of various chronic illnesses. Serious comorbidity has progeric effect: it can shift the biological age „older“ comparing to calendar age by 10–15 yrs. In this category patients with pulmonary obstructive disease, coronary heart disease, diabetes mellitus, obesity, repeated need of artificial ventilation or immobility suffer also the cognitive functional impairment, usually caused by advanced cerebral atherosclerosis or Alzheimer's disease. Delirium is a serious prognostic problem in older age, without respect to the presence of dementia. This group of patients has also higher Glasgow Outcome Score (GOS). The age per se is the basic risk factor influencing the results of surgery. Patients over 60 yrs even without comorbidity are rated as high-risk. The age of 75 yrs and over shifts the patients further into the high risk group. Starting from age of 50 yrs the most important risk factors for slowing the cerebral functional recovery are hypotension, hypovolemia, excessive anemia, hypoglycaemia, hypoosmolarity and a long-term hyperextension of the head. In the age group of 60–70 yrs the neuropsychical function is considered as the most frail even in the healthy seniors. Their postoperative recovery is very gradual and usually slow. The postoperative period requires intensive patient care and monitoring and a targeted rehabilitation of the brain function. The authors analysed the cognitive functions of 568 persons living in the senior homes and they found a high rate of polymorbidity and cognitive functional impairment. This patient category is therefore considered as a very vulnerable for the perioperative and postoperative functional deterioration.

915. ACTIVITIES AND TARGETED PREVENTION, THE ONLY EVIDENCE BASED ANTI-AGING THERAPIES (AAT) IN DAILY CARE

R. Moulias (*FRCP, Chair IAGG-ER;*
robert.moulias@wanadoo.fr)

Background. Multiple therapies are proposed on very weak experimental arguments to raise potential life expectancy. On another hand, a rich documentation shows that way of life and prevention have a powerful effect on duration and quality of life in old age. *Results.* Comparative demography shows that life expectancy is linked, not with any AAT, but with durable development, that is level of public hygiene (potable water, sewers, cold chain, vaccinations); access to primary care, educational level, access to a varied diet without excess, preferably of a Mediterranean type. Avoiding toxic risks factor is also a strong point. More recent data insist on the role of keeping an activity. First data concerned physical activities. But psychic and mainly social activities are also essential factors for a longer and better life. Well being itself social role and self image are also factors for a longer life and a better prognosis in case of disease. On another hand, isolation appears today as a major risk factor for disablement, morbidity and mortality in the elderly. Classical prevention is of interest in the elderly. It can be focussed on the individual risk factors of the person, with an excellent level of cost / efficiency ratio. The spectacular drop of cardio-vascular mortality these 20 last years is an illustration of the efficacy of evidence based preventions. *Conclusion.* Life conditions, educational level, physical, psychic and social activities and preventive therapies, evidence based, focussed on the individual risks factors are the only AAT available today. There is no “magic pill “ for eternal youth, but individual ways for a well-aging.

916. OLDER TURKISH MIGRANTS IN GERMANY

G. Naegele (*University of Dortmund, Institute of Gerontology at the University of Dortmund;*
orka@post.uni-dortmund.de)

The Turkish population ist the largest migrant population in Germany. Out of the estimated 7.5 mio. foreigners living currently in Germany (wich is around 9 % of the overall population), nearly 2 mio. belong to the Turkish population. Additionally, there are many former Turkish people which have adapted to the German citizenship; however, it's exact number is not known. Many of the migrants with Turkish origin belong to the group of the so-called „guestworker-generation“, e.g., they belong to those migrants, who came to Germany for work. Currently, more than 20 % of the persons mit Turkish origin are 55 years and older. Furthermore, it is estimated that most of them will not return after retirement and consequently will get old in Germany. The paper will highlighten some of the most significant reasons why Turkish older migrants plan to stay in Germany. Secondly, a short insight into the life — situation of the older Trukish population in Germany is given, based on the so called „Lebenslage-Konzept“. In this context, the following issues are touched: financial situation, labour force participation and situation working life, social integration, social networks and social contacts, family relations, health status, (future) care needs and demands, individual plannings for the future and „illusion of return“. Although many of the data available do refer not explicitly to the Turkish population but to the older migrants as such,

it should be possible to stress out Turkish peculiarities. The paper will end with the issue of „productivity“ within the group of older migrants. This issue has explicitly been taken up by the scientific commission which was responsible for the 5th Federal report on the situation of the elderly persons in Germany, which was recently published. The author was member of this commission.

917. THE LIVED EXPERIENCES OF WIDOW ELDERERS IN ISFAHAN CITY

S. Naji, A. Heidar (*Faculty of Nursing & Midwifery,*
Islamic Azad University, Khorasgan Branch, Arghavanieh,
Isfahan, Iran; a_naji@khuisf.ac.ir)

Introduction: With increasing the life expectancy, the number of older adults is increasing and the demand for geriatric health care services will rise. The aged population is the greatest user of insufficient health resources because of their high incidence of chronic and acute illnesses. Related to this is the issue of impaired independence in activities of daily Living (eating, bathing, continence, mobility, communication leisure activities, and social skills) in other hand, contributing factor is the lack of community health nursing in Iran, which, if resolved, might reduce community health problems in this country. Hence it is necessary to study the experiences of such people particularly women who had no husband as the main resource of support. Discovery of the meaning of their lived experiences reflects of every day facts of their society. *Objective:* To describe the structure and essence of impact of The Lived experiences of widow elders' in Isfahan city. *Method:* The qualitative phenomenological research was employed and the sample was chosen amongst the source of data, the widow elders' in Isfahan city. The sampling method was purposive and sample size was dependent on the data saturation and a total of 32 participants were chosen in the end. The data were collected by deep interviews and analyzed using Colaizzi's method. *Results and Conclusion in trim:* The findings of this study showed core concepts expressing participants' experiences, including: economics problems, disturbances in family and social life and, facing physical, emotional and psychological complications.

918. THE ELDERLY IN A PERIOD OF TRANSITION: HEALTH, PERSONALITY AND SOCIAL ASPECTS OF ADAPTATION

I.C. Petrov (*Medical University of Sofia, Bulgaria;*
ignatpetrov@yahoo.com)

The dramatic changes in overall mode of life experienced since 1989 by the people in Central and Eastern Europe (CEE) gave a good opportunity to study the aging processes and the status of the elderly. At 1980's CEE countries were already at an advanced stage of demographic aging of their populations. The first years of the period of transition from totalitarianism to democracy and market economies were marked with an abrupt but varying degree of economic and social deterioration in CEE. It was followed with a partly improvement. On the other hand, already in the late 1960s and 1970s began an increase of mortality rates and a stagnation and decrease of life expectancy in CEE. It contrasted with the steady improvement in the EU during 1970s and 1980s. By 1989, there already was a striking gap in life expectancy between East and West Europe. This gap revealed the existence of a health East-West divide. The most important health prob-

lems contributing to greater mortality in CEE proved to be cardiovascular and alcohol-related diseases as well as violence and injuries. Suicide rates also were found higher among the (elderly) population in the countries of CEE and Russia compared with the West. The gap was most expressed among the men. The reasons for deterioration in health are complex. There is an evidence that negative economic and social changes can lead to psycho-stress and to unhealthy behaviors. The morale of the elderly people in transition was affected many-sided. The Sofia study has revealed positive as well as negative personal attitudes towards the changes in life. Feelings of liberation, hope and new perspectives were reported, but also feelings of disappointment, pessimism and fears. To sum up, transition processes have run unevenly in different countries and have had different impact on individuals. Nevertheless general trends towards improving the economic, psychosocial and health aspects are recently prevailing.

919. CORRELATES OF ACTIVE AND HEALTHY AGEING OVER SEVENTY IN A RURAL SETTING IN BULGARIA

I.C. Petrov, Vl. Denev, Iv. Petkov, Zv. Arnaudova,
D. Petrov (*Bulgarian Association on Ageing; and Medical University of Sofia; ignatpetrov@yahoo.com*)

740 elderly, representing a 20% random sample of all population aged 70 and over of 46 villages near Sofia have been studied cross-sectionally as well as longitudinally in order to identify various types and correlation of successful ageing in a rural ambience. The group was homogeneous in ethnic and sociocultural respect, with a level of migration near zero. The mode of life was traditional and rather closed. The education level of the men was mostly 1–4 classes, but the majority of women were illiterate. The methods included a complex medical, neurological and psychiatric examination, a battery of cognitive tests, a psychological interview, and a personality self-evaluation test after Dembo-Rubinstein. At the initial examination 44% of the elderly were viewed as psycho-socially well or very well adjusted. Some kind of mental health problems had 37% of them (mostly mild or moderate disorders). Another 19% were referred to a “border zone” between normal ageing and mental disorder. Mood and/or cognitive disorders prevailed. Most mood disorders were near to the notion of dysthymia and/or existential (hypo) depression. In many cases they were combined with anxiety. In most cases of dementia was evident an important involvement of vascular factors. According to the self-evaluation test, the value orientations of the rural aged were focused on their own health, the family relations in a narrow circle (children and spouse) and economic security. The value concepts of these people revealed the need of the aged of help and family ties, the insecurity of the future, the increased dependence with age on the immediate surroundings, and the worry to maintain the status achieved in the course of life – in the family and in the sphere of economic security. The self-ratings of: happiness (1), health (2), intellectual capacity (3), character (4) and attitude of other people (5) significantly depended on employment, (1, 2, 3, 5), objective assessment of general health (1, 2, 5), vision (3), emotional tone (1, 2, 4), family ties (5) and income (5). The content of the motives for personal dissatisfaction and the analysis of the cases of extremely low vs. high ratings revealed the leading psycho-stresses in

old age: family troubles, economic difficulties, impaired health. The comparison between the aged with and without depressive states, showed significant differences regarding family problems, impaired health, vision, and work capacity. The follow-up as well as longitudinal test’s assessment was carried out in periods of 1, 2, 5, 7, 10 and 13 years. The clinical-psychological follow-up revealed some improvement in the mental health and social balance in 17%, but in 55% of the elderly, with the advance of years, occurred some kind of deterioration, clinically labelled as anxiety disorder, dysthymia/depression, cognitive decline and/or personality change.

920. BIRTH ORDER AND HEALTHY AGEING

I.C. Petrov, J.G. Georgieva (*Medical University of Sofia, Bulgaria; ignatpetrov@yahoo.com*)

Correlation between birth order and healthy ageing was sought among 740 elderly people, living in a rural setting in Bulgaria, representing a 20% random sample of all population aged 70 and over. The research was conducted in 46 villages near Sofia, studied cross-sectionally as well as longitudinally. The group is homogeneous in ethnic and socio-cultural respect with a level of migration near zero. The mode of life was traditional and rather closed. The majority of women were illiterate, men’s education level - mostly 1–4 grade. Predominant birth order positions are identified among the elderly viewed as healthily ageing (well or very well adapted — 44%), as well as among the 37% with mild or moderate disorders, and the 19%, that constituted a “border zone” between normal ageing and mental disorder. The predominant birth order position among the group of “healthy ageing” was found to be “middle child” (around 60%), followed by “first child” position (25%), the percentage of “last child” position being the least represented. The group with depressive and/or anxiety disorders has exhibited a tendency of moderate reduction of the representation of the position “middle child” and a more expressed growth of the percentage of “last child”, “first children” being the least represented. Order effects were studied also in reference to the dynamics, revealed by the clinical-psychological follow-up, carried out in periods of 1, 2, 5, 7, 10 and 13 years, that outlined improvement of mental health balance in 17%; some kind of deterioration — in 55%. Among all the groups, the identified birth order tendencies show variations in reference to sex of the subjects of the research.

921. CAUSES OF SOCIAL DISADAPTATION OF THE ELDERLY TO RETIREMENT UNDER MODERN CONDITION (KIEV EXAMPLE)

N.A. Prokopenko (*Institute of Gerontology, Kiev; naprok@bigmir.net*)

Adaptation to retirement depends on many factors. One of the negative consequences of retirement is sharp reduction of income. According to our studies, average monthly income of non-working retirees is nearly three times lower than that of working individuals. Most of the elderly (63.3%) live together with their children and families and, hence, can expect economic, social and psychological support from them. Comparison of mutual care between middle and senior generations has shown that 78% of pre-retirement age persons and working retirees give material support to their children and only 13% of

them receive it from them. Among non-working retirees, this disproportion is greatly reduced to respectively 30.3% and 44%. Main monetary spending of pre-retirement age persons and retirees includes food products and home and public utilities costs. 16% of the interviewed cannot fully cover these expenses. Needs in payment of medical services are partly satisfied by every fifth retiree. One of the key factors having an impact on the adaptation to retirement is health condition as the main source for active life and the dominant motive for retirement. Special mentioning is about dramatic increase with age in the morbidity rates (e.g., cardiovascular diseases, nervous diseases, digestive diseases, urinary-genital diseases). An important element of health is nutrition. People of pre-retirement age and all retirees eat basically flour and cereal products, 55.4% non-working retirees do not eat meat and fish at all. Among the interviewed, 84.2% of men and 71.6% of women reported themselves as physically active, while 44.9% and 39.1% of them were socially active. The majority of pre-retirement age (84.7%) individuals wished continuing to work after retirement while amongst working retirees such percentage was 65.9%. The main reason of work cessation was health worsening (45.5% of men and 30% of women) and staff reduction (43.9% and 52%). The indicator of adaptability of elders to new social situation is the degree of satisfaction with various aspects of one's life. Our research data have revealed the highest disadaptation among non-working retirees. For this category of the interviewed, the main reasons of full life failure are their dissatisfaction with current processes in a society (92.8%), their status (material — 96%, social — 84.8%), health condition (71.1%), medical servicing (40.8%), intrafamilial relations (36.8%), and leisure organization (19.2%).

922. DIABETES MELLITUS TREATED BY INSULIN THERAPY IN PERSONS 75+ Y. – OUR ATTITUDE TO THE OUTPATIENT CARE

P. Weber, H. Meluzínová, H. Kubešová, V. Polcarová, B. Kocourková*, A. Striová*, E. Fenclová*, J. Slívová*, D. Hejlová*, M. Pisarčíková*, T. Tomečková* (Geriatric department; University Hospital, Brno, Czech Republic; *Diabetologic outpatient department; Brno, Czech Republic; p.weber@fnbrno.cz)

Background: Diabetes mellitus (DM) is a typical disease of old age and in very old age it many times accompanies “geriatric giants”. It has a crucial impact on personal

and social health. In the very old age it significantly affects also the social status of the individual. In the elderly 75+ y. DM occurs often in the domain of multi-morbidity and can conduce to incurrence and development of serious disability, which can significantly influence further therapeutic procedures. *The aim:* The study was aimed at analyzing the situation connected with the DM development, duration, insulin therapy period and overall approach in persons 75+ y. at 8 diabetological outpatient clinics of the Brno city. *Material and Methods:* In the study we included 337 older diabetics 75+ y. who were long-term observed in the above mentioned diabetological outpatient clinics. Out of this number there were 129 men and 208 women of the average age $79,3 \pm 4,9$ y. (range 75–97 y.). Basic co-morbidities were assessed as coronary heart disease (CHC) and its complications, hypertension, dyslipidemia, obesity, presence of late diabetic micro- and macro-vascular complications. All the presented patients underwent a complete intern examination. *Results:* DM in patients of our set was detected in the age $59,9 \pm 12,9$ y. Its duration in the time of this study was $18,8 \pm 12,9$ y. and the insulin therapy duration was $8,0 \pm 7,3$ y. Good mobility was present in 303 persons (89,7%). 73 diabetics suffered from serious cognitive impairment — almost as to beginning dementia (22%). 159 seniors altogether had urinary incontinence i.e. 47%. Within the study we analyzed such questions as: who applies insulin in the elderly; with whom he or she lives (24% of them are totally alone); how many times a day insulin is applied; which kind of insulin is used and whether there are hypoglycemias present. We also took into consideration, if the senior owns a portable glucometer and who helps him or her with self-monitoring. *Conclusions:* Permanent insulin therapy represents in old age the kind of treatment which is very demanding for the old diabetic as well as for the nursing staff and the patient's close environment. Total daily dose of insulin should not exceed 0,8 units per kg of weight. In the elderly (especially the very old ones) considerable vulnerability of cerebral and cardiac functions to hypoglycemia can occur during the insulin therapy. The role of the attending physician is to evaluate both patient's health status and his/her social background enabling to adopt the chosen kind of the insulin treatment. A geriatric patient faces a long-term threat of decompensation of his/her functional status and therefore he/she requires specific modification of the specialist's approach when deciding on the regimen and therapeutic measures.

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