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Poster presentation clinical area

Poster área clínica

Cardio and cerebrovascular disorders 1/*Trastornos cardio y/o cerebrovasculares 1*

PC-001

Auscultatory versus oscillometric measurement of blood pressure in octogenarians

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Introduction.– Auscultatory measurement using a sphygmomanometer has been the predominant method for clinical estimation of blood pressure, but it is now rapidly being replaced by ocillometric measurement. It has been questioned whether oscillometry measures correctly in elderly patients, often with stiff arteries. The aim of this study was to compare blood pressure by auscultatory and oscillometric measurements in patients $\geq$ 80 years.
Method.– Hundred patients were included. For each the mean of two blood pressures with each method measured within 15 min were compared. Arm circumference and the presence of hypertension and arrhythmia were recorded.
Results.– The mean age of participants was 85.8 years and 55.8% were women. There was good agreement between the two methods. The correlation coefficient for systolic blood pressure was 0.88 and for diastolic 0.79. Differences between auscultatory and oscillometric values were less than 10 mmHg in 70.6% of systolic pressures and in 83.2% for diastolic. Arrhythmia and hypertension did not influence the results, and there was no correlation between the magnitude of the differences and the level of blood pressure. 17.2% of the patients had arm circumferences requiring a small (pediatric) cuff.
Conclusion.– Oscillometric measurement of blood pressure in octogenarians was found to be reliable with results only modestly different from auscultatory measurements.

PC-002

Effectiveness of a disease management program delivered by day-hospital in older patients with chronic heart failure

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Objectives.– Disease management programs after hospital discharge in high-risk heart failure (HF) patients can reduce readmissions and mortality rates. We aimed to assess the effectiveness of a disease management program (DMP) delivered by day-hospital to improve event-free survival (HF readmissions hospital or all-cause death) in older patients with HF after hospital discharge.
Methods and patients.– Randomized controlled clinical trial. The study involved 117 older patients with HF: 59 patients were allocated to receive an intervention consisting of a comprehensive hospital discharge planning, education, therapy optimization, early attention to signs and symptoms, and close follow-up at a geriatric day-hospital; and 58 patients to usual care.
Results.– The median age of the entire simple was 85 (IQR: 82–89) years and 73% were women. At 12 months follow-up intervention group patients were less likely to present events, as compared with the control group (19 vs. 31 patients), which represents 40% event reduction (95% CI: 0.19–0.87; *P*: 0.02). Ten patients in the intervention group (16.9%) had at least one readmission during follow-up, as compared with 16 patients in the control group (27.6%), and 13 patients in the intervention group died during the study period, as compared with 22 in the control group (22.8 vs. 37.9%), but these differences were not significant. All-cause hospital admissions were slightly lower in DMP vs. usual care (45 vs. 48 readmissions). At 1 year, the probability of remaining free of events was significantly higher in the intervention as compared with the control group (Log rank 7.03; $P = 0.008$).
Conclusion.– A disease management program delivered by geriatric day-hospital can improve event-free survival in older patients with HF.

PC-003

Audit on the management of risk factors for TIA and stroke

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Introduction.– Stroke and TIA are preventable disease and good management of the risk factors can prevent further cerebrovascular accident (CVA). The aim of this audit is to underlying the importance of urgent outpatient access to neurovascular clinic for patient with TIA symptoms and to evaluate the management of stroke patients according to Royal College of Physician (RCP) guideline in 2008.
Methodology.– We studied 51 patients who attended TIA clinic and 26 in-patients from stroke ward retrospectively. According to NICE and RCP Stroke Guidelines in 2008, for all patients with symptoms of TIA an urgent CT/MRI of head, Carotid Doppler, glucose, and lipid

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profile need to be done. Statins should start 2 days after the event and target cholesterol is 3.5, aspirin 300 mg should be given for 2 weeks then to be reduced to 75 mg once/day or start warfarin for atrial fibrillation. These patients need to have tight control of diabetes and hypertension.
Result.– From the 51 patients (48 patients had TIA). Forty percent of patients had cholesterol above 3.5, 3% had significant carotid stenosis and referred to vascular surgeon. Eighteen percent were not on statins. Glucose and cholesterol had not been checked in 8 and 4% of patients respectively. Five percent were not on aspirin. From 26 inpatients (21 patients had CVA). Sixty-nine percent of the patients did not have cholesterol level taken. Forty-two percent of the cases were already on statins. Three patients had significant carotid stenosis and had endarterectomy during their admission.
Conclusion.– In TIA clinic the percentage of patients who had cholesterol and glucose level checked was significantly higher than in-patients from stroke unit. All patients with cholesterol above 3.5 were started on statins. Majority of patients from both groups were started on aspirin or warfarin. Two of three patients with significant carotid stenosis were referred for endarterectomy. For all patients tried to keep very tight control of blood pressure and glucose level.
Recommendation.– We introduced **STROKE SCREEN** code which includes routine blood tests, glucose, cholesterol and ESR. Patients with atrial fibrillation to be referred to anticoagulation clinic 2 weeks after the acute events unless there is contraindication.

PC-004

Physical activity is associated with a more favorable cardiometabolic risk profile but not total antioxidant capacity across an adult man's life

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Abstract.– The aim of the study was to determine the association between the long-term physical activity (PA) and the total antioxidant capacity (TAC) of blood serum and their association with coexisting risk factors of cardiometabolic diseases in a group of healthy males. The research was conducted among 422 healthy males aged 19.2–89.8, either sedentary or involved in recreational sports activities. Anthropometric measurements, lipid profile, glucose and uric acid levels were assessed in every man. Current PA, historical PA and aerobic fitness (Physical Working Capacity - $PWC_{85\%HRmax}$) were measured. TAC was determined by means of two spectrophotometric methods: the ferric reducing ability of serum (TAC-FRAS) and 2,2-diphenyl-1-picryl-hydrazyl (TAC-DPPH) tests. TAC was not related to the age of the subjects. Higher current and historical PA were associated with a more favorable cardiometabolic risk profile but not TAC. Current PA level was connected with lower values of TAC-FRAS. Values of both TAC-FRAS and TAC-DPPH decreased with an increase of aerobic capacity. Individuals with coexisting anthropometric and biochemical risk factors of cardiovascular diseases and with elevated values of arterial pressure had higher TAC. Values of both TAC-FRAS ($r = 0.66$) and TAC-DPPH ($r = 0.39$) were strongly positively correlated with uric acid level. In conclusion, overweight, obesity, higher blood pressure, unfavorable blood lipid profile and especially higher uric acid levels are connected with greater TAC of blood serum across an adult man's life. High PA and fitness are associated with more favorable overall risk profile of cardiovascular and metabolic diseases but are related to lower TAC.

PC-005

Cellular and serological inflammatory biomarkers of cardiovascular disease in elderly

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Objective.– Cardiovascular diseases represent a significant percentage of the causes of death and total disability in elderly population of western world. In recent years, the search of possible biological markers of cardiovascular disease is an important topic in clinical translational research. Therefore, we conducted one observational cross-sectional study that evaluated the relationship among cardiovascular disease and several cellular and serological inflammatory parameters. The ultimate aim of our study was to identify possible biomarkers of cardiovascular disease in aged population.
Methods.– Cross-sectional study. Blood samples were obtained from two groups of elderly volunteers over 65 years: a control group of elderly people with no history of cardiovascular disease (mean age 85 years, percentage of women 70.5%, $n = 61$), and one group with cardiovascular disease (mean age 86 years, percentage of women 64.6%, $n = 64$).
We measured the cellular inflammatory parameters, white blood cell count (WBC), neutrophils (NEUT) and monocytes (MONO) in an automated hematology analyzer of a well-standardized hematology laboratory. Circulating concentrations of studied cytokines receptors were determined by commercial ELISA kits: serum receptor interleukin 6 (sIL-6R) and soluble tumor necrosis factor receptor, type I (sTNF-RI). Statistical analysis was performed using SPSS vs. 15.0 (SPSS Inc., Chicago, IL, USA). Differences were considered statistically significant when $P < 0.050$.
Results.– Analysis of the data showed a different pattern of cytokines receptors in the group with cardiovascular disease compared to control group. We observed a high statistically significant increase in serum concentration of sTNF-RI ($P < 0.001$) associated with cardiovascular disease; however, there was no relation between sIL-6R plasma level and cardiovascular disease. WBC, NEUT and MONO values also showed a significant increase ($P < 0.001$) in the group with cardiovascular disease vs control group.
Conclusions.– The results of this study show an increase in the values of sTNF-RI, WBC, NEUT, and MONO associated with cardiovascular disease. The results are consistent with the presumed underlying biological mechanism in which the chronic inflammation is involved in cardiovascular disease in elderly subjects. Therefore, it could be worth considering these parameters as possible biomarkers of cardiovascular disease in aged people, with consequent possible future clinical applications.

PC-006

Inflammatory biomarkers of all-cause 1-year mortality in institutionalized elderly population

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Objective.– In present investigation, we tested the hypothesis that systemic low-grade inflammation is associated with increased risk

of 1-year all-cause mortality in institutionalized elderly population. The ultimate goal of this study is to identify possible useful biomarkers for clinical practice.

Patients.– Participants were one hundred and nineteen institutionalized subjects older than 65 years (90 women and 29 men; mean age 86 ± 7 years) selected from Santa Teresa nursing home (Oviedo, Spain). The participants were not rigorously selected according to their morbidity characteristics in order to study a representative sample from population. Exclusion criteria were recent or current infection, malignant disease and malnutrition. Each participant or participant's guardian received information about the purposes and objectives of the study and signed and informed consent term. The study was approved by the Hospital Central de Asturias (Oviedo, Spain) ethics committee.

Blood samples were obtained by venipuncture following and overnight fast and 15-minute rest in the morning. Cellular inflammatory biomarkers were measured using an automated haematology analyser in a well-standardized hematology laboratory. Serological inflammatory biomarkers were measured in duplicate using commercially available enzyme-linked immunosorbent assays according to the manufacturer's recommendations.

The statistical software package SPSS 15.0 for Windows (SPSS Inc., Chicago, IL, USA) was used for all statistical analyses. The predictors of all-cause mortality at year *versus* being alive at baseline were identified by regression model for the entire study population. The results were presented as odds ratio (OR) and 95% confidence intervals (CI). The analyses were adjusted for sex and anti-inflammatory drug. Differences were considered statistically significant when $P < 0.050$.

Results.– We found a strong direct relation among higher levels of TNF-α and IL-1ra and all-cause mortality at year in institutionalized aged population. There was no relation among levels of WBC, neutrophils or IL-6 and mortality.

Conclusions.– TNF-α and IL-1ra are predictors of all-cause 1-year mortality in institutionalized older population. The results are consistent with the presumed underlying biological mechanism in which the chronic inflammation is involved in adverse outcomes in elderly subjects. Such measures may provide useful tools for identifying older people at higher risk of death.

PC-007

Glutamic acid decarboxylase autoantibody (GADA) testing: association with clinica characteristics, beta cell function andcardio-metabolic risk factors in T1D and LADA

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Background.– The determination of GADA may be useful for clinical classification of diabetes mellitus (DM) in clinically unclear cases. This GADA positivity may in any diabetics type 1 diabetes mellitus (T1D) with an onset in adulthood and late autoimmune diabetes of adults (LADA) persist many years after appearance of DM.

The aim.– The study was aimed at comparing the levels of GADA between both diabetic subsets with their clinical parameters, age of onset DM, period of insulin need, body mass index, HbA1C, fasting and postprandial C-peptide, risky HLA–DRB1* alleles, occurrence of micro- and macrovascular diabetic complications.

Patients and methods.– In the study, we included 130 diabetics with an onset of diabetes (T1D or LADA) 35+ years who were hospitalized. Out of this number there were 62 men and 68 women of the average age 65.5 ± 14.0 y (range 35–93 years). Fifty-four were assessed as the T1D patients and 76 as the LADA ones.

Results.– Patients of the T1D subgroup were GADA positive 22 times and of the LADA subgroup 21 times. LADA 2 patients that were GADA negative were more obese than GADA positive LADA diabetics ($P < 0.01$). Also postprandial C-peptide was higher in LADA patients GADA negative ($P < 0.05$). Other clinical characteristics were without statistically significant differences. We found in our diabetic patients a relation between alleles HLA–DRB1*03 and particularly combination with HLA–DRB1*04 with positive GADA levels. In the GADA negative group obesity, coronary heart disease, hypertension, syndrome of diabetic foot and dyslipidaemia appeared more frequently (OR = 2.8; 3.1; 6.2 and 2.4). GADA positive were even 10 years duration 16 times and after 20 years even six times. Recent DM had positive GADA in 11 cases and 13 cases of recent DM hade GADA negative. IA-2 antibodies were positive (> 1.0 U/mL) 18 times altogether and always with positive GADA, but only seven times in recent DM.

Conclusions.– The presence of elevated GADA identifies patients unequivocally suitable for early insulin therapy. Our observations and experiences confirm that GADA can be found increased after more than 10–20 years duration of DM, although in decreasing trend.

PC-008

Metabolic syndrome in elderly: A field to explore

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Objectives.– To determine the prevalence of metabolic syndrome (MS) according to the definitions of the Third Report of National Cholesterol Education Program (NCEPC-ATP III) and the International Diabetes Federation (IDF) and its relation to cardiovascular disease (CVD) and type 2 diabetes mellitus (DM) in hospitalized elderly patients.

Methodology.– This descriptive and prospective study (February–March 2011) included 200 patients hospitalized in a geriatric service. We collected sociodemographic, clinical and biochemical data, life style habits, personal history and previous treatment. MS was defined according to the NCEP – ATP III modified criteria and IDF criteria.

Results.– The prevalence of MS was 65% (NCEPC-ATP III) and 67.5% (IDF) and was greater in women (NCEPC-ATP III = 72.3%, IDF = 70.4%) than in men (NCEPC-ATP III = 27.7%, IDF = 29.6%), [$P = 0.002$ and $P = 0.012$] respectively. The mean age was 84.75 ± 6.22 years (NCEPC-ATP III) and 84 59 ± 6.26 years (IDF). A statistical association between the presence of DM and MS were found (NCEPC-ATP III = Odd Ratio (OR) 7.43 95% CI: 3.40 to 16.21 and with the IDF = OR 4.69 95% CI: 2.26 to 9.75) and between high blood pressure (HBP) and MS (NCEPC-ATPIII = OR 4.08 95% CI: 2.17 to 7.65 and IDF = OR 4.08 95% CI: 2.16 to 7.70). The MS was not associated with an increased prevalence of CVD. HBP was the most common component (86.2%) of the NCEPC-ATPIII criteria while according to the IDF the most common component was abdominal obesity (99.3%). Intense physical activity was a protective factor in the group of patients with MS according to NCEPC-ATP III criteria (OR 0.213 95% CI 0.53 to 0.85).

Conclusions.– MS is highly prevalent in elderly hospitalized patients, being higher in women, in patients with high blood pressure and type 2 diabetes with both diagnostic criteria (NCEPC-ATP III and IDF). In our population the MS was not associated with an increased prevalence of CVD.

PC-009

Adherence to the Mediterranean diet is associated with a better type 2 diabetes mellitus control in women

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Introduction.– The Mediterranean diet (MeDiet) is well known to prevent chronic diseases. It is characterized by high intake of vegetables, fruits, legumes, cereals, nuts and fish, moderate intake of dairy and lean meats, and sparse in sugary soft drinks or pastries. It is relatively high in fat (up to 40% of total energy intake), but with extra virgin olive oil as principal fat used for cooking.
Recent publications suggest this diet could reduce the incidence of type 2 diabetes mellitus (T2DM), and improve glyceamic control. Therefore the objective of this study was to assess the association between the adherence of the MeDiet and glyceamic control in T2DM geriatric patients.
Methodology.– A cross sectional analysis was done in T2DM patients who visited our geriatric unit (73 men and 33 women). The adherence to the MeDiet was measured by the Mediterranean diet adherence screener (MEDAS) composed by 14 questions about food intakes and habits. Each question was scored 0 or 1. The score ranges from 0 to 14; the higher the score the better the adherence. This screener was developed, validated and used in the PREDIMED study in a very similar study population. Glyceamic control was monitored by a capillary test of glycosilated haemoglobin (HbA_{1c}) levels (Afinion AS100, AXIS-Shield). The cut off point of 6.50% was used to compare normal HbA1c values against high values; the higher values identifying patients with worse glyceamic control.
Results.– Women with high HbA1c ($n = 15$) had significantly lower ($P = 0.028$) MEDAS mean ($\pm$ SD) values, as compared to those with normal HbA1c values ($n = 18$), (6.87 ± 2.33 and 8.44 ± 1.69, respectively). Among men, the difference was not significant between those with high HbA1c, $n = 32$ and normal HbA1c values, $n = 42$ (9.07 ± 1.88 and 8.34 ± 2.70; $P > 0.05$, respectively).
Discussion.– Our results show association between a better adherence to the MeDiet and improved glycaemic control, in women. A cross-sectional design does not allow us to draw conclusions about causality. Nevertheless, we recommend geriatric care units to promote the MeDiet among their T2DM patients to improve glycaemic control.

PC-010

Intramyocellular lipid content in familial longevity: The Leiden Longevity study

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Introduction.– We designed the Leiden Longevity Study to examine familial determinants of longevity in humans. In the Leiden Longevity Study, long-lived families consisting of nonagenarian siblings and their middle-aged offspring were selected from the Dutch population. The partners of the middle-aged offspring were included as controls. Recently, we showed that the middle-aged offspring of these families had a lower prevalence of major age-related diseases, including diabetes. Non-diabetic offspring showed lower fasting glucose levels, better glucose tolerance and enhanced skeletal muscle insulin sensitivity compared to the control group, while the two groups did not differ with respect to age, sex distribution, body composition and lifestyle indices such as the level of physical activity. Our aim was to determine whether the enhanced insulin sensitivity in offspring enriched for longevity was reflected by lower intramyocellular lipid (IMCL) content, a marker of mitochondrial function and insulin sensitivity.
Methods.– We aimed to determine the IMCL content in 60 subjects from the Leiden Longevity Study, comprising 30 offspring of nonagenarian siblings, and 30 partners thereof as control subjects. IMCL content was assessed using short echotime proton magnetic resonance spectroscopy (^{1}H-MRS) of the anterior tibial muscle with a high field strength 7 tesla MR-scanner. The short echo-time IMCL was calculated relative to the creatine CH3 signal. Physical activity was assessed using the IPAQ questionnaire.
Results.– Preliminary data were available for 30 subjects, comprising 16 offspring and 14 controls. Baseline characteristics for the offspring and controls were similar with regard to age, sex, body mass index and physical activity levels. The offspring group showed lower IMCL/creatine ratio than the controls (2.16 ± 0.41 vs. 3.59 ± 0.43, $P = 0.024$). Furthermore, IMCL content tended to show an inverse association with the age of death of the oldest parent ($P = 0.089$).
Conclusions.– Offspring of nonagenarian siblings predisposed for longevity show lower IMCL content compared to age, sex and environmentally matched control subjects. These findings suggest that the enhanced insulin sensitivity found in familial longevity could be explained by IMCL content, and hint at a role of mitochondrial function in familial longevity.

PC-011

Lifestyle intervention following stroke: Randomised controlled trial

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Introduction.– Older adults with stroke often experience anxiety, depression and restrictions in social participation in their daily lives. There is a need to evaluate interventions in the late phase after stroke. The aim of this study was to evaluate the impact of a lifestyle group intervention on well-being, occupation and social participation for such patients.
Methods.– This parallel group randomised trial had two arms: participation in lifestyle course combined with physical exercise in the active arm and physical exercise only in the control arm. Both interventions were held once a week for nine months at senior centres. The SF-36 questionnaire was chosen as primary outcome addressing well-being and social participation. The eight subscales were scored and transformed to a 0–100 (highest level of functioning) scale. Secondary outcomes were the Canadian occupational performance measure (COPM) assessing self-reported occupational performance and satisfaction, the Hospital Anxiety and Depression Scale (HADS), the timed up and go (TUG) test measuring mobility; and the trail making test A and B to assess cognitive function. Assessments were performed at baseline and at nine months' follow-up.
Results.– Of 99 randomised participants, 86 completed all assessments (39 in the intervention and 47 in the control group). No statistically significant differences between the groups were seen at the nine months' follow-up in any of the SF-36 subscales, but significant improvements were seen in both groups. For the intervention and the control groups respectively, the improvement (95% CI) was 7.2 (2.8, 11.5) and 5.3 (−0.1, 10.7) for the SF-36 subscale 'mental health', 6.7 (1.1, 12.3) and 8.3 (2.8, 13.8) for 'vitality', 6.4 (−4.0, 16.8) and 8.8 (−0.5, 18.1) for 'social functioning', 11.5 (−2.1, 25.2) and 20.4 (9.5, 31.3) for 'role physical', and 25.2 (10.3, 40.1) and 11.6 (−2.1, 25.3) for 'role emotional'. No improvements were observed in the other SF-36

subscales. Neither showed any of the secondary outcomes statistically significant differences between the groups.
Conclusions.– Improvements in well-being, occupation and social participation were seen over time, but no statistically differences were found in the intervention group compared to controls. Further evaluations of complex intervention after stroke are warranted.

PC-012

Twenty-four-hour glucose rhythms in ageing and longevity

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Introduction.– Disturbances in glucose metabolism are increasingly being associated with various age-related diseases, also in non-diabetics. It is unclear how daily fluctuations in glucose contribute to the ageing process. Furthermore, conventional measurements either consist of a limited amount of data per day (HbA1c, fasting glucose) do not assess physiological conditions (oral glucose tolerance test) or are very invasive (hyperinsulinemic, euglycemic clamp studies). We aimed to explore the glucose metabolism under everyday living conditions in ageing and familial longevity.
Methods.– By use of a continuous glucose monitoring (CGM) system (Ipro2, Minimed, Medtronic), 24-hour glucose rhythms were generated in 21 healthy, non-obese subjects (10 young vs 11 old, age range 25–72 years), and in 20 non-diabetic, non-obese participants of the Leiden Longevity Study, consisting of 10 offspring of long-lived, nonagenarian siblings, and 10 partners thereof as controls (offspring vs. controls, age–range 52–72 years). CGM was performed for 2–5 consecutive days, generating between 685 and 1286 individual glucose values. Outcome parameters included mean total, diurnal (06:00–00:00) and nocturnal (00:00–06:00) glucose, and glycemic variability as measured by total standard deviation (SDt). Differences between groups were assessed by non-parametric testing.
Results.– In the young vs. old comparison, the older group (median age 55 yrs) showed higher mean diurnal glucose levels (5.5 mmol/L vs. 4.7 mmol/L, $P = 0.003$) and nocturnal glucose levels (5.2 mmol/L, vs. 4.7 mmol/L, $P = 0.005$) compared to the younger group (median age 29 yrs). Glycemic variability did not differ significantly between groups. In the offspring of long-lived nonagenarian siblings vs. controls, nocturnal glucose levels were lower in offspring vs. controls (4.6 mmol/L vs. 5.2 mmol/L, $P = 0.042$). Diurnal glucose levels and glycemic variability were similar between groups. In both comparisons, sex and body mass index were similar.
Conclusions.– These first data show that CGM is a sensitive measurement to detect differences in glucose rhythms under physiological conditions. Although numbers are small, first analyses suggest that mean glucose levels may increase with age, and that nocturnal glucose levels may be a sensitive measure of familial longevity. Additional data are currently being acquired.

PC-013

Coexistence of osteoporosis and coronary artery disease in the elderly; it is not just a chance event

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Introduction.– Coronary artery disease (CAD) and osteoporosis are common age-related conditions, both possessing important effects especially on quality of life and policies about health systems all over the world. The association, between low BMD and CAD is still a debate. Although these two diseases are generally known as different entities and their coexistence was attributed to independent age-related processes, accumulating evidence indicates that there are similar pathophysiological mechanisms underlying both diseases. In this study we aimed to seek the possible relationship between CAD and low bone mineral density (BMD) in a large number of geriatric patients.
Patients and methods.– A total of 2235 patients aged 65 years or more were included in this cross-sectional study. All patients underwent a complete geriatric assessment and evaluated for CAD and cardiovascular risk factors. BMD was measured by dual-energy X-ray absorptiometry (DEXA) (Hologic QDR- 4500A) at the lumbar spine (L1–L4) and femoral neck.
Pearson's x2 method for categorical and ANOVA for continuous data were performed for univariate analysis. Logistic regression analysis was used to identify significant independent related factors for CAD.
Results.– In this study, a total of 2235 participants were enrolled. The mean age was 72.6 ± 6.13 years. 67.5% of the patients were aged between 65 and 74 years, 28.3% were aged between 75 and 84 years and the remainder (4.2%) were older than 84 years. CAD was present in 397 (29.7%) of 1335 patients with osteoporosis, in 199 (27.4%) of 726 patients with osteopenia and in 34 (19.5%) of 174 patients with normal BMD ($P = 0.016$). When the group of osteoporosis and osteopenia were combined, patients with normal BMD had lower CAD prevelance than the combined group ($P = 0.011$). Multivariate regression analysis revealed that presence of osteoporosis or osteopenia increased the prevalence of CAD as an independent correlate (OR = 1.643; 95% CI: 1.068–2.528, $P = 0.030$).
Conclusion.– Our study shows that there is an increased prevalence of CAD in elderly patients with low BMD, and presence of osteoporosis or osteopenia increases the prevalence of CAD as an independent correlate. Further prospective studies are warranted to explain this association.

PC-014

Better orthostatic tolerance in women than men among healthy elderly

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Introduction.– Women fall nearly twice as often as men, and a lower orthostatic tolerance in women has been described. Little is, however, known about gender differences in orthostatic tolerance in the elderly.
Method.– Sixty-four persons, 21 women and 43 men (mean age 72.5 and 72 years respectively), all healthy and without medication, were subjected to 70° head-up tilt test (HUT) for 40 minutes or until syncope or unbearable orthostatic intolerance. Heart rate (HR), blood pressure (BP) and stroke volume were continuously and non-invasively monitored by the Task Force monitor (CNSystems, Graz, Austria). Stroke index (SI), cardiac index (CI), and total peripheral resistance index (TPRI) were calculated. For each individual we calculated change in hemodynamic variables from resting state to HUT, using the median from periods of 240 s at rest and after tilt to 70°. The table expresses the mean with standard deviation (SD) for the two groups with corresponding P-values.
Results.– Men had a significantly larger drop in blood pressures and a significantly smaller increase in HR and TPRI, than women in response to HUT. Resting blood pressures were significantly higher in men. Eleven individuals (18%), three women, terminated the test

because of syncope or orthostatic intolerance. RR for syncope in men vs. women was 1.3; this difference was not statistically significant.

Conclusions.– In contrast to previous studies, we found lower orthostatic tolerance in healthy, elderly men than in women. Despite a marked fall in blood pressures during orthostatic challenge in men as compared to women, the increase in both HR and TPRI were lower, suggesting reduced baroreceptor-reflex control of the heart as well as peripheral vessels.

	Baseline			Change after 70° tilt		
	Women	Men	*P*-value	Women	Men	*P*-value
HR	57.8 (5.6)	53.8 (10.7)	0.12	11.8 (5.1)	8.9 (5.2)	< 0.05
sBP	118.5 (15.4)	127.3 (12.7)	< 0.05	0.7 (11.5)	−8.1 (10.4)	< 0.01
dBP	75.4 (10.2)	84.4 (11.5)	< 0.01	3.7 (9.9)	−2.6 (7.8)	< 0.01
mBP	87.8 (11.2)	96.5 (10.9)	< 0.01	2.6 (10.4)	−4.9 (8.5)	< 0.01
SI	45.7 (10.2)	44.2 (10.4)	0.59	−11.8 (8.3)	−7.5 (8.2)	0.06
CI	2.6 (0.6)	2.3 (0.5)	< 0.05	−0.3 (0.5)	−0.1 (0.4)	0.10
TPRI	12.6 (3.8)	11.4 (2.5)	0.12	1.2 (3.1)	−0.4 (2.5)	< 0.05

PC-015

Hemodiamic change during exercise in patients with exercise-induced hypertension and coronary artery disease

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The purpose of this study was to compare left ventricular hypertrophy and body composition between patients with exercise induced hypertension (EIH) accompanied by coronary artery disease and those with non-exercise induced hypertension (NEIH) and to examine the correlation between systolic blood pressure and body mass index (BMI), waist-hip ratio (WHR), left ventricular mass (LVM), and left ventricular mass index (LVMI).

This study aimed at 66 patients including 33 patients with EIH and 33 ones with NEIH after treating coronary artery disease. Echocardiography, graded exercise test (GTX), and body fat of the two groups were measured to compare the two groups.

According to the results of this study, LVM and LVMI, determinants of LVH, were significantly increased ($P < 0.01$, $P < 0.05$) more in the group with EIH than in that with NEIH. Regarding blood pressure reaction during maximal exercise, the EIH group indicated significant increase ($P < 0.05$, $P < 0.01$) in both systolic blood pressure and diastolic blood pressure than the NEIH group did. On the other hand, maximal rate perceived exertion (MRPE) was significantly lower ($P < 0.05$) in EIH group than in the NEIH group. With regard to body composition, the EIH group showed more significant increase ($P < 0.05$, $P < 0.05$) in WHR and BMI than the NEIH group. The result of examination on the correlation between the general maximal systolic blood pressure and BMI, LVM, and LVMI indicated a weak correlation ($r = 0.33$, $r = 0.31$, $r = 0.37$, $r = 0.34$) respectively.

In conclusion, LVH and the degree of obesity were significantly increased in the group of patients with hypertension accompanied by coronary artery disease showing exaggerated BP despite of medicinal control during exercise stress test. Since the result indicated that MRPE was significantly lower in the EIH group than in the NEIH group, moreover, doctors have to be careful in prescribing exercise. The result showing systolic blood pressure had a weak correlation with BMI, WHR, LVM, and LVMI suggested that more complete blood pressure control and improvement of obesity would be needed while the EIH group exercises.

PC-016

Effects of aerobic exercise on cardiopulmonary functions in patients with exercise-induced hypertension

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The main objective of this study was to investigate the effects of aerobic exercise on cardiopulmonary functions in patients with exercise-induced hypertension (EIH).

Coronary artery disease patients ($n = 23$) were divided into an exercise-induced hypertension group ($n = 11$) and non-EIH group ($n = 12$) as a control. All patients performed aerobic exercise for 14 weeks. Before and after the exercise program, heart rate, blood pressure (BP), body composition, and peak oxygen consumption were measured at rest and during an exercise stress test.

Post-exercise heart rate was significantly decreased in the non-EIH group but not in the EIH group. While BP was decreased significantly in both groups, resting BP was decreased significantly only in the non-EIH group and maximal BP was decreased significantly only in the EIH group. After exercise, rate-pressure product was decreased significantly in both groups in a similar pattern to that observed with BP. Peak oxygen consumption and exercise time were increased significantly in both groups after exercise, but obesity-related factors were not changed in both groups.

The results indicate that aerobic exercise in patients with EIH and non-EIH accompanied by coronary artery disease have beneficial, but differing, effects on cardiopulmonary-related factors.

PC-017

C-reactive protein and genetic variants and cognitive decline in old age: the prosper study

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Background.– Plasma concentrations of C-reactive protein (CRP), a marker of chronic inflammation, have been associated with cognitive impairment in old age. However, it is unknown whether CRP is causally linked to cognitive decline.

Methods and findings.– Within the Prospective Study of Pravastatin in the Elderly at Risk (PROSPER) trial, with 5804 participants with a mean age of 75 years, we examined associations of CRP levels andits genetic determinants with cognitive performance and decline over 3.2 years mean follow-up. Higher plasma CRP concentrations were associated with poorer baseline performance on the Stroop test ($P = 0.001$) and letter digit tests ($P < 0.001$), but not with the immediate and delayed picture learning test (PLT; both $P > 0.5$). In the prospective analyses, higher CRP concentrations associated with increased rate of decline in the immediate PLT ($P = 0.016$), but not in other cognitive tests (all $P > 0.11$). Adjustment for prevalent cardiovascular risk factors and disease did not change the baselineassociations nor associations with cognitive decline during follow-up. Four haplotypes of CRP were used and, compared to the common haplotype, carrierships associated strongly with levels of CRP (all $P < 0.007$). In comparison to strong associations of APOE with cognitive measures, associations of CRP haplotypes with such measures were inconsistent and of negligible clinical importance.

Conclusion.– Plasma CRP concentrations associate with cognitive performance in part throughpathways independent of (risk factors for) cardiovascular disease. However, lifelong exposure tohigher CRP levels does not associate with poorer cognitive performance in old age. The current dataweaken the argument for a causal role of CRP in cognitive performance.

PC-018

Usefulness of non-pharmacological measures in handling the psychological and behavioral symptoms of dementia (PBSD) in patients admitted to a psychogeriatrics unit

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Introduction.– Antipsychotics are the most commonly drugs usedfor the management of PBSD, but its use is not without risk such as an, including increased risk of mortality. There is evidence that non-pharmacological therapies (NPT) are useful and cost-effective in order to improve clinical and life quality to the patients suffering from dementia. The NPT are used routinely in our unit, and they include: socialization, phsycoestimulation, occupational therapy, music therapy, reminiscence or reorientation, and among others.
Objectives.– To examine whether non-pharmacological measures would help to reduce the use of psychotropic drugs, particularly antipsychotic (AP) ones, in our studied population.
Patients and methods.– Nearly experimental prospective study before-after trial that includes patients admitted from November 10 to April 11, diagnosed with dementia. Training sessions were made on the non-pharmacological handling of PBSD directed to staff from the nursing unit (2 weekly sessions30 minutes each). Improvement of thePBSD were evaluated by measuring Cummings neuropsychiatric inventory (NPI) at admission and after the study period, in addition, to assessing the decrease in the use of antipsychotic drugs. We also collected also data on patients' comorbidity of and other psychotropic drugs used. The SPSS version15.0 wasused for the statistical analysis.
Results.– Eighteen patients were included in the study. The most frequently antipsychotics used were risperidone (55.6%) and quetiapine (33.3%). After the intervention, we objectivated a significant decrease in the number of antipsychotic drugs (AP average income 89%, 39% at the end of study, with 95% CI 0.22 to 0.75, $P = 0.001$) and a significant PBSD improvement, with an average value of NPI at the beginning of 18.11 and an average value of 6.17 (95% 4.84–19.04, $P < 0.05$) at the end of the study. Regarding the use of other psychotropic drugs (antidepressants, hypnotics and mood stabilizers), there were no significant differences in their frequency of use. Neither were significant differences in terms of functional status as measured by Barthel.
Conclusions.– Training health staffon the non-pharmacological handling of PBSD has proved useful in order to improve these symptoms and to reduce the use of antipsychotic drugs.

PC-019

Comparison of 24-hour ambulatory blood pressures; dipper, non-dipper status and pulse pressures in newly diagnosed elderly hypertensive patients with and without metabolic syndrome

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Introduction.– Metabolic syndrome (MS) and deterioration of diurnal pattern of blood pressure (BP) are risk factors for cardiovascular morbidity and mortality. In this study, we aimed to compare 24-hour, daytime, nighttime BPs, dipper and non-dipper pattern, and pulse pressures (PPs) of hypertensive patients with or without MS.
Method.– Newly diagnosed and untreated, consecutive elderly hypertensive patients admitted to our Hypertension Clinic were evaluated prospectively with 24-h ambulatory BP monitoring. Patients were grouped according to revised NCEPC-ATPIII criteria as with MS and without MS. Also patients were grouped as with high MS-score and low MS-score according to MS-scoring criteria proposed by Macchia et al.
Results.– The mean age of 112 patients (71 woman, 41 man) was 72.23 ± 6.02. Patients with MS ($n = 64$) had higher 24-h, daytime, nighttime systolic BP values than patients without MS ($P = 0.004$, $P = 0.003$, $P = 0.017$ respectively). Patients with MS had higher 24-h, daytime diastolic BP values than those without MS ($P = 0.003$, $P = 0.001$). There was no difference of night-time diastolic BP values between two groups. The prevalence of non-dipping pattern was not different in MS and non-MS patients (44.4 versus 45.7%, $P = 0.6$). 24-h, daytime and night-time PP values were higher in patients with MS than non-MS patients ($P < 0.001$, $P < 0.001$ and $P = 0.002$). Patients with high MS-score ($n = 51$) had higher 24-h, daytime and nighttime systolic BP values than those with low MS-score ($P < 0.001, P < 0.001$, $P < 0.001$ respectively). Patients with high MS-score had higher 24-h, daytime diastolic BPs ($P = 0.003$, $P = 0.003$) but no difference was found for diastolic nighttime BPs ($P = 0.055$). The prevalence of non-dipper pattern was 46.8% for high MS-score and 45.4% for low MS score ($P = 0.5$). There was no difference in 24-h, daytime and night-time PP values between patients with high and low MS-score ($P = 0.2$, $P = 0.2$, $P = 0.5$ respectively).
Conclusion.– Patients with MS and patients with high MS-score had higher 24-h, daytime and nighttime systolic and 24-h, daytime diastolic BP levels than patients without MS. But no difference was found for diastolic nighttime BPS. There was no difference for dipping and non-dipping pattern between patients with MS and without MS and also patients with high and low MS-score. PPs were higher in MS patients.

PC-020

Prevalence of anemia in hospitalized older patients with heart failure

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Objective.– The prevalence of anemia varies widely depending upon the anemia definition used and the population studied. The aim of this study was to determine the prevalence of anemia in heart failure (HF) patients in a Department of Geriatric Medicine.
Method.– We analyzed the presence of anemia in 120 patients admitted in our Geriatric Department and discharged with a diagnosis of HF. We defined anemia according to the World Health Organization (WHO) criteria (hemoglobin [Hb] < 12 g/L in women and < 13 g/L in men), and also according to the National Kidney Foundation (NKF) criteria ([Hb] < 12 g/L in women and men).
Results.– We enrolled 120 patients with an average age of 85 years (IQR 82–89); 88 women (73.3%). The 55.8% of the cases had anemia according to WHO criteria, with an average age of 85.4 years and 68.7% women. Anemic subjects had more comorbidity, worse NYHA class, higher prevalence of atrial fibrillation and chronic kidney disease, but there were not statistically significant. We found that the presence of anemia was significantly associated with ischemic cardiopathy, depressed left ventricular systolic function (LVEF) (ejection fraction < 50%) and treatment with

antiplatelet drugs. The 50% of the cases had anemia according to NKF criteria, the average age and characteristics analyzed were very similar. Anemic subjects were significantly more likely to have ischemic cardiopathy and treatment with antiplatelet drugs.
Conclusions.– The prevalence of anemia among hospitalized older patients with HF is very high. Ischemic cardiopathy and depressed LVEF are more frequent in patients with anemia.

PC-021

Efficacy of a basal insulin regime to manage poorly controlled type 2 diabetes in institutionalised geriatric patients previously treated with oral antidiabetics with and without NPH or mixed insulin

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Introduction.– To determine if the therapy with insulin analogues once daily combined with oral antidiabetics (OADs) achieves a similar, or better, glycemic control than oral antidiabetics with or without NPH or mixed insulin in poorly controlled type 2 diabetes.
Methods.– Epidemiological, retrospective, multicentric study developed in geriatric residences in Zamora, Salamanca and Burgos (approved by the REC of Zamora). Data included 84 type 2 diabetes patients treated with OADs with and without NPH or mixed insulin, who had been changed to a basal therapy with insulin analogues at least 4 months before the beginning of the study due to a poor metabolic control ($HbA_{1c} > 7$).
Results.– The mean age of patients was 82.6 years and the mean BMI was 26.2 kg/m^2. At study end, patients presented a moderate functional incapacity (Barthel Index: mean 67.2) and cognitive impairment (mini-mental state examination (MMSE): mean 21.8). The HbA1c value was reduced by 1% after changing to basal therapy (8.1 to 7.1%, $P < 0.001$). Among the patients, 58.3% achieved a HBA1c value less than or equal to 7%. The mean value of fasting capillary glycemia decreased by 34.6 mg/dL (156.8 to 122.2 mg/dL; $P < 0.01$). At the beginning of the study, no statistically significant differences were observed between the percentage of patients treated with OADs who experienced an episode of hypoglycemia, and the percentage of patients experiencing hypoglycemia with basal insulin therapy (22.6% vs 16.7%; $P = 0.267$). Among the patients, 20.2% treated with OADs reported a symptomatic episode of hypoglycemia compared to the 1.2% with symptomatic hypoglycemia in the group treated with analogue basal insulin therapy ($P < 0.01$). The mean weight of the patients decreased by 0.8 kg after changing the treatment (64.3 kg to 63.5 kg, $P < 0.01$). Insulin dose requirements decreased from 29.9 UI to 22.4 UI in patients treated previously with any other type of insulin ($P < 0.001$).
Conclusion.– The result of initiating basal insulin analogue treatment in poorly controlled type 2 diabetes patients previously managed with OADs with and without NPH or mixed insulin was optimal. It renders improvements in glycemic control, reduction of body weight, a low incidence of hypoglycaemias, including symptomatic hypoglycaemias, and a decrease in overall insulin requirements.

PC-022

Etiology of anaemia in hospitalised older patients with heart failure

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Objective.– Anemia is common among patients with heart failure (HF) and has been associated with a worse prognosis. However, few studies addressing their origin. The aim of this study is to assess the etiology of anemia in HF patients in a Geriatric Department.
Method.– We analyse the presence of anemia in a prospective cohort of older patients admitted to our Geriatric Department and discharged with a diagnosis of HF. We defined anemia according to the World Health Organization (WHO) criteria (hemoglobin [Hb] < 12 g/L in women and < 13 g/L in men). The etiology of anemia was defined according to common criteria.
Results.– We enrolled 120 patients with HF with a mean age of 85.2 years (IQR 82–89); 88 women (73.3%). The 55.8% of the cases had anemia according to WHO criteria, with a mean age of 85.4 years (71–98) and 68.7% women. According to mean corpuscular volume (MCV), normocytic pattern was the most frequent (74.6%), followed by microcytic (23.9%) and macrocytic (1.5%). The causes of anaemia were: iron deficiency (IDA) (29.9%), chronic diseases (CDA) (26.9%), hemodilution (HA) (23.9%), secondary (22.4%), undefined (14.9%), and multifactorial (two or more causes) in 16.4% of patients. CDA was more frequent in older patients (89.39 ± 4.15 years; $P < 0.01$), whereas HA was in younger patients (82.06 ± 5.21 years; $P = 0.007$). Anaemia as precipitating factor for heart failure hospitalisation was significantly higher in IDA (25%; $P < 0.01$). The IDA was significantly associated with lower Hb level at admission (9.69 ± 1.79) and lower Hb level after discharge (10.44 ± 0.70), being the cause of anaemia that required more transfusions (30%). The HA was significantly associated with higher Hb level at admission (11.71 ± 0.52). The patients with undefined anaemia had lower Barthel Index (69 ± 26.54), and worse NYHA class. Comorbid factors were more frequents in subjects with multifactorial anaemia (81.8%). The 86.57% of patients with anaemia had renal dysfunction (GFR < 60 mL/min) and the 100% of cases with CDA.
Conclusions.– Anaemia in patients with heart failure may be due to different causes that should be investigated, since in most cases, it is possible to initiate a specific treatment and improve patient's hemodynamic condition.

PC-023

Impact on the dependence of acute cerebrovascular disease (ACVD-stroke) in Bizkaia

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Justification.– Stroke is a major cause of morbidity and mortality in the population of Bizkaia and is probably the most serious and disabling condition by the double impact of high mortality and high degree of dependence that occurs. This paper presents details of the status of this disease and the impact it has on the functional dependence of the people, thus allowing to determine the profile and intensity of dependence compared to the profiles of the overall sample of people who seek the Bizkaia assessment of dependency (DA).
Methodology.– We reviewed the cases of the years 2008 to 2010 with CIE9 codes 430-436.

Revised data sources.–
– Hospital Discharge Register of the BAC;
– Mortality Report 2008, Department of Health;
– Data dependency assessment DFB;
– Descriptive data treated Spss19.
Results.– In the three years studied were treated at 7,800 hospitals, stroke cases (2,600 per year). In this same period, of all people valued (DA), 7163 had a diagnosis of stroke, representing a 16% overall prevalence. We can say that 95% of those diagnosed with stroke assessment unit demand. The average age is around 80 years and 57% are women. In the overall sample of DA, the average age is higher and 66% are women. The hospital fatality rate of people admitted for stroke has been declining steadily in recent years, from 15.4% in 2002 to stabilize at 10.5% in 2009–2010, with better survival in the acute phase of the disease. Drawing on the past year, people have a stroke assessed by high degrees of dependence. Thirty-four percent are Grade III, compared with 18% of the total population assessed.
Conclusions.–
– Stroke is the leading cause of death in women.
– Is in the basis of 16% of people with dependency.
– Double the proportion of large dependent on the general population assessed.
– It has improved the rate of hospital mortality.

PC-024

Neuropsychiatric symptoms, in the opinion of caregivers, among polish elderly with dementia

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Objectives.– To analyse the course of dementia and the neuropsychiatric symptoms in relation to the presence of impaired cognitive function in general, and their connection to the severity of dementia.
Methodology.– The presented data is a part of the result of a nationwide study (POLSENIOR project) which has been carried out since 2006 in the Polish population of 55-104-years-old.
On the basis of questionnaires, the following parameters were analysed: medical history (includes interview with caregiver) and cognitive functions (Mini-Mental Test Examination (MMSE) with Mungas correction). One thousand three hundred and seventy-six patients with data from the interviews with caregivers were included in the analysis.
Results.– The mean age (±SD) of respondents was 84.2 ± 8.9 yrs (50.2% men). Based on the caregivers' opinions, 64.66% of the patients suffered from slowly progressive dementia, 16.58% caregivers reported an abrupt decline in patients' cognitive status and 15.34% of them reported a fluctuation of the patients' memory problems. Moreover, 35.02% of caregivers observed that the respondents' cognitive functions changed during the day and night. In regards to neuropsychiatric symptoms, 42.81% caregivers observed memory problems and forgetting about important issues in respondents, 25.40% of them presented problems with orientation, 21.39% did not recognize family's members, 11.19% were aggressive, 11.45% had hallucinations and 7.91% had delusions of persecution. All analysed neuropsychiatric symptoms were observed more often among severely demented patients ($P < 0.0001$) in comparison to mild and moderate. Additionally, 24.15% of respondents whose caregivers did not report cognitive impairments, in fact presented MCI; 14.49%, 3.86% and 16.91% of patients had respectively: mild, moderate and severe dementia. On the other hand, 25.03% of subjects whose caregivers stated they had impaired cognition, proved in the MMSE test to in fact have no deficits of memory.
Conclusion.– Most demented patients suffer from neuropsychiatric syndromes, which results in the greater need for home and institutional care. It seems to be necessary to screen patients for memory impairments with the use of such tools as the MMSE test because there is little connection between the caregivers' reports and the patients' real mental condition.

PC-025

The prevalence of obturative sleep apnea and the cardiovascular profile of polish elderly – the Polsenior Study

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Introduction.– Obturative sleep apnea (OSA) is an independent risk factor of the occurrence, progression and poor prognosis in cardiovascular diseases among the elderly.
Objectives.– To assess the relationship between the presence and severity of obturative sleep apnea and cardiovascular diseases, such as hypertension (HT), coronary heart disease (CHD), heart failure (HF) and arrhythmias in the elderly.
Methodology.– Presented data is a part of the results of a nationwide study (POLSENIOR project) which has been carried out since 2006 in the Polish population of 55-104-years-old. The presence and severity of OSA were diagnosed with the use of a screening method such as the Sleep Strip test. Mild OSA was diagnosed when the Apnea-Hypopnea Index (AHI) was between 15–24, moderate when AHI was 25–39 and severe OSA was diagnosed when AHI was greater than 40. On the basis of questionnaires carried out by trained nurses, medical records were analysed. For each respondent, Body Mass Index (BMI) was calculated and waist circumference (WC) was measured.
Results.– The examined group consisted of 697 subjects; good-quality results of Sleep Strip tests were obtained from 470 respondents. Some analyses were restricted by the accessibility of presented data. The mean age (±SD) of subjects was 72.1 ± 11.0 yrs (56.3% men). OSA was observed in 63.6% respondents, 37.8% of them suffered from mild OSA, 30.1% from moderate, 32.1% from severe OSA. In comparison to non-OSA patients, the subjects with OSA were older (72.8 ± 10.8 vs 70.9 ± 11.2 yrs; $P = 0.07$). More severe OSA was observed in older age groups of the respondents ($P = 0.02$). Higher prevalence of OSA was observed among men (68.1% vs 57.3%; $P = 0.017$); greater prevalence, but not a significant trend, was noticed among smoking respondents (66.8% vs 59.3%), patients with hypertension (65.9% vs 59.7%), arrhythmias (67.1% vs 61.3%), HF-sufferers (70.6 vs 66.3), after myocardial infarction (70.7% vs 66.7%) and stroke (71.0% vs 62.9%). The subjects with and without OSA did not significantly differ in their level of BMI and WC.
Conclusion.– Male gender and older age were observed to be related to the higher prevalence and greater severity of OSA. The analysed cardiovascular diseases did not significantly differ between patients with OSA and non-OSA respondents.

PC-026

Profile of patients attend by the geriatric clinic of a dementia diagnosis and treatment unit

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Introduction.– Determining the characteristics of patients attending the geriatric clinic for cognitive assessment is required to plan monitoring and identify patient needs.

Methods.– At the first visit, we analysed the characteristics of patients attended during 2008–2010 by the geriatric clinic of the dementia unit of our institution (Barcelona Serveis Assistencials). Variables assessed were: age, gender, body mass index (BMI), Barthel Index (BI) and Lawton Index (LI), Mini-Mental State Examination (MMSE), Global Deterioration Scale (GDS) and the Blessed Scale (BS) which reflects changes in three categories: daily activities (B1), habits (B2) and personality and behaviour (B3) and the total (TB). The diagnoses established after assessment were recorded.
Results.– Seven hundred and seventy-five patients, mean age 81.51 years (65–99), 234 male (30.20%) and 541 female (69.80%), mean BMI: 27.41, were included. Among them, 20.8% were obese and 35.87% overweight. Mean BI was 79.94; 71.48% were autonomous or required some help for the basic activities of daily living. Mean LI was 3.43; 42.8% were autonomous or required some help for instrumental activities of daily living. Mean MMSE was 18.83 (28.8% had MMSE $>$ 24). 24.1% had a GDS of 3 and 51.3% greater than 3. Mean TB was 9.1, and mean B1, B2 and B3 were 3.27, 1.98, and 4.53, respectively. Two hundred and twenty-five patients (29.0%) were diagnosed with cognitive impairment but did not meet DSM-IV criteria for dementia, 416 (53.7%) met criteria for dementia, of which 131 (31.5%) had Alzheimer disease, 155 (37.25%) vascular dementia, 104 (25%) mixed dementia (coexisting Alzheimer and vascular dementia) and 26 (6.25%) other causes of dementia. 134 (17.30%) had no cognitive impairment.
Conclusions.– The sample of patients evaluated in our dementia clinic had: advanced age, high proportion of overweight or obesity, good functional capacity, prevalence of moderate cognitive impairment, personality and behavioural changes, significant presence of vascular disease as a cause of cognitive impairment, significant presence of cognitive impairment without dementia.

PC-027

Comparison between two measurement methods of ankle-brachial index in patients admitted to a long-term care unit: Preliminary results

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Objective.– To assess and to compare ankle-brachial index (ABI) determination in patients admitted to a long-term care facility by Doppler (8 MHz) and by an automatic device for blood pressure measurement (SureSigns VM4).
Patients and methods.– Prospective study of 27 patients admitted to a long-term care unit. Demographic parameters and a geriatric assessment have been registered. Ankle-brachial index measurement was performed by two trained professionals together, using a calibrated mercury sphygmomanometer and peripheral Doppler 8 MHz, and also by an automatic device for blood pressure measurement, after five minutes of rest. Systolic blood pressure (SBP) of both arms has been measured and the highest value was selected for the calculation of the ABI (denominator). Subsequently SBP of the posterior tibial and pedia artery of each leg was measured, and the highest value (either the pedia or tibial) was used as the numerator in the ABI calculation index of each leg. For purposes of global cardiovascular risk assessment, the lowest value was chosen. Abnormal values of ABI were: less than 0.9.
Results.– Thirty-five [14 (40%) women] were registered. Mean age: 81.9 $\pm$ 8.1 years. Geriatric assessment: Barthel index: 21.1 $\pm$ 28.7; MMSE de Folstein: 19.6 $\pm$ 6.6 (in 20 people was not applicable because of sever dementia or aphasia); Charlson: 3.1 $\pm$ 1.9. Doppler: ABI abnormal: 13 (37.1%); ABI normal: 16 (45.7%); ABI non-compressible: 6 (17.1%). Automatic device for blood pressure measurement: ABI abnormal: 7 (20%); ABI normal: 28 (80%); ABI non-compressible: 0 (0%). Correlation between two measurement methods was statistically significant ($r = 0.67$; $P < 0.001$).
Conclusions.–
– Despite the small sample, a good correlation between two measurement methods of ABI has been found.
– Although ABI determination using an automatic blood pressure device is still controversial, in our setting may be a easier method.

PC-028

Beyond the metabolic syndrome

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Objectives.– Determine the prevalence, degree of control and treatment of Diabetes Mellitus (DM) and vascular risk factors in elderly patients in an acute geriatric unit.
Materials and methods.– Longitudinal descriptive study based on a population aged 65 years or more, hospitalised from February 1 to March 31, 2011. We included all patients with previous diagnosis of DM or fasting plasma glucose ($\geq$ 126 mg/dL) with HbA1c $\geq$ 6.5% (NHANES III). We analysed treatment, degree of analytical and clinical control of DM, vascular risk factors associated and complications according to the 2011 American Diabetes Association (ADA) Standards of medical care in diabetes.
Results.– We included 89 patients. History of type 2 DM was 67.4%. Among the patients, 20.6% were new diagnoses of DM. Fourty-five percent had poorly glicemic control (HbA1c $>$ 7%). The most commonly prescribed antidiabetic treatment were biguanides and glargine insulin. Hypertension was associated in 78.7% of patients and of these, 24.7% had no active treatment. The most frequently prescribed antihypertensive drugs were calcium antagonists (29.2%), loop diuretics (29.2%) and ACEIs (28%). Sixty-four percent of patients had mild to moderate chronic kidney failure, according to the Modification of the Diet in a Renal Disease 4 (MDRD) equation, being this condition unknown in 61.8%. Only 24.7% maintained normal renal function. In 43.2%, Cholesterol-HDL was less than 40 mg/dL, a condition significantly associated with a poor control of DM ($P < 0.05$). The prevalence of anaemia associated with DM was 73%, being predominantly normocytic.
Conclusions.–
– There are a large number of elderly patients with occult DM (undiagnosed) according to the diagnostic criteria of NHANES III.
– In elderly patients with diabetes mellitus, metabolic control is deficient in almost half of the patients and there is a low rate of treatment with ACE inhibitors and ARBs.
– Elderly patients with diabetes are often associated with other underestimated vascular risk factors as untreated high blood pressure, low HDL cholesterol, undiagnosed occult chronic kidney failure and rate anaemia of chronic disease.

Geriatric assessment 1/*Valoración Geriátrica 1*

PC-029

Application of a model of comprehensive geriatric assessment (CGA) during geriatric oncology consultations

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Introduction.– The National Comprehensive Cancer Network Guidelines recommends that all cancer patients over 70 years of age undergo a Comprehensive Geriatric Assessment (CGA). However, this procedure is extremely time-consuming, hindering its use during medical oncology consultations.
Objectives.– The objectives of this study were:
– to perform a specific model of CGA in patients over 70 years of age diagnosed with cancer in the Hospital Virgen de la Luz de Cuenca;
– to analyse the usefulness of this model in this population;.
– to identify factors that influence time required to complete that.
Materials and methods.– A model of CGA was created by utilizing validated questionnaires. This model was implemented between December 2008 and October 2010, prospectively and consecutively to all patients greater or equal to 70 years of age. We noted the amount of time that the procedure took and investigated what factors influenced response time using multiple regression analysis.
Results.– The study included 188 patients with a mean age of 79.16 years (ranging from 70.23 to 96.19 years of age), 57.24% of whom were male. Average scores were as follows: 1.04 on the Eastern Cooperative Oncology Group (ECOG) scale, 1.47 points on the Barber test, 89.42 points on the Barthel index, 7.75 points on the Lawton-Brody scale, 2.97 points on the Gijón scale, 0.91 errors as assessed by the Pfeiffer scale, 3.34 points on the NSI scale, and 1.09 points on the Charlson index. The average number of drugs consumed by patients was 4.34. One hundred and twenty-one patients (69.1%) considered the length of the CGA to be "appropriate". For 58.3% of the patients ($n = 102$), the difficulty in completing the CGA was rated as "acceptable". The mean length of time to perform the CGA test was 8.27 minutes (ranging from 3.3 to 15.5 minutes). A 15.6% of variation in the response time was explained by the Barber test and the ECOG scale ($P < 0.005$).
Conclusions.– The CGA model proposed does not take up much time during a consultation. However, specific models are needed to assess elderly populations at risk of frailty or patients with worse baseline measurement.

PC-030

A comparison of the fried criteria and the VES-13 questionnaire as screening instruments for frail elderly patients diagnosed with cancer

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Introduction and objectives.– This study seeks to identify the validity of the Vulnerable Elderly Survey (VES-13) questionnaire and the Fried criteria as methods of detecting frailty, compared to the gold standard, the Comprehensive Geriatric Assessment (CGA).
Methods.– This was a prospective study of patients ($\geq$ 70 years old) diagnosed with cancer at the General Hospital Virgen de la Luz de Cuenca between June and December 2010. Frailty was estimated using the Fried criteria (score ≥ 3) and the VES-13 questionnaire (score ≥ 3). We determined the area under the curve, the sensitivity, the specificity and the predictive values of each in relation to the CGA.
Results.– This study enrolled 58 patients. Twenty individuals (34.5%) were frail according to the Fried criteria and the VES-13 questionnaire. However, according to the CGA, 51 patients were frail (i.e., with ≥ 2 CGA scales with a pathological score). The Fried criteria had a sensitivity of 37.3%, a specificity of 85.7%, a positive predictive value of 95%, and a negative predictive value of 15.8%. For a cut-off of 1.50 when using the Fried criteria, the sensitivity of these criteria with respect to the VGI was 74.5%, and the specificity was 42.9%. The area under the curve was 0.647. The VES-13 questionnaire had a sensitivity of 39.2%, a specificity of 100%, a positive predictive value of 100%, and negative predictive value of 18.4%. The area under the ROC curve was 0.772 (95% CI, 0.612–0.932). For a cut-off of 0.50 when using the VES-13 questionnaire, the sensitivity was 96.1%, and the specificity was 28.6%.
Conclusions.– The Fried criteria and the VES-13 questionnaire are very specific for detecting frailty in elderly patients, although their sensitivities are low. The ability of the Fried criteria to predict frailty is poor, whereas the predictive ability of the VES-13 questionnaire is intermediate. The VES-13 questionnaire, as screening test, has superior screening criteria than the Fried criteria in this population. Another screening tools for detecting frailty in elderly patients diagnosed with cancer should be tested.

PC-031

Relationship between parameters of comprehensive geriatric assessment and institutionalisation risk in non-agerarian patients in an intermediate care unit

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Aim.– To assess the relationship between the parameters of comprehensive geriatric assessment and the institutionalisation risk in nonagenarian patients admitted to an intermediate care unit after acute care hospital discharge.
Patients and methods.– A four-years prospective study of all patients aged over 90 years was performed. The previous functional status (Lawton index and previous Barthel index), functional status at the moment of hospital admission (admission Barthel index), functional status at the discharge (discharge Barthel index), cognitive function (Mini-Mental State Examination of Folstein), nutricional status (serum albumin levels), comorbility (Charlson index) and number of geriatrics syndrome were registered. The patients were classified in two groups according to post-discharge destination: institution (nursing home or a long term care unit) or home.
Results.– The sample was composed by 128 nonagenarian patients (100 women); mean age 92.2 ± 2.1 year. From 128 patients registered, 11 died during unit-stay, eight were transferred to acute care hospital, two were transferred to another intermediate care unit and three were previously living in a nursing home. From the 104 patients evaluated, 31 (29.8%) were institutionalizated after discharge and 73 (70.2%) returned at home. Mean of evaluated parameters in patients with institution post-discharge destination versus the patients who returned at home were: Lawton index:

2.2 ± 2.8 versus 3.2 ± 2.7 ($P = 0.114$); previous Barthel index: 79.1 ± 25.1 versus 84.0 ± 20.9 ($P = 0.308$); admission Barthel index: 17.1 ± 17.1 versus 29.5 ± 16.3 ($P < 0.001$); discharge Barthel index: 34.2 ± 23.3 versus 64.8 ± 24.5 ($P < 0.001$); Mini-Mental State Examination of Folstein: 16.2 ± 5.8 versus 21.3 ± 5.3 ($P < 0.001$); serum albumin levels 3.1 ± 0.5 versus 3.1 ± 0.4 ($P = 0.912$); Charlson index: 1.9 ± 2.1 versus 1.5 ± 1.2 ($P = 0.170$) and number of geriatrics syndrome: 6.9 ± 2.3 versus 5.8 ± 2.3 ($P = 0.029$).
Conclusions.–
– Risk factors for institution post-discharge destination were: worse functional status at admission and at discharge, worse cognitive function and a greater number of geriatric syndromes.
– The previous functional status, nutritional status and comorbility were not related to the institutionalisation risk.

PC-032

Impact of comprehensive geriatric assessment (CGA) during oncologic treatment in frail elderly patients

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Introduction.– Recent data have suggested that CGA should be included in the management of old patients affected by cancer but evidences are rather limited. Therefore, we started a multicenter phase-II randomised controlled trial in order to compare classical oncological management with added CGA on functional status. We present intermediate results of this ongoing study.
Methods.– We included patients aged over 70 years, with newly diagnosed cancer, for which the initiation of therapy was considered ($n = 200$). After informed consent, eligible patients were screened for frailty, using VES-13 scale ($\geq 3/10$). Using a stratified sampling method, frail patients were randomised to either the intervention (with CGA) or the control group (conventional treatment). Primary outcome was functional decline at 6 months after the beginning of treatment, as measured by a change in the Activities of Daily Living score (ADL).
Results.– At this stage, 111 patients were randomised (intervention group: $n = 53$; control group: $n = 58$) with the following characteristics: mean age ± SD: 79.3 ± 5.8; women: 57.7%; mean VES-13: 6.4 ± 1.9; living at home: $n = 108$. Cancers were distributed as follow: colorectal (35.2%), lung (19.8%), breast (9.0%), urinary tract (5.4%) and others (30.6%). Half of the patients had a stage-IV cancer (47.8%), and 56.8% underwent chemotherapy. Mean ADL- and IADL-score were 4.9 ± 1.4 and 4.5 ± 1.8 respectively. Falls within one year were reported by 47.7% of the patients. In the intervention group, mean MNA-SF, MMSE and timed-uPC-and-go were respectively 9.0 ± 2.6, 24.8 ± 4.9 and 17.4 ± 11.6. After CGA, we proposed interventions for 41 (77%) patients: ADL support ($n = 26$ patients), nutritional support ($n = 18$), prevention of fall ($n = 11$), adaptation of non-oncologic medications ($n = 13$), psychological support ($n = 12$) and prevention of orthostatic hypotension ($n = 10$).
Conclusions.– These preliminary descriptive results showed that, according to the functional characteristics of our population, VES-13 scale did select a frail population. Moreover, in both groups, severity of cancer and aggressiveness of proposed treatment were high. However, these patients differed from usual geriatric patients. In this population, CGA identified new medical problems as indicated by the fact that more than one third of patients required one or more geriatric interventions. The study is actually ongoing and comparison between the two groups will be performed at the end of recruitment.

PC-033

Clinical characteristics associated with functional improvement during geriatric rehabilitation in older stroke survivors in Catalonia

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Objectives.– The prediction of functional recovery following a stroke is cardinal to stratify patients to design effective and efficient clinical and rehabilitation pathways, and to provide adequate information to patients and families. Unfortunately, evidence regarding prognostic factors in stroke rehabilitation is scanty, even more in older adults. We aimed at identifying possible predictors of functional recovery in a sample of stroke survivors admitted to geriatric rehabilitation units.
Methods.– Stroke survivors admitted to the approximately 2100 available geriatric middle-stay beds across the whole territory of Catalonia in 2008, after discharge from acute hospitals, were assessed at admission through the Catalan version of the Minimum Data Set (MDS). In a multivariable logistic regression model, we selected improvement Vs stability/worsening of functional status from admission to discharge as an outcome. Functional status was measured with the MDS Activities of Daily Living scale (ADL, range 4–18, best-worst score). Independent variables were extracted from the MDS, cognition being assessed through the Cognitive Performance Scale (CPS, range 0–6, best-worst). We adjusted the model for rehabilitation duration and intensity.
Results.– Of the 1192 admitted stroke survivors, 879 had follow-up data on functional status (mean age ± SD 77.5 ± 10.2 years, 56.2% women). Average length-of-stay was 47.1 days, 561 (63.8%) were discharged at home, 43 (4.9%) at a nursing home, 143 (16.3%) to long-term care, 47 (5.3%) returned to the hospital and 63 (7.2%) died. Mean ADL ± SD at admission was 13 ± 4.1, and mean ± SD change overtime was -2.3 ± 3.4, reflecting global improvement. In the multivariable model, worse ADL at admission was associated with functional improvement (OR, 95%CI = 1.1, 1.05–1.15). Conversely, worse cognition (OR, 95%CI = 0.8, 0.77–0.92), aphasia (OR, 95%CI = 0.59, 0.39–0.90), urinary incontinence (OR, 95%CI = 0.23–0.60) and pressure ulcers at admission (OR, 95%CI = 0.59, 0.40–0.87), as well as worsening CPS overtime (OR, 95%CI = 0.72, 0.62–0.85) were independently associated with a reduced probability of functional improvement at discharge.
Conclusions.– In our sample of older stroke survivors, different variables from a multi-dimensional assessment at admission were independently associated with functional recovery during geriatric rehabilitation. Our results suggest that a comprehensive geriatric assessment might be the basis for a prognostic stratification during stroke rehabilitation, although from a clinical point of view it remains necessary to make successive individualized evaluations to forecast correct clinical pathways.

PC-034

Mobility decline and ADL dependency in the oldest old home-dwelling women: a 9-year longitudinal study

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Introduction.– High age is a major risk factor for decreasing health, impaired mobility and loss of independence. Studies show that mobility limitation is a major if not a primary risk factor for loss of

independence in ADL. Thus, the objectives of this study were to assess changes in the Timed Up and Go test (TUG) and Activities of Daily Living (ADL) over nine years and examine predictors for mobility decline. In addition, at follow-up, the discriminative values of Timed Up and Go (TUG) scores regarding dependency in Basic (BADL) and Instrumental (IADL) Activities of Daily Living were examined.

Method.– This was a descriptive, longitudinal and cross-sectional study. Participants were hundred and thirteen home-dwelling women with mean age 88.4 ± 3.0 at follow-up, at study baseline 79.5 ± 3.0. Measurements at baseline and follow-up: TUG, BADL, IADL. Baseline: demographic factors, walking speed, stePC-heights, one leg stance, self-reported health, body mass index, diseases, number of medications and General Health Questionnaire.

Results.– Mean TUG scores increased from 6.7 ± 1.3 seconds to 13.2 ± 6.8 seconds. At baseline, 34.5% were dependent in one or two IADL items, nobody in BADL. At follow-up, 71.7% and 18.6% were dependent in one to five IADL and BADL items respectively. Slow comfortable walking speed, higher age and high BMI were independent predictors of longer TUG nine years later. At follow-up, 13 seconds gave the best balance between sensitivity (76%) and specificity (72%) for dependency in BADL, while the optimal discrimination point for IADL (10 seconds) had a sensitivity of 70% and a specificity of 75%.

Conclusion.– There was a substantial decline in mean mobility and ADL function during nine years. Slow comfortable walking speed was the most important predictor for mobility decline. TUG scores from 10 seconds upwards indicated dependency in IADL. Systematic screening with simple mobility tests like comfortable walking speed or TUG should be carried out by health professionals to identify those at risk for mobility decline and ADL dependency.

PC-035

Comprehensive geriatric assessment in older women affected by breast cancer: a novel approach to define pre-surgical frailty and cancer treatment planning. Work in progress

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Introduction.– Breast cancer is a common disease in the elderly and its management is a major challenge for oncologists and geriatricians alike. Many older women can benefit from intensive cancer therapies, yet evidence suggests that this population is undertreated. Indeed, when choosing treatment for elderly patients, chronologic age may represent a barrier to treatment. The comprehensive geriatric assessment (CGA) may be a suitable support for evaluation and treatment planning of older subjects, particularly for frail patients, characterized by a potential poor surgical risk. Aim of this study was to assess functional status by CGA in over-65-year-old women affected by breast cancer, at baseline and 6 months after surgery.

Method.– We studied 64 older women (median age 77 years, range 68–89), consecutively recruited and diagnosed with breast cancer. CGA was done using the following tests and scales: Mini-Mental State Examination (MMSE), activities and instrumental activities of daily living (ADL and IADL, respectively); Mini Nutritional Assessment (MNA); geriatric depression scale (GDS). The Medical Outcomes Study Short Form-36 (SF-36) was used as a measure of quality of life (QoL), while comorbidity was classified using the Charlson score.

Results.– Comorbidity (> 3 concomitant diseases) was present in 45.3% of patients, hypertension being the prevalent condition (75%). All the patients were polymedicated (47% took more than 3 drugs). Median Charlson score was 7 (4–12), showing a significant association with advanced age ($P < 0.0001$). All the patients resulted fully independent for ADL and IADL. Mean MMSE was 26 ± 3.7, indicating a good cognitive status; distribution of MMSE showed a significant inverse relationship with age ($P < 0.05$). The mean depression score was 3.3 ± 3.0, thus excluding major mood disorders. No patients resulted at risk for malnutrition (MNA score ≤ 23.5). The SF-36 dimensions Physical Component Summary and Mental Component System suggested a good overall QoL (63.4 ± 30.4 and 67.9 ± 26, respectively).

Conclusions.– Our preliminary data did not show evidence of significant cognitive and functional decline before surgery in a non-selected cohort of elderly women with breast cancer. CGA represents an effective tool for design cancer treatment plan based on evaluation of the vulnerability of elderly patients, thus avoiding a fixed, less aggressive, incongruous approach.

PC-036

Geriatric assessment as long-term mortality predictor

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Objective.– To evaluate the value of geriatric assessment as mortality predictor after hospital discharge during a year follow-up.

Methods.– Prospective study of patients discharged from the Geriatric Acute Care Unit during a three year period. Previous functional status (measured by Barthel Index [BIp] and Lawton Index [LI]), functional status at admission (measured by Barthel Index [BIa]), functional status at discharge (measured by Barthel Index (BId), cognitive status (measured by Pfeiffer test), nutritional status (albumin, cholesterol) and the presence of geriatric syndromes prior to acute illness and of new onset during acute illness were registered in all patients. Relation between these variables and mortality during the year following hospital discharge was studied.

Results.– Two thousand one hundred and forty-four patients, with mean age of 84.7 years, were studied. Mortality within the year after discharge was 45.71%. Mortality was negatively related to BIp ($P < 0.001$, OR 0.98), LI ($P < 0.001$, OR 0.79), BIa ($P < 0.001$, OR 0.97), BId ($P < 0.001$, OR 0.97), albumin ($P < 0.001$, OR 0.41) and cholesterol ($P < 0.001$, OR 0.99) and positively related to PT ($P < 0.001$, OR 1.09). Presence of immobility prior to acute illness ($P < 0.001$), pressure sores prior to acute illness ($P < 0.001$) and new onset immobility ($P < 0.001$) were the only geriatric syndromes related to mortality. Multivariate analysis showed independent relationship between one year after discharge mortality and BId, albumin, LI and PT.

Conclusions.–

– A poor functional, cognitive and nutritional status at discharge is related to a higher long-term mortality in elderly patients after hospital stay.

– A geriatric assessment and intervention may contribute to reduce mortality after hospital discharge.

– By identifying patients at risk, individual attention could be planned.

PC-037

Usefulness of Walter Index and Charlson Index as mortality predictors

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Objective.– To evaluate the usefulness of Walter index and Charlson index as mortality predictors after discharge from a Geriatric Acute Care Unit (GACU).
Methods.– Prospective study of mortality within the year following the discharge from a GACU. Patients discharged from the GACU during three consecutive years were included. Charlson Index (CI) and Walter Index (WI) was determined in all patients. CI estimates the probability of dying within a year according to the score given to some medical records (CI 0: 12%, 1–2: 26%, 3–4: 52% and > 4: 85%). WI estimates the probability of dying within a year according to the score given to six independent variables: gender, daily ling activities dependence, history of heart failure, neoplasm and albumin and creatinine levels before discharge. Probability of dying according to WI scores: WI 0–1: 13%, 2–3: 20%, 4–6: 37%, > 6: 68%). Relationship between both indices and mortality was studied. ROC curve was used to determine which index is a better mortality predictor.
Results.– Two thousand one hundred and forty-four patients, with a mean age of 84.7 years, were studied. Mortality rate one year after discharge was 45.75%. Mortality was significantly related to CI ($P < 0.001$, OR 1.27) and to WI ($P < 0.001$, OR 1.27). ROC curve for CI was 0.599 and 0.66 for WI. Probability of decease founded for different scores of CI was: 0: 21.49%, 1–2: 42.24%, 3–4: 50.89%, > 4: 59.9% and for scores of WI: 0–1: 12.8%, 2–3: 31.58%, 4–6: 42.7%, > 6: 63.58%.
Conclusions.–
– Charlson index and Walter index are related to mortality after GACU discharge.
– Walter index is a better mortality predictor than Charlson.
– Despite being related to mortality, neither Walter index nor Charlson index are good mortality predictor in our population.
– New mortality indices adapted to our population are needed.

PC-038

Geriatric assessment: A predictor of in-hospital mortality among congestive heart failure

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Objetive.– To evaluate the contribution of the geriatric assessment to predict in-hospital mortality in elderly patients with acute heart failure (AHF).
Methods.– Patients admitted the Geriatric Acute Ward with AHF for eighteen consecutive months were included. Previous functional status (measured with Barthel [BIp] and Lawton Index [LI]), functional status at admission (measured with Barthel Index [BIa]), functional decline (FD = (BIp – BIa)/BIp × 100), cognitive status (measured with Pfeiffer test [PT]), nutritional assessment (measured with albumin) and previous and new-onset geriatric syndromes were collected. BI was divided in four disability ranges: total (0–19), moderate (20–59), mild (60–89) and independent (90–100). FD was divided in five decline ranges: no decline (0–20%), mild (21–40%), moderate (41–60%), severe (61–80%) and total (81–100%). Geriatric syndromes were collected as positive or negative.
Results.– One hundred and seventy-five patients, with mean age of 86 ± 5.7 years, were evaluated; in-hospital mortality was 15.43%. Mortality was negatively related to BIp (P 0.02, OR 0.98), BIa ($P < 0.001$, OR 0.92) and LI (P 0.03, OR 0.77) and positively related to FD ($P < 0.001$, OR 1.04). In-hospital mortality was negatively related to BIp ranges (P 0.044, OR 0.55) and to BIa ranges ($P < 0.001$, OR 0.26) and positively related to FD ranges ($P < 0.001$, OR 2.88). Albumin levels were negatively related (P 0.017, OR 0.38). Geriatrics syndromes associated to increase of mortality were: previous immobility ($P < 0.001$), pressure ulcers (P 0.02) and acquired immobility (P 0.006). Only BIa and BIa ranges were independently related with in-hospital mortality ($P < 0.001$).
Conclusions.–
– A poor functional and nutritional status and the presence of previous pressure ulcers have decisive influence on in-hospital mortality in elderly patients admitted with acute HF.
– Identification of individual risk could be helpful to improve medical care in accordance with the estimated prognosis.
– Mortality predictive indexes for elderly patients with acute HF are needed.

PC-039

Functional level as measured with the Barthel Index is a strong predictor of survival in acute geriatric patients

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Introduction.– Functional decline is associated with increased risk of mortality in geriatric patients. Assessment of activities of daily living (ADL) with the Barthel Index (BI) at admission was studied as a predictor of survival in acute geriatric patients.
Methods.– All acute patients admitted for the first time between 1st January 2005 to 31st December 2009 were included. Retrospective data on Civil Personal Registry Code (CPR), BI, sex, age, and discharge ICD-10 were retrieved from the hospital patient administrative system (PAS), and survival until 6th-september 2010 from the CPR Registry. BI measured on a scale from 0 (ADL dependent) to 100 (ADL independent) are in PAS grouped: < 25, 25–49, 50–75 and > 75.
Results.– Five thousand and eighty-seven patients were included, 1,852 (36.4%) men and 3,235 (63.6%) women with mean age (SD) 82.0 (6.8) and 84.0 (7.0) years ($P < 0.001$). The median [IQR] length of stay was 8 days in men [5.14] and women [5.14] (ns), and the mean (SD) number of diagnoses 4.4 (1.4) and 4.3 (1.4) respectively ($P < 0.05$). The median [IQR] observation period was 1.4 [0.3 2.8] years. Mortality (Kaplan-Meier) was greater in men than in women ($P < 0.001$), and in both sexes strongly associated with BI. The median survival [IQR] in men and women respectively: BI < 25: 0.48 years [0.08 1.78] and 0.76 years [0.08 1.94], BI 25–49: 1.28 years [0.39 2.32] and 1.38 [0.33 2.72], BI 50–74: 1.21 [0.42 2.52] and 1.90 [0.86 3.38] and BI > 75: 1.80 [0.73 3.24] and 2.59 [1.11 4.14]. Inpatient mortality was 9.4% in men and 7.5% in women ($P < 0.05$). In a Cox regression analysis controlling for sex, age and co-morbidities (cancer, dementia, heart, pulmonary, diabetes, infections), the survival hazard ratio (95% confidence interval) of decreasing BI was 1.36 (1.32 1.41) ($P < 0.001$).
Conclusion.– BI is a strong predictor of survival in acute geriatric patients independently of co-morbidities. These data suggest that assessment of ADL may have a potential role in decision making for the clinical management of frail geriatric inpatients.

PC-040

Can the geriatric index of comorbidity predict perioperative mortality in colorectal cancer?

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Introduction.– The incidence of Colo Rectal Cancer (CRC) in Denmark is increasing. The perioperative 30-days mortality increases with age. In elderly patients (+ 70 years) it is known, that increasing comorbidity correlates to higher perioperative mortality. Mortality is higher in patients with medical complications compared to surgical complications. The stage of cancer is not correlated to the perioperative mortality. The Geriatric Index of Comorbidity (GIC) can predict short-term mortality in elderly patients in a geriatric department. GIC is defined by information based on the number of diseases and the severity of diseases from 15 different somatic organ systems as measured by Greenfield's Individual Disease Severity Index (IDS). In an attempt to reduce perioperative mortality in elderly patients undergoing CRC surgery, a pre- and perioperative geriatric assessment and treatment is planned. If we preoperatively can identify patients at risk of dying perioperatively by a cut-off value in GIC we can target our efforts.

Method.– All patients undergoing CRC surgery in Aarhus University Hospital from 01 January 2002 to 31 December2007, and who died perioperatively were included together with age- and sex-matched controls in the proportion 1:3. Exclusion: age less than 70 years. One hundred and two patients were identified. Ten patients were excluded. All patients were graded according to IDS and GIC. The present cancer diagnosis was not included in IDS.

Results.– A non-significant tendency towards a higher IDS in the patients dying perioperatively was shown: 5.6 (95% Confidence Interval (CI) 4.4–6.7) vs 4.7 (95% CI 3.7–5.1). No relation between high GIC-score and perioperative death was found.

Conclusions.– In this material, no cut-off limit in GIC that would have enabled us to select patients for pre- and perioperative geriatric assessment and care could be identified. It could not be shown, that GIC may be used as a preoperative screening method for identifying patients at risk of dying perioperatively. The results may be biased by the fact, that much information on medical conditions available from electronic data was recorded by surgeons. The results may be different, if the information is obtained by geriatricians. Prospective studies are needed to clarify this subject.

PC-041

Is health-related quality of life an independent prognostic factor for 12-month mortality and nursing home placement in frail elderly patients?

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Objective.– The aim of this study was to assess whether health-related quality of life can, when adjusted for clinical factors, predict mortality or nursing home placement (NHP) in frail elderly patients.

Methods.– A French prospective cohort of elderly subjects aged 75 or over, hospitalised in a medical ward via emergency department, was set up in nine French teaching hospitals. Data obtained from the Comprehensive Geriatric Assessment (CGA) and the Duke Health Profile (DHP) were used into a Cox model to identify prognostic variables for 12 months mortality and institutionalization.

Results.– Crude mortality and NHP rates were 34.1% ($n = 445$) and 16.1% ($n = 210$), respectively. Prognostic factors identified for mortality were: comorbidity level (moderate: HR = 1.40, 95% CI: 1.09–1.78; severe: HR = 2.70, 95% CI: 1.63–4.46), dependence for ADLs (HR = 1.68, 95% CI: 1.06–2.67), pressure sore risk (HR = 1.49, 95% CI: 1.16–1.90), risk of malnutrition (HR = 2.09, 95% CI: 1.46–3.00), delirium (HR = 2.25, 95% CI: 1.75–2.90), and 10 points increase in the DHP perceived health score (HR = 0.96, 95% CI: 0.93–0.99). Prognostic factors identified for NHP were: living home alone (HR = 1.82, 95% CI: 1.30–2.55), one child increase in the number of children (HR = 0.71, 95% CI: 0.51–0.99), dependence for ADLs (HR = 2.48, 95% CI: 1.39–4.44), dementia (HR = 1.93, 95% CI: 1.39–2.69), unplanned readmission within the 30 days following discharge of the index hospitalisation (HR = 2.05, 95% CI: 1.45–2.91), and 10 points increase in the DHP social health score (HR = 0.90, 95% CI: 0.83–0.99). Balance troubles and risk of malnutrition were no more significant when the DHP scores were entered into the NHP multivariable model when adjusted for other clinical variables.

Conclusions.– The perceived health and social health scores of the DHP were independent prognostic factors of, respectively, survival and NHP among hospitalised elderly patients. When associated with CGA, they could help screening frail patients, in order to set up as early as possible targeted interventions to restore/maintain modifiable prognostic factors such as nutritional status, functional ability, social support...

PC-042

R-test in the oldest old

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Introduction.– Examination of the heart rhythm was made by R-tests (event recordings) in all falls patients in the geriatric department, including the falls clinic, and in the present study it was decided to look into the results of the patient of +90 years old – the oldest old. The R-test examinations were made in order to find out whether arrhythmias might be the possible reason why the patients fall or maybe a cofactor to falls, and to find out if the heart rhythm in the oldest old differs from that in younger geriatric patients.

Materials.– A retrospective study of 86 R-tests examinations was made. The R-test examinations were made from 2008–2010. Eighty-two patients, 71 women, and 11 men, mean age 92.5, were included. The R-test recordings were made for one week (5–7 days) each, and the examinations were made as part of the standard examination for fall.

Results.– The results show that in the 82 recordings 30.2% of the patients had permanent atrial fibrillation, and other 38.3% had sinus rhythm with paroxystic supraventricular tachycardia. 8.1% had tachy-brady syndrome, 9.3% had pauses in their recordings of between 2.1 and 4.1 seconds day and night, and only one patient had ventricular tachycardia in the R-test.

Conclusion.– The results in the present study strongly indicate that 1/3 of the oldest old have permanent atrial fibrillation, and more than 1/3 have sinus rhythm with paroxystic supraventricular tachycardia. These arrhythmias may cause falls or symptoms as dizziness, vertigo, etc. that increases the risk of falling. Furthermore many of these arrhythmias are previously undiagnosed, and therefore the patients are not receiving antithrombotic medicine. Consequently they are at great risk of getting cerebral embolias and other serious complications. So apart from the benefit obtained by treating the arrhythmias, examination of the heart rhythm with R-test or Holter is important to reveal and thus hopefully prevent some of the cerebral embolia that may further disable these frail oldest old.

Geriatric care 1/*Cuidados geriátricos 1*

PC-043

Reasons for referral and profile of patients referred to the emergency room from a health center

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Objective.– To evaluate the reasons for urgent referral of patients admitted to a health center and their profile.
Material and methods.– Prospective for the year 2010. It picked up the reason for referral, duration of admission and discharge diagnosis, and demographic and clinical information of patients referred.
Results.– The center has 82 beds and in 2010 treated 292 patients. There were 38 referrals to the emergency.
The mean age of patients was 81.9 ± 11.3 years. 69.4% were women. The patients had pathological antecedents 5.92 ± 2.33, 9.03 ± 3.81 taking drugs and Barthel index at the time of referral was 41.53 ± 28.15. The leads are grouped in 13 musculoskeletal, 7 genitourinary, 6 cardiovascular, 4 respiratory, 4 gastrointestinal, 2 nervous system, and 2 others.
The most frequent reasons were: femur fracture, respiratory failure, wound infection and urinary tract infection by multidrug-resistant germ with 3 cases and 2 cases of hip dislocation, heart failure, lower gastrointestinal bleeding and stroke.
It led to 12.33% of patients admitted to the center. He entered the hospital, 65.8% of patients referred and the average stay was 9.56 ± 6.37 days. Thirty-six percent of income was more than 10 days. The match between reason for referral and discharge diagnosis was $> 86.8\%$.
There were 2 patients who died during hospitalization.
Conclusions.– Although the center has a medical staff 24 hours a day, there was not an insignificant number of referrals to the emergency. Two-third parts of referrals accounted income, which gives an idea of the justification of the move and there was an excellent match between reason for referral and diagnosis of hospital discharge. The most common causes of referral were related to the musculoskeletal system.

PC-044

Urinary sphincter re-education program in a geriatric day hospital (GDH)

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Objective.– 1. Analyse if participating in a sphincters re-education program decreases the prevalence of urinary incontinence in patients admitted to a GDH. 2. Assess if in these patients the toilet's use is improved after the rehabilitation program. 3. Analyse if the improvement of urinary incontinence provides benefits to their functional status.
Method.– Longitudinal study that included all the patients admitted and discharged from GDH between January 2010 and March 2011. The following data was taken into account at admission and discharge: age, sex, medical/nursing diagnosis, Barthel index, urinary incontinence presence, type of urinary incontinence, difficulty for toilet's use. During the admission an interdisciplinary intervention was made: type and etiology of urinary incontinence were registered, an urination schedule was established and a rehabilitation program was undertaken. The patient and family were trained on sanitary education.
Results.– Seventy-one patients, age 77.2 ± 10.3, 64.7% women. The most frequent medical diagnosis was ictus (39.4%). 71.8% of patients had impaired mobility as main nursing diagnosis. At admission, 52 patients had urinary incontinence (73.2%). Functional incontinence was the most frequent (48.0%). Among the 52 incontinent patients at admission, 13 (18.3%) became continents at discharge ($P < 0.05$). Twenty-one out of the 55 (29.5%) patients that presented toilet's use dependence at admission became independent at discharge ($P < 0.05$). Patients who at discharge were continent had a higher Barthel index than those who were incontinent (75.1 ± 16.2 versus 58.7 ± 18.3, $P < 0.05$).
Conclusions.– Functional urinary incontinence was the most frequent diagnoses at admission in a GDH. The urinary sphincters re-education program reduced urinary incontinence prevalence and improved the ability to use the toilet. Altogether was related with a significant functional improvement at discharge of GDH.

PC-045

A functional approach to non-oncologic palliative elderly in Toledo, Spain

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Introduction.– The goal in palliative care is to improve quality of life for patients and their families when they face a non-curable life-threatening disease. It is relatively easy to determine terminality in an oncologic disease but it is difficult with non-oncologic diseases. We studied the severity of specific diseases and functional status of non-oncologic patients admitted in our Geriatric Home Based Primary Care Unit.
Methods.– We reviewed the charts of 137 patients admitted in our service. We excluded oncologic patients. In the analysis we included reason for admission (non-oncologic palliative and other reasons like control of symptoms and prevention of hospital admissions), the New York Heart Association scale (NYHA), use of home oxygen, the Global Deterioration Scale (GDS), the Barthel index, the number of hospitalizations in the last 12 months, the presence of anorexia and/or disfagia, and the Charlson Index.
Results.– Of the 137 patients, 59 were oncologic palliative, 52 were non-oncologic palliative (NOP) and 26 were admitted for other reasons. Mean age was 85.53 (SD 5.82). NYHA III-IV was found in 27% of NOP and 4% of the others. Seventy-three percent of NOP and 15% of the others were on home oxygen. Severe dementia was present in 2% of NOP and 42% in the rest. Severe dependency was found in 40% of NOP and 81% of other patients. Sixty percent of NOP had two or more hospital admission compared to 42% in the rest. Anorexia and/or disfagia were present in 42% of NOP and in 62% of others. Charlson Index above three was found in 71% of NOP and 50% of other patients.
Conclusions.– Our study shows that it is easier to classify patients as NOP in the presence of severe heart failure, respiratory failure and other comorbidities. However it is more difficult to consider for hospice those patients who are demented and severely dependent. Future research should aim to a more functional approach to NOP patients to improve treatment and communication with the patients and their families in order to achieve goals of management.

PC-046

Functional status and efficiency of a rehabilitation program in nonagenarian patients: Comparison between four periods during an intermediate care unit admission

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Aim.– To compare improvement of functional status and efficiency of a rehabilitation program in nonagenarian between four periods of time.
Patients and method.– Barthel index was registered at admission (BA), the 15th day (B_{15}), the 30th day (B_{30}), the 40th day (B_{40}) and at discharge (BD), in 45 nonagenarian patients consecutively admitted during the last two years. Four periods were registered: first (from 1st day till 15th); second (from 16th day till 30th day), third (31st day till 40th day) and forth (from 41st day till at discharge). Efficiency index of each period: ([Barthel at the end of the period – Barthel at the beginning of the period]/days of each period) (patients who were discharged before the 40th day, discharge Barthel index was used). This index shows number of Barthel points improved per day in each period. An index $^{3}0.50$ indicates moderate intensity and $^{3}1$ high intensity rehabilitation. Patients who died and those who were transferred to hospital because acute deterioration were removed from the analysis in the next period.
Results.– Forty-five patients (36 [80%] women) were registered; mean age: 92.4 ± 2.3. Mean of Barthel index at the end of each period: BA ($n = 45$): 19.8 ± 13.7; B_{15} ($n = 45$): 31.8 ± 20.5; B_{30} ($n = 40$): 40.9 ± 23.4; B_{40} ($n = 36$): 46.7 ± 24.2; BA ($n = 41$): 54.8 ± 26.5 ($^{*}P < 0.001$) (*statistically significant difference between: BA versus B_{15}, B_{30}, B_{40} and BD; B_{15} versus B_{40} and BD; B_{30} versus BD). Means of efficiency index of each period: first ($n = 45$): 0.8 ± 0.8; second ($n = 43$): 0.7 ± 0.8; third ($n = 37$): 0.6 ± 0.9; fourth ($n = 37$): 0.6 ± 1.8 ($P = 0.87$).
Conclusions.– 1. Means of Barthel index increased significantly in each period. 2. Efficiency was similar in all periods and mean of efficiency index was considered adequate ($^{3}0.50$) in the four periods. 3. The rehabilitation process in nonagenarians has been shown to be effective and efficient throughout the time patient was admitted to the unit, so significant improvements of the functional status with a moderate intensity rehabilitation activity have been done, even after 30 days of admission.

PC-047

Subacute elderly patients admitted to an intermediate care unit after a short acute hospitalization: Baseline predictors of the final discharge destination

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Aims.– Intermediate care at a post-acute facility for patients with reactivated chronic diseases might be an alternative to prolonged hospitalization. Patients' selection is cardinal for an early discharge from the acute hospital to intermediate care. We conducted a pilot program to rapidly discharge older adults from a general university hospital, possibly directly from the emergency department (ER), to an intermediate care unit. At the acute facility, a geriatric expert team selected the candidate patients through a comprehensive geriatric assessment. We analyzed baseline clinical, functional and social characteristics associated with destination at discharge from the post-acute facility, to possibly detect variables which might improve the selection process.
Methods.– During 3 months, 68 subacute patients were transferred from the Vall d'Hebrón University Hospital to the post-acute Hospital Pere Virgilim. We performed a comprehensive geriatric assessment and registered discharge destination. We created a multivariate logistic regressions model in which the dependent variable was a different discharge destination from the previous living situation (combination of death, return to ER or long-term care). Demographics, functional, cognitive and social characteristics and geriatric syndromes were initially considered as independent variables: among these variables, those demonstrating statistically significant differences in a previous univariable analysis were included in the multivariate model.
Results.– The patients (mean age: 82.6 years [range: 65–97], 48.5% men) came from ER (69.1%) or medical wards (mean global acute length of stay [LOS] = 2.6 ± 2.9 days), mainly after reactivated cardiorespiratory chronic diseases (75%). After a mean post-acute LOS = 11.4 ± 4.2 days, 56 patients were discharged at the previous living situation, 2 back at ER, 7 at long-term care, and 3 died. In the final multivariable model, being a men ($P = 0.037$) and a worse nutritional status ($P = 0.013$) were associated with an increased risk of a different discharge destination from the previous living situation.
Conclusions.– In our sample, intermediate care for subacute patients with reactivated chronic diseases provided satisfactory clinical results in terms of discharge destination, possibly suggesting a correct patients' selection process. However, aspects of the comprehensive geriatric assessment, such as nutritional status, might help to refine this selection and might be useful even in the ER.

PC-048

The geriatric emergency department: One year later

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Introduction.– Last year we reported on early experiences of a geriatric advanced practice nurse practitioner (APRN) embedded in a traditional Emergency Department (ED). As a follow-up, we analyzed our data 1 year later to define a simple triage algorithm to generate early consults for patients most likely to benefit from geriatric evaluation in the ED.
Methods.– We analyzed a convenience sample of consults from 9/20/2010 to 2/28/2011 for the major presenting diagnosis compared to discharge status stratified by age. We also computed admission rates and compared them to averages of all over 65 years olds.
Results.– From 9/20/2010 to 2/28/2011, a total of 371 patients over the age of 65 were evaluated by the geriatric APRN. The majority of patients (54%) evaluated by our APRN were over the age of 86. The overall admission rate was 55% whereas for all patients over 65, the rate was 49%. Ninety patients (26%) returned back home or to ECF with no change in level of care, and 63 (19%) were returned to the community with a higher level of care. For the 19% of patients returned to the community with a higher level of care, the major presenting complaint across all age deciles was falls and the percent of fallers returned to the community with services increased linearly with age (65–70, 4%; 71–80, 19%; 81–90, 21%; > 90, 23%).
Discussion.– Compared to one year ago, our daily census has risen slightly and the overall admission rate for patients seen by our APRN has increased from 31 to 55%. We believe this reflects a higher level of medical acuity of the patients for which we are being consulted. Based on these results, targeted efforts by our APRN should be directed at patients over the age of 70 who present to ED for falls. Especially in the oldest old where discharge to the community with increased services after fall is more likely, targeted interventions may help to speed time in the ED, lead to greater patient satisfaction, and result in less iatrogenic complications.

PC-049

Factors determining the discharge of stroke patients admitted in an intermediate care unit (ICU) to a geriatric day hospital (GDH)

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Objective.– Identify which factors determine the discharge to a geriatric day hospital (GDH) of patients with stroke admitted into an intermediate care unit (ICU).

Method.– Retrospective study that included all patients with stroke admitted in an ICU between July 2008–December 2010. The following variables were taken into account: age, sex, origin, destination at discharge, cohabitation with family, income, presence of primary caregiver, architectural barriers, average stay, medical/nursing diagnosis, previous situation (Barthel, Lawton, cognitive impairment, depression), Charlson, number of treatments at discharge, presence during admission at ICU of aphasia, ostomies, ulcers, cognitive impairment (MMSE), depression (Yesavage), complications, orthoses and upper extremity impairment. Also the following variables at admission/discharge of ICU were recorded and compared: functional urinary incontinence, Barthel, Norton, sedestation tolerance, ability to walk, technical aid, dysphagia. All variables were analyzed based on whether at discharge of ICU the patients joined GDH or not.
Results.– Seventy-six patients (52.6% women) were admitted to ICU with an average age of 77.4 ± 11.7. Sixteen patients (21.0%) were discharge to GDH. When comparing the patients who were admitted to GDH with the ones that were not, statistically significant differences were found ($P < 0.05$): previous Lawton (GDH: 6.9 ± 1.2 versus 4.8 ± 2.7), presence of functional urinary incontinence at admission to ICU (GDH: 68.7% versus 95.0%) and at discharge from ICU (GDH: 25% versus 68.3%), upper extremity impairment (GDH: 100% versus 78.3%), orthoses use (GDH: 37.5% versus 13.3%), Barthel at discharge (GDH: 61.6 ± 22.0 versus 40.3 ± 31.3) and ability to walk at discharge from ICU (GDH: 97.7% versus 50%).
Conclusions.– In our study, the main factors related to discharge to a GDH of stroke patients admitted into an ICU, are functional. Thus, previously they were more independent in instrumental activities, had less presence of functional urinary incontinence both at admission and discharge from ICU, better Barthel index at discharge, higher frequency of upper extremity impairment and increased use of orthoses. One of the main variables related to future admission to a GDH was the ability to walk. On the other hand, no statistical significance was found in any of the other analyzed factors such as the cognitive function or the social support.

PC-050

Functional activity at discharge of geriatric patients after admission to a neurological rehabilitation unit

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Objective.– To identify the functional activity of patients > 80 years after a stroke at discharge in a neurological rehabilitation unit.
Method.– Descriptive retrospective study of patients > 80 years admitted after suffering a stroke in 2010. Patients who returned to a unit of acute care were excluded.
The functional activity at discharge was valued by the following means: functional gain, Barthel index and Functional Ambulatory Classification (FAC).
Results.– Of the 24 patients included, 16 were female (67%) and 8 male (33%). The average Charlson index was 2.5 ± 1.6.
58.3% suffered isquemic stroke, 29.2% hemorragic stroke and 12.5% lacunar stroke.
Fifty percent presented right hemiplegia and 50% left hemiplegia.
Barthel index on admission was 15.8 ± 13.3 and the average score in the FAC was 0.
The average stay was 69.3 ± 28.2 days.
Barthel index at discharge was 45.6 ± 30.2, functional gain was 29.8 ± 23.3 and the average score in the FAC at discharge was 2.
45.8% had at discharge severe disability (BI $\leq$ 40), 16.6% moderate (BI: 41–60), 29.1% mild (BI: 61–90) and 8.3% were independent (BI > 90). Twenty-five percent at discharge were immobile, 33.3% required assistance from 1 or 2 people, 25% needed visual supervision and 16.6% were independently mobile.
Conclusions.– The majority of the patients were female, had suffered ischemic stroke and were immobile. All the patients admitted had a severe disability.
More than half (54%) at discharge had improved their functional situation and 75% were mobile.
Elderly patients who have suffered a stroke and present with a severe disability can gain functional benefit from admission to a neurological rehabilitation unit.

PC-051

Emergency department screening for older adults at risk of adverse health outcomes: The diagnostic accuracy of the emergency department/geriatric screening tool compared to the safety management system screening bundle

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Introduction.– The aim of this study was to evaluate the diagnostic accuracy of the (**E**mergency **D**epartment/Geriatric) **S**creening **T**ool compared to the (**S**afety **M**anagenent **S**ystem) **S**creening **B**undle[*], to determine if the same patients were classified as being fragile.
Methods.– This was a cross-sectional study using a cohort of patients aged 65 years or older at an ED in Spring 2010. The study compared results of the **ST** with results of the **SB**. Subjects were evaluated with the 8-item **ST**, administered by nurses, and the **SB**, administered by the researcher[2]. Measures to quantify validity such as sensitivity, specificity, positive and negative predictive values and likelihood ratios were calculated. In addition, the **R**eceiver **O**perating **C**haracteristics curve analysis was used to report the test accuracy, to investigate if all items were needed in the instrument and to determine the appropriate cut-off score.
Results.– During the investigation 300 patients gave informed consent. The area under the **ROC** curve was 0.83 (95% CI 0.78–0.88). The item recent ED-visit or admission to hospital could be removed without changing the validity (AUC 0.84 [95% CI 0.80–0.88], $P = 0.28$) (Table 1). In both the 8-item and 7-item **ST**, the overall misclassification was lowest at a cut-off score of 2, respectively 52% and 47%. Using a cut-of score of 2, the 7-item screening tool has a sensitivity of 64% and a specificity of 89%.
Conclusion.– The Emergency Department Screening Tool has a moderate validity compared to the Safety Management Screening Bundle and can be used to identify most of elderly Emergency Department patients at high risk of adverse health outcomes.

Table 1. Area Under the ROC Curve of the Sreening Tool.

ED Geriatric Screening Tool Items	AUC (95% CI)	PC-value
Polypharmacy	0.825 (0.779–0.871)	0.716
Cognitive problems	0.812 (0.761–0.859)	0.002
Malnutrition	0.818 (0.770–0.866)	0.136
Dependency in ADL/difficulty transferring/urine incontinence	0.813 (0.764–0.862)	0.010
Recent fall	0.769 (0.716–0.822)	< 0.001
Overloaded care giver	0.830 (0.784–0.876)	0.727
Recent ED-visit or admission to hospital	0.839 (0.795–0.884)	0.284
Suspicion of abuse or substance abuse	0.828 (0.781–0.874)	0.199

[*] SMS Practical Guidelines "Frail Elderly". Available at: http://www.nvvc.nl/UserFiles/Richtlijnen/Alg/Praktijkgids_Kwetsbare_ouderen_VMS.pdf. Accessed February 1, 2010.

PC-052

The tyrolean geriatric fracture center - orthogeriatric co-management: Our concept, experiences and results after two years

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The demographic changes lead to an enormous increase of geriatric trauma patients aged 65 and older. Since 2001 patient admission at the Department of Traumatology in Innsbruck has increased by 63% and the number of surgical interventions by 54%. Due to the high prevalence of multimorbidity, the management of these patients constitutes a special challenge for the surgeons. Following international trends and to optimize the clinical outcome, we established an orthogeriatric fracture center in Innsbruck, in cooperation with the Department of Geriatric Medicine (LKH Hochzirl) and the Department for Anesthesiology in Innsbruck. Our presentation describes the concept of our orthogeriatric center as well as first experiences and results after 2 years and more than one thousand patients.

PC-053

Femur fracture patients admittance in an acute geriatric unit

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Objetives.– To describe the features of patients admitted in an acute geriatric unit (AGU) and evaluate results.
Methods.– Descriptive pre and post of patients $>$ 70 y/o with femur fracture admitted to an acute geriatrics unit (AGU) from June 1st to December 31st, 2010 compared to year 2009.
Sociodemographic data.– Age, gender, place of origin, discharge destination. Hospital stay and preoperative period. Functionality: Lawton Index (LI), Barthel Index (BI). Pluripathology: Charlson Comorbility Index (CI).
Results.– Ninety patients were admitted in the AGU; 67 women (75%), mean age 83 years. 75.5% came from home, 18.8% from a residency and 5.5% from a Sociosanitary. Mean LI of 2; pre-admittance BI 72, admittance 21 and discharge 32. Mean CI of 2. Thirty-five patients (38.8%) had cognitive impairment. Eighty-eight (98%) underwent surgery. Mean Preoperative time 2 days. Mean hospital stay 7.5 days. Fifty-three patients (59%) experienced delirium, and 24 (26.6%) patients had other perioperative complications. Mortality 1 (1%) in AGU and 4 (4%) in palliative care. Discharge destination: 47.7% sociosanitary, 27% residence and 16.6% residency. Comparative between 2009 and 2010 (AGU introduction in June, 2010): mean preoperative period 2.9 days from January to May 2010 and 2 days from June to November 2010. Mean hospital stay 15.4 days (2009) and 7.5 days (2010). Discharge destination: residence 43.7%, sociosanitary 48%, residency 1% and death 4.2% in 2009; after AGU: residence 27%, sociosanitary 47.7%, residency 16.6% and death 1%.
Conclusions.– Type of patient admitted to this AGU: 83-year-old woman, coming from home with a LI of 2, BI of 72. Surgery within 2 days, discharge from AGU 7.5 days.
Destination after discharge increased to residency and decreased to residence comparing 2009, with an important reduction of mortality from 4% in 2009 to 1% in the AGU.
Preoperative period was reduced from 2.9 days to 2 days and hospital stay from 15.4 days to 7.5 days after admittance into AGU.

PC-054

Municipal cost and impact on home aid utilisation and nursing home services following hip fracture – A population-based study

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Introduction.– Due to the growing elderly population, the economic burdens of hip fractures (HFx) are expected to increase in the future. The society will have to make priorities and allocate resources, and it is therefore of great interest to know the health care costs following an HFx. The aim of this study was to explore changes in home care and nursing home (NH) costs following an HFx in a Danish population.
Method.– We included all patients home dwelling before HFx, residing in Odense Municipality, aged 45+ years with HFx admitted to orthopaedic department during 2005. Cost data were collected for the period 90 days before HFx and 90 days after discharge. A barcode system was used by the Municipality to register exact time consumption of home care services and national register data were used to obtain the number of days spent in NH. Costs were calculated using the municipal price tariff for home care and NH services accounting for patients dying and days spent in hospital for any reason during data collection period. Data are expressed as mean (SD) or median [25%, 75%].
Results.– A total of 264 HFx patients (164 women, 100 men) aged 81.1 [71.4; 87.5] years were included, 6.4% died in-hospital, and further 7.7% during 90 days follow-up. The daily use of home care increased from 5.7 [0.0, 26.1] to 21.3 [0.0, 76.5] minutes per patient ($P < 0.001$) and 19.7% were discharged from hospital to NH. The daily cost per patient increased from 3.71 € [0.00, 16.92] to 22.85 € [1.83, 72.54] ($P < 0.001$). Patients living in own home throughout the period (74%) had the largest increases in cost per individual and as a group, while the highest average cost per individual was seen in those discharged to NH.
Conclusion.– Our results show that home care and nursing home costs increase six-fold following an HFx. With the increasing numbers of elderly at risk, it might be cost-saving to initiate HFx prevention programs.

PC-055

Influence of comorbidity on functional gain of patients admitted to a geriatric rehabilitation and management unit-convalescence

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Objective.– To evaluate the influence of comorbidity, measured by the Charlson index, on functional gain of patients admitted to a geriatric management and rehabilitation unit (GMRU).
Patients and methods.– Retrospective study of 2455 patients admitted to GMRU of Hospital Sociosanitari de L'Hospitalet between 2001–2010, after excluding patients referred to palliative care or acute patients units, and death. We analyzed the functional gain experienced (Barthel at discharge –Barthel at admission), and was related to the Charlson index collected at admission, categorized more than 2 or less than 2, and each item of the

index. Univariate statistical analysis and logistic regression were performed using SPSS 17.
Results.– Patients admitted with Charlson index > 2 had less functional gain in the univariate analysis, but this was not confirmed by logistic regression. As for the conditions analyzed individually, dementia, extended cancer and previous hemiplegia showed lower functional gain statistically significant in univariate analysis and logistic regression.
Conclusions.– The comorbidity at admission, measured by the Charlson index, of patients admitted to a geriatric rehabilitation and management unit does not influence significantly on the functional outcome of the patient. However, there are certain conditions at admission (dementia, stroke and disseminated neoplasia) that determine the functional gain.

PC-056

Comparative characteristics of home care nursing services use in community-dwelling elderly from urban and rural environments in Poland

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Introduction.– This paper is a report of a study comparing home care nursing services use in community-dwelling elderly from urban and rural environments in Poland. In current literature, there is a paucity of data based on multidimensional geriatric assessments concerning the provision of medical services carried out by nurses for older people from urban and rural environments.
Methods.– A sample group of 935 older people from the urban environment and 812 from the rural area qualified randomly according to declarations submitted in the years 2006–2010.
Results.– The rural dwellers (82.8%) nominated their family members as care providers more often than the city inhabitants (51.2%). Home nursing care was provided to 4.1% of people in the city and 6.5% of the country. Post-stroke condition, poor nutritional status and low physical activity level, as well as low scores for activities of daily living (ADL), instrumental activities of daily living (IADL), and mini-mental state examination (MMSE) values were all determinants of nursing care, both in urban and rural areas. In the urban environment, additional predictors of nursing care use were age, presence of ischaemic heart disease, diabetes and respiratory disorders, number of medications taken and a high depression score.
Conclusions.– Poor functional status is the most important determinant of nursing care use in both environments. In the urban environment, a considerable proportion of community-dwelling elders live alone. In the rural environment, the elderly usually have someone available for potential care services. The main problem seems to be seeking nursing care only in advanced deterioration of functional status.

PC-057

Direct admission to intermediate care for older adults with reactivated chronic diseases managed by an expert primary care team as an alternative to conventional hospitalization. A pilot study

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Objective.– Direct admission of geriatric patients with reactivated chronic diseases to an intermediate care (IC) geriatric unit may be an alternative to hospitalization in an acute general hospital. In a specific geographic area of Barcelona, we implemented a pilot clinical pathway to promote direct admission of these patients, routinely and actively followed up by an expert primary care team, to a specialized geriatric IC unit. We aim to compare baseline characteristics and outcomes at discharge between patients admitted from home (HO), and those admitted from an acute hospital (AH) where they had been previously hospitalized for similar acute diagnostics.
Methods.– We included patients admitted to IC from January 2010 to March 2011. We recorded demographics, social status (living alone), comorbidity (Charlson index) and number of chronic medications. At admission, we assessed functional status (Barthel index), cognitive status (Pfeiffer SPMQ), risk of falls (Downton scale), and risk of pressure ulcers (Emina scale). We recorded discharge destination (including mortality and transfer to the acute hospital), and length of stay.
Results.– We had 41 admissions, (20 AH vs 21 HO). Prevalent diagnostics at admission were: chronic heart failure (41.5%), COPD (12.2%), chronic kidney disease (9.8%) and urinary infections (7.3%). Mean age (SD) was 85.46 ± 7.12, 26 (63%) were women. Comparing the two groups, there were no statistically significant differences in age, gender, social status, comorbidity and number of medications. At admission in IC, patients coming from home had a worse functional status (Barthel score 65.2 ± 33.1 AH vs 43.7 ± 25.2 HO, $P < 0.02$), but similar cognition, risk of falls and of pressure ulcers. At discharge, AH and HO had comparable mortality (4 Vs 3 deaths, $P = 0.52$), transfer to the acute hospital (3 vs 0, $P = 0.125$), and length of stay (42.6 ± 25.4 vs 37.3 ± 20.8 days, $P = 0.469$).
Conclusions.– At admission to IC, compared with patients discharged from the acute hospitals, patients admitted from home had similar demographic, clinical and social characteristics and a worse function. Outcomes at discharge were similar. Our pilot results encourage exploring direct admission to an IC unit, linked with a primary care expert team, for older adults with reactivated chronic diseases, as an alternative to conventional hospitalization.

PC-058

Physiological profile assessment used in an outpatient falls clinic admitting functionally impaired older persons

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Introduction.– Falls in the elderly is a common problem, and the reasons for falling are often complex and multifactorial. The Physiological Profile Assessment (PPA) is a tool designed to screen for individual falls risk in elderly people. Our aim was to investigate how the PPA related to the already extensive assessment being performed in an outpatient falls clinic admitting patients generally considered functionally impaired.
Methods.– All patients admitted to the geriatric outpatient falls clinic at St Olav University Hospital in Trondheim, Norway from 2007 to 2010 were included. The patients were divided into two groups depending on their PPA score: a high-risk group (marked and very marked falls risk, as assigned by the PPA algorithm) and a moderate-low-risk group (moderate and mild falls risk).
Results.– One hundred and twenty-three patients were included, with mean age 81.7 years (Standard deviation [SD] 6.0), and Body Mass Index 25.9 (SD 3.7). 60.2% were female. The mean PPA score

of 2.9 (SD 1.2) indicated that the mean test subject fell into the "marked falls risk" category. Mean score for Timed UPC-and-Go (TUG) was 17.9 seconds (SD 5.1), Berg's Balance Scale 39.7 (SD 8.8), Falls Efficacy Scale International (FES-I) 34.6 (SD 12.0), and Sit-to-stand 7.5 times/30 seconds (SD 3.9). The high-risk group scored significantly worse than the moderate-low-risk group on Berg's Balance Scale (difference 10.4 [95% Confidence Interval [CI]: 6.8–13.9]), FES-I (difference 10.3 [95% CI: 4.8–15.7]), and TUG (difference 5.1 [95% CI: 3.1–7.2]). The high-risk group used significantly more prescription drugs than the moderate-low-risk group (1.8 [95% CI: 0.4–3.2]), and had suffered significantly more falls during the last year before assessment (PC-value 0.016).
Conclusions.– This study confirms that the PPA score in these functionally impaired falls patients is generally related to clinical test scores measuring balance and mobility. The question remains whether the existing falls assessment protocol, or parts of it, could or should be replaced with the less time-consuming PPA.

PC-059

Perioperatory medicine and mortality in geriatrical major vascular surgery of high risk: "To put in radar" strategy

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Introduction.– "A priori" patients in a case-mix of major vascular surgery are exposed to increased risk for suffering more complications, and will die more.
Objectives.– To describe the results of a perioperatory medicine program focused on process safety, and the results in the 4 types of interventions that capture the highest mortality in the geriatric subset, and aims to save early and effectively the more complex and vulnerable patients by the attitude of "TO PUT IN RADAR" the individual patient, and the implementation of systematic interventions "before" anesthetic risk-assessment, "during" intra-check list, and "after" surgery-plant transfer, and advance standardized major complications.
Patients and methods.– Prospective, observational and evaluative research, based on 126 geriatric patients from 395 vascular surgery cases operated on in 2010.
Results.– Case-mix added: abdominal and thoracic aorta: 29, 30% higher in men, lower limb revascularization: 40, without differences by gender, and carotid artery: 30 cases, 6 times more in males, and major amputation: 27, 3 times more in women. Varied but significant complications captured the highest mortality (1 of 6) in 31 cases (25%) including cardiopulmonary diseases, 1-stroke, sepsis and renal complications. The most frequent were disorders of the internal environment, not permissible hyperglycemia and delirium. Seventeen of the 395 patients operated died (3.9%, and 200 basis points lower to 2008 [5.9%]) and 7 of them (5.55%) of geriatric case-mix added (in early stage: 4 aorta cases and 1 lower limb acute ischemia) and 2 of the remaining 12 until 30 days after surgery. The difference observed attributable to age (+1.6%) was irrelevant and perhaps this is the key result: the non-difference.
Discussion.– The strategy provides quick, agile and early assistance to any complication; when it is *still* developing, it is detected by the nurse, the most common, or by a doctor who does not expect the processing of conventional "reference sheet". A proper ratio of doctors and nurses, the timely recognition of the development of a complication and, of course, an effective system of communication "within the team" probably are necessary factors for better prognosis.

PC-060

The geriatric care in Portugal geriatric university unit/Centro Hospitalar Lisboa Norte

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The recognition of the importance of Geriatric Medicine in Portugal has been a slow and hard process. In spite of the difficulties we have given the first step developing a pioneer Geriatric Outpatient Clinic and other related projects. We hope that our work can help others in the same situation.
The Geriatric Outpatient Clinic.–
Objective.– This poster aims to inform how we organised the first Geriatric Outpatient Clinic in Portugal and how it works.
How it Works.– First the patient is informed of what is a Geriatric Outpatient Clinic and its goals. Then begins the intervention of the various team members.
Geriatric Assessment.– The beginning of the process takes place by the nurse, who evaluates different anthropometric data such as weight, height, blood pressure, heart rate, and applies the following geriatric assessment:
– **Katz Index**-evaluation of independence for the basic activities of daily living;
– **Lawton Instrumental Activities of Daily Living Scale (IADL)**, Lawton & Brody;
– **Mini Mental State Examination (MMSE)** - evaluation of cognitive status;
– **Geriatric Depression Scale**, Sheik JI and Yesavage JA, - mood state evaluation;
– **Mini Nutritional Assessment Screening (MNA)** - nutritional evaluation.
Then the patient goes to the Rehabilitation Department to be assessed by a physiotherapist which applies the **Functional Walking Test**, **Holden MK**, and the **Tinetti Test** for balance and gait. Finally the patient is observed by a geriatrician in collaboration with a pharmacist whose intervention support is based on **Beers Criteria**, adapted to the Portuguese population, on the **Start** (Screening Tool to Alert Doctors to the Right Treatment) and **Stopp** (Screening Tool of Older Persons Potentially Prescriptions) **Criteria**, the **Zahn Criteria** and the **MAI** (Medication Appropriateness Index). On the next visit the patient is enquired by a Social Worker, using the **Apgar Scale** to evaluate family support and the **Gijón Scale** for the social and family assessment. If in the MMSE test the patient has cognitive impairment is sent to a Psychologist or Psychiatrist. The patient goes to the Nutricionist/Dietitian if malnutrition is detected in the MNA screening.
Developing projects.– Home visits, primary heath care and other institutions protocols.

PC-061

Benefits of admittance to a functional recovery unit for elderly patients

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Objectives.– To describe patient profile–functional, mental and social characteristics, geriatric syndromes and degree of comorbidity.
To analyze the effectiveness of rehabilitation by functional gain and length of stay.
To identify complications presented during admission and destination at discharge.

Methods.– Descriptive retrospective study of patients admitted between March and November 2010.
Source: clinical history following specific protocol.
Statistical analysis was performed utilizing SPSS.
Results.– Initial sample of 93 patients, 14 excluded (13 returned to acute care and 1 following bereavement). Of the 79 patients studied: 59 female (74.7%) and 20 male (25.3%). Mean age 79.09 ± 8.49; medium age 79 and mode 81. Mean stay 60.71 ± 27.56 days. The average Charlson Index was 3.33. Diagnosis for admission includes 69.6% following traumatology surgery (hip fracture 44.3%, prosthesis related illness 8.9%, spinal surgery 5.1%, knee replacement 3.8%, limb amputation 3.8% and others 3.8%) and 30.4% for immobility (surgical 17.7% and medical 12.7%).
Geriatric syndromes on admission include polymedication 77.2%, depression/anxiety 67.5%, sleep disorders 67.1%, malnutrition 65.4%, falls 58.2%, urinary incontinence 43%, delirium 35.4%, moderate-severe mental deterioration 15.2%, and mild mental deterioration 13.9%. Mean syndromes presents as 4.43 ± 1.78.
Barthel index on admission 36.46 ± 21.68, at discharge 82.28 ± 24.67.
Functional gain 45.82 ± 17.78.
At discharge 10.12% were severely dependent (B.I ≤ 40), 8.86% moderately dependent (B.I 41–60), 24.05% mildly dependent (B.I 61–90) and 56.96% independent (B.I > 90), emphasizing 43.03% with B.I = 100.
Complications displayed: pain 40.5%, respiratory infections 31.6%, urinary infections 27.8%, CHF 22.7%, delirium 17.7%, falls 10.12% and others 72.1%; of these 70.8% presented ≥ 2 complications.
Social problems presented in 26.6% patients.
Eighty-one percent patients were discharged home, 11.4% to residential care and 7.6% to others.
Conclusions.– The profile of the geriatric patient is displayed as octogenarian, multimorbidity, polymedicated, with frequent complications and some social problems.
After a 2-month admission period a considerable increase in independence presented in $> 80\%$ of patients. Emphasizing an increase in functional gain (> 45 points) and ADL (*activities of daily living)* tasks.
Discharge destination was mainly home.

PC-062

Prevalence and risk factors of inappropriate prescribing in a nursing home

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Introduction.– The inappropriate prescribing in elderly patients is a widespread health problem and is associated with increased adverse reactions and increased health care spending. One of the most widely used criteria for improving prescribing is the criteria of Beers, designed to detect inappropriate prescriptions in nursing homes in the United States. Recently published new criteria called European STOPP/START.
Objective.– To determine the prevalence and risk factors of inappropriate prescriptions in institutionalized elderly patients using the criteria of Beers and STOPP/START.
Method.– Prospective study conducted in a nursing home of Mataró of Catalan Institute of Health and Social Services (ICASS) in all patients institutionalized during October–December 2010.
Results.– We evaluated 144 patients (66% women), mean age 83.4 (SD 6.9) years, weight 65.1 (SD 14.6) kg, 2.8 (SD 1.3) comorbidities and 7.4 (SD 3.3) drugs per patient. According to the Beers criteria, 9.03% of patients had one inappropriate drug, while according to STOPP/START 50.69% of patients had inappropriate prescriptions. Analyzing all the prescription lines ($n = 1072$), we found 15 inappropriate prescriptions according to Beers criteria, 84 according to STOPP criteria and 26 prescribing omission drugs by the START criteria. The attending clinicians have succeeded in changing inappropriate prescriptions, stopping 64 of the 84 inappropriate prescriptions and starting of 11 and 26 omission medications, this represents a 68.18% acceptance. Proton pump inhibitors (66.67%), long-acting benzodiazepines (8.33%) and furosemide in patients without heart failure (8.33%) were the three inappropriate medication groups most prescribed. The risk factors most often found associated with inappropriate prescribing were higher for patients with a moderate Barthel between 40–60 ($P < 0.05$), and mild cognitive impairment GDS between 1–3 ($P = 0.03$) and FAST between 1–3 ($P = 0.022$).
Conclusions.– The study demonstrates the high prevalence of inappropriate prescriptions in elderly patients. The criteria STOPP/START detected more inappropriate prescriptions than the Beers criteria because incorporate the concept of prescribing omission. It is remarkable the misuse of proton pump inhibitors in elderly patients.

PC-063

Morning report–An innovative way to train foundation trainees in leadership and patient safety initiatives during geriatric medicine placement in an acute rehabilitation unit

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Introduction.– Foundation training in UK is a two-year training programme where newly qualified trainee doctors are trained in both clinical and generic skills enabling them to manage acutely ill patients. Leadership skills and patient safety are an important part of the learning curriculum of trainee doctors. Patient Safety Initiatives (PSI) is in place to ensure safe patient journey in hospital. Morning Report (MR) is an integral part of PSI for better handover between teams and improving patient flows. This allows foundation trainees to enter reflective practice log in their learning e portfolio and use during their appraisal and personal development action plan meeting with their educational supervisors.
Method.– MR is done every morning during weekdays at the start of the day. It comprises a virtual ward round of all patients on the acute rehabilitation ward with full multidisciplinary team (comprising of consultants and registrars, physiotherapists, occupational therapists, social workers and nursing matron) input into patients' management plan. Patients' clinical pathways are updated in real time and foundation trainees have first hand interaction with all members of the team. Decisions regarding end of life care, do not resuscitate decisions and cross referrals to other specialties are also reviewed.
Trainees lead the discussion on their patients, formulate discharge planning, update results and interact with other members of the multiprofessional team enhancing team building. Drug reviews and update on functional improvements in the patients including carer update and social interaction and placements are also carried out.
Results.– Feedback and focus group interviews with Foundation trainees have revealed that trainees find this an educational forum to demonstrate leadership skills, team working and develop communication skills.
Education supervisors find MR useful to assess trainees on clinical knowledge and communication skills and also use this for case

based discussion and evaluating trainees' reflections and learning, particularly patient safety initiatives.
Conclusions.– With the European Working time regulations and shorter training time, MR is a useful alternative to ward rounds for teaching and evaluation of foundation doctors in leadership skills and PSI in geriatric medicine. Trainees found this very useful as part of planning complex discharge planning.

PC-064

Patterns and risk factors for functional changes associated with hospitalization for acute medical problems in older patients

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Objective.– To describe patterns of functional change associated with acute medical hospitalization of elderly patients admitted to a geriatric acute care ward, and study the predictors of poor in-hospital recovery.
Subjects and methods.– Prospective observational study of 379 consecutive patients aged 70 and older, admitted to the acute geriatric ward, discharged alive, and not fully dependent in all basic activities of daily living (ADL) and ambulation at baseline. Care in the acute geriatric ward is directed to prevent delirium and functional decline. ADL and ambulation were measured at baseline (2 weeks before admission), at admission, and discharge, and used to calculate rates of pre-hospital decline, in-hospital decline, and in-hospital recovery to pre-admission function. Potential predictors of poor in-hospital recovery to pre-admission function were investigated using logistic regression analysis.
Results.– Population characteristics included age 87years (range 69–102); 58% women; Charlson index 2.69 ± 2.0; 30% dementia; 44% heart failure; Apache-II score 13.22 ± 4.6. Delirium occurred in 38%. Length of stay was 8.8 ± 6.6 days. Patients who needed assistance with at least one ADL and ambulation were 63% and 40% respectively at baseline, 91% and 81% respectively at admission, and 84% and 71% respectively at discharge. Pre-hospital decline in ADL and ambulation occurred in 75% and 66% respectively and in-hospital decline occurred in 15% and 12% respectively. In those patients with pre-hospital decline, in-hospital recovery to pre-admission level in ADL and ambulation did not occurred in 79% and 70% respectively. In multivariate analysis, the significant predictors of poor in-hospital recovery for ADL were female gender, history of stroke, and the extent of pre-hospital ADL, and for ambulation were the female gender, Apache-II score and the extent of pre-hospital ambulation decline (all $P < 0.05$).
Conclusion.– In older patients hospitalized for acute medical problems, functional decline occurred most commonly before admission with a low rate of in-hospital decline. Interventions should target functional recovery in those patients with pre-hospital decline.

PC-065

Wound care incorporated in the home visiting program

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One of the most important complications of immobility or restricted mobility is the development of skin ulcers. Each year million of Americans suffer from chronic skin wounds that can become infected and lead to serious complications. Wound healing can become a complex medical problem that requires ongoing, specialized treatment and care. It is usually a problem to provide appropriate treatment for homebound patients with complicated wounds because they need to be regularly evaluated by a physician and each visit to a local wound care is uncomfortable and costly.
The Home Visiting Program at the Bridgeport Hospital Center for Geriatrics exists for 10 years. A new division of the home care was incorporated into the program in June 2010. The specific goal of this service was to have a geriatrician certified in wound care to visit patients with complicated wounds or with unclear differential diagnosis. From June 2010 till April 2011, 77 patients were seen at their homes.
Whenever needed, treatment including bedside wound debridement was provided. The recommendations for care were given to a visiting nurse and further follow up was provided either based on the photos or repeated visits in the most complicated cases. Ninety-three percent of patients showed improvement of the skin condition and there were no cases with deterioration.
All providers of geriatric home care practice received in-service training with lectures and slide show presentations in wound care diagnosis and treatment. Complicated cases were discussed during interdisciplinary meetings weekly. Our experience shows that this new approach enables better quality of home care for the patients with wounds and is definitely more cost effective than scheduled visits to a local wound healing center.

PC-066

Causes of hospitalizations of nursing home residents

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Objectives.– Describe demographic characteristics, physical and mental function, comorbidity and admission diagnosis of patients institutionalized admitted to an acute geriatric unit. Also analyzes hospital tests carried out, palliative or active treatment and mortality.
Material.– Reviewed the medical records of institutionalized patients admitted in 2010. Mean age was recorded, functional status (Barthel index), diagnosis of dementia (DSM-IV criteria), polypharmacy (taking more than or equal to 5 drugs), and Charlson index adapted for age. We analyzed causes of admission, diagnostic tests performed, treatment applied and mortality.
Results.– The institutionalized population in the area is 1112. Seven hundred and twenty-eight were transferred to emergency in 2010. Among, 49.87% were admitted: in geriatrics (33%). Six hundred and twelve patients were admitted in acute geriatric unit in 2010, with 150 institutionalized (24.52%). Seventeen were admitted twice. Sixty-two percent (93) were female, mean age was 87 ± 5.8, 67.33% (101) had severe dependence (Barthel < 30), 22.66% (34) were independent wandering, 70.6% (106) had dementia, 89.33% (134) had polypharmacy, 81.33% (122) had a Charlson index ≥ 4. The causes of hospitalizations were infectious diseases in 51.33% (77) of cases), heart failure in 16% (24), stroke 4.66% (7), electrolyte disturbances 4% (6), and a 24.66% (37) miscellaneous. Diagnosis tests for hospital use were performed at 29.33% (44). These tests were 21 cranial CT (14 in the emergency), 5 thoracic CT (3 in the emergency), 4 abdominal CT (3 in the emergency room). Six abdominal and 2 lower limb ultrasounds, 2 echocardiograms and 7 endoscopies (4 gastroscopies, 2 colonoscopies and 1 bronchoscopy). In 97.33% (146) was active treatment including antibiotic in 51.33% of the cases, only 2% (3) were used inotropes and in 2% (3) transfusion packed red blood cells. The average stay was 6.6 ± 5.28. Mortality was 13% (20).
Conclusions.– (1) institutionalized patients admitted in an acute geriatric unit are mostly women, very old with established functional impairment, dementia, high comorbidity and polypharmacy. (2) The main cause of hospitalization is respiratory and urinary infectious disease. (3) Only one third require testing for

hospital use, most of which were conducted in emergency. (4) The most frequent treatment applied were antibiotics.

PC-067

Factors related with readmission of nonagenarian patients

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Objective.– To establish factors related with readmission to an acute geriatric unit (AGU) of nonagenarian patients.
Methods.– Retrospective study of nonagenarians who were discharged from an AGU in a thirty months period. Readmission in the first month after discharge and readmission within three months after discharge was registered. Relationship between readmission and age, gender, number of previous admissions, comorbidity (pathologic history, Charlson index), nutritional status (albumin, cholesterol), functional status before admission, (Barthel index, Lawton index), functional status at admission and at discharge (Barthel index), functional decline at admission and discharge, cognitive status (Pfeiffer test), previous geriatric syndromes, geriatric syndromes during the admission, and social status (Gijon scale and caregiver) was studied.
Results.– Three hundred and twelve patients were finally evaluated (79.5% women), mean age 92.65 $\pm$ 2.36. Readmission rate was 14.1% in the first month and 24.04% within the three months after discharge. Factors related to readmission in the first month after discharge were: number of admissions in the last year (positive relationship, p0.05) and history of congestive heart failure (CHF) (23.8% vs 10.9%, p0.004). Factors related to readmission within the three months after discharge were number of admissions in the last year (positive relationship, p0.001), history of CHF (33.3% vs 20.9%, p0.02) and history of chronic renal failure (42.3% vs 22.4%, p0.02).
Conclusions.– History of CHF, chronic renal failure and the number of admissions in the last year are predictor factors of readmission. Functional, cognitive, nutritional and social status are not related to readmissions to a AGU.

PC-068

Mortality predictives factors in an acutely ill nonagenarian

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Objectives.– To determine mortality predictive factors of nonagenarians admitted to an AGU.
Methods.– Retrospective study of the nonagenarian patients admitted to an AGU in a thirty months period. Relationship between mortality and age, gender, number of previous admissions, comorbidity (pathologic history, Charlson index), renal function (urea, creatinine), nutritional status (albumin, cholesterol), functional status before admission (Barthel index, Lawton index), functional status at admission (Barthel index), functional decline at admission, cognitive status (Pfeiffer test) and geriatric syndromes previous to admission and admission is determined.
Results.– Four hundred patients were finally evaluated (77.2% women), mean age 92.74 $\pm$ 2.43. Eighty-eight patients died (22%). Bivariate analysis showed that mortality is related to male gender (29.7% vs 19.7%, $P = 0.04$), Charlson index (positive relationship, $P = 0.07$), history of chronic renal failure (36.6% vs 20.3%, $P = 0.01$), urea (positive relationship $P < 0.0001$), creatinine (positive relationship, $P = 0.01$), albumin (negative relationship, $P = 0.04$), cholesterol (negative relationship, $P = 0.004$) at the admission, Barhel index before admission (negative relationship, $P = 0.0006$), Barthel index at admission (negative relationship $P < 0.0001$), functional decline at admission (positive relationship, $P = 0.0009$), Lawton index (negative relationship, $P = 0.01$), Pfeifer test (positive relationship, $P = 0.0008$), immobility before admission (31.2% vs 19.2%, $P = 0.03$), the development of delirium during admission (28.7% vs 18.6%, $P = 0.03$). Multivariate analysis showed that male gender, urea, Barthel index at admission and the development of delirium were independent mortality risk factors.
Conclusions.– (1) Renal function decline at admission, poor nutritional, functional and cognitive status, the existence of immobility and the development of delirium in the nonagenarian patients admitted to an AGU, determine their mortality during the hospitalization. (2) Chronic pulmonary disease, diabetes mellitus, heart disease, cerebrovascular disease and dementia are not predictive factors of mortality. (3) The existence of mortality predictive indexes for nonagenarian patients may be useful in therapeutic decision-making.

PC-069

Multimorbility and geriatric syndromes in the residential environment

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Objectives.– To describe the morbility and prevalence of geriatric syndromes found in an elderly population in a residential environment.
Patients and methods.– A retrospective study of elderly patients admitted to our centers. Patients were selected consecutively and in alphabetical order according to the medical records from 2010. Using previously designed protocol in Base File Maker 5.0 and analyzing them.
Results.– We have reviewed the medical records of 313 patients. The average age is 82 years. Eighty-nine of the 313 patients are male (28.43%) and 224 are female (71.56%). The most important comorbidities (2.42 average): 65.5% hypertension (HT), 18% cardiac disease, 10.2% COPD, 28.7% diabetes mellitus (DM), 16.6% dyslipidemia, 10.2% atrial fibrillation (FA), 15.6% hip fracture, 21.7% stroke, 9% neoplasia, 53.7% articular pathology. Dementia was present in 209 patients (66.7%), being Alzheimer's disease the most frequent with 52.6%, followed by vascular and mixed disease. Stages of dementia: 21.9% mild, 17.25% moderate, 61.2% advanced. The most common geriatric syndromes in our series were (4.35 average): 80% urinary incontinence, 44.7% fecal incontinence, 25.5% depression, 48.5% insomnia, 19.8% constipation, 51% immobility-functional impairment, 69% polypharmacy (+5 drugs), 4.47% dehydration, 21% malnutrition, 26.1% risk of pressure ulcer.
Conclusions.– (1) There is a strong association between the number of diseases and the development of geriatric syndromes. (2) The higher the degree of cognitive impairment, the more the geriatric syndromes. (3) Dementia and vascular disease are the most common diseases in our series. (4) The prevalence found (comorbidity and geriatric syndromes) in our series approach largely to the ones described in scientific literature.

PC-070

Study of variables associated with functional recovery in an orthogeriatric unit: functional gain and efficiency

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Objective.– To analyze the conditioning factors, functional results and complications of patients admitted to an orthogeriatric unit for rehabilitation therapy.
Patients and methods.– We analyzed the outcomes of patients admitted to the Orthogeriatric Unit of Geriatric and Palliative Care Service for rehabilitation therapy from January 2009 to November

2010. The variables collected were: sex, age, admitting diagnosis, Charlson index, modified Barthel index, geriatric syndromes and medical and surgical complications. Outcomes evaluated were length of stay, functional gain, efficacy (Montebello Rehabilitation Factor Score) and efficiency of rehabilitation.

Results.– A total of 154 patients (age 78.3 ± 8.5 years, 77.7% female) were included. The main diagnoses at admission were: femur fracture 55.2% and knee replacement 14.3%. Evaluation at admission showed: Charlson index; absent 57.8%, low 23.1%, high 25.4%: Barthel index; prior 87.20 ± 15.3, admission 51.4 ± 81.1, discharge 18.0 ± 20.8. The most frequent geriatric syndromes were gait disorder (71.4%), polypharmacy (56.5%) and sensory disturbances (45.5%). A total of 81.2% of patients had complications (2.0 ± 1.7 complications per patient). Evaluation at discharge showed: functional gain 29.7 ± 14.1; hospital stay (days) 49.4 ± 16.5; efficiency of rehabilitation 0.6 ± 0.4, efficacy (Montebello score) 1.0 ± 0 7: 84% of patients regained the ability to walk (Functional Ambulation Category ≥ 3).

We found statistically significant associations between the prior Barthel index and complications and between comorbidity and complications. Geriatric syndromes were significantly associated with complications and hospital stay.

Conclusions.– Complications during admission were related to the Barthel index before admission, comorbidity, and geriatric syndromes. Contrary to expectations, patients with less comorbidity (Charlson index = 2) had more complications.

Our results showed high efficacy and efficiency of rehabilitation and a functional gain of around 30%.

The fact that only 20% of patients had no complications during the hospital stay highlights the importance of continuing to work to improve the efficiency of our interventions.

PC-071

The real degree in terminal patients and special knowledge about the diagnosis of medical profile who are living in nurse home

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Objective.– To define the medical profile about palliative care patients who are living in old people's home.

To be sure the knowledge about illness and the wishes about the information about palliative care and consequences is low.

To count the list of dispensable medicines we are prescribed in wrong way.

Material and method.– A descriptive, one sense, longitudinal cohort study.

The criterion for being included was to have or have had at least 75 years old, with palliative care and being admitted previously in hospital.

We were looking for old patients with special features. We used information in the History clinic patient (performed in the first 72 hours of admission). Collection of data: patient's pathology, tumor characteristics, sociodemographic data, toxic, PPS functional.

Results.– Ninety patients were monitored > 11 months period, 2 homes in the area are older.

Age: 77.37 ± 8.9. Patients are admitted from palliative care to hospices and the different services in hospitals. The main diagnosis was: prostate tumor, gastrointestinal tumor (colon carcinoma). If you ask about non-oncologycal diseases: EPOC, heart failure, liver disease. Sixty-two percent of patients had not previously entered. Degree of knowledge diagnosis on admission (< 45%). Morphine was the drug most commonly used followed by haloperidol, corticosteroids and buscopan. PPS 40 ± 22.4. Dispensable medication, cholesterol lowering agents, broad-spectrum ATB and ACO/antiplatelet. Despite finding literary reference to high rates of constipation in hospice patients, in our series encompassed the use of laxatives factors of hospital readmission, symptom control, family overload and frequent visits to emergency services.

Conclusions.– Typological profile derived to nurse homes: woman with tumor pathology-based and derived from the ER. For now dominates the culture of silence, the patient at admission does not know his diagnosis. Still a high percentage of patients end their days at home due to the comprehensive care they need. After discharge from hospital units, patients maintained dispensable treatments that have been suppressing for comfort and quality of death. Strong opioids and typical neuroleptics, which are essential in alleviating the symptoms. Degree of return to hospital units under, especially those factors are: the need to control symptoms and family to live load stress.

PC-072

End-of-life in the elderly patient in the acute hospital care setting

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Objectives.– To investigate the characteristics of patients over 75 years old who die in an acute hospital care setting over a year (Hospital Universitario Germans Trias i Pujol, in Badalona) and the general management and treatment at end of life. Analysis of vulnerable subgroups: dementia, readmissions, functionally impaired, oldest old.

Methods.– Review of the medical, nursing and pharmacological records of patients over 75 years old who die in hospital from 1/1/2009 to 31/12/2009.

Results.– One hundred and forty-three cases were analyzed. The median age was 83 years old, 56% were female. Eighty percent had at least one chronic disease, 43% had multiorganic disease. Sixty-four percent were admitted for recurrence of their chronic illness. Sixty-fve percent had functional impairment that generated dependency, 30% had cognitive decline. They spent a median 11 days in hospital, and had at least 2 hospital admissions the previous year. In the last 24 hours, 8.4% had nasogastric tube feeding, 52% a permanent urinary catheter, almost 90% had a peripheral venous catheter. Basic laboratory tests were performed in 40% and complex complementary tests in 8.4%. Regarding information, there were no registered cases of advance directives. There was little information regarding levels of care (57%), though the bad prognosis was clear (73%) and families were informed (87.4%). There was hardly a withdrawal of preventive treatment (26%) or active treatment (21.7%). Palliative treatment was initiated in 73.4% of patients, 1.66 days previous to death. End-of-life was detected 2.64 days previous to death. Fragile subgroups with dementia, dependency, readmissions, and older patients (over 85 years old) were analyzed and a difference in characteristics was observed though the general management did not differ from other patients.

Conclusions.– Older patients who die in hospital tend to be frail: functionally impaired with some degree of cognitive decline and one or more chronic diseases. End-of-life and palliative treatment are detected and started late. Most still carry preventive and active treatment. Even though there are fragile subgroups there is no difference in the general management of these patients. A different approach for end-of-life geriatric patients is needed in the acute hospital care.

PC-073

Prognostic factors of mortality detected by comprehensive geriatric assessment in older people transferred from acute hospital to a geriatric rehabilitation unit

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Introduction.– The aim of this study is to evaluate which factors evaluated during the Comprehensive Geriatric Assessment (CGA) performed at acute care by a geriatric team to predict mortality in elderly patients transferred to a Geriatric Rehabilitation Unit (GRU).
Methods.– Prospective study. All acute hospitalized patients evaluated from June to December 2010 and transferred to our GRU were included and followed up until death or discharge. The data collected were: age, sex, main diagnostic groups (orthopedics, stroke, cardiovascular disease, others); functional status previous to acute hospitalization and before transfer to GRU (Barthel index [BI], walking ability). Comorbidity (modified Charlson Index), dementia, delirium in acute care, length of stay in acute and rehabilitation units, laboratory data (Hematocrit, Albumin, Total Proteins, ESR, CRP), polipharmacy and if patient lives alone. Statistical analysis: baseline characteristics of died and survived patients were compared using *t*-test to evaluate differences in means and Chi-square test to evaluate differences in percentages; and multivariate analysis by logistic regression. SPSS v.17 software.
Results.– One hundred and seventy-four patients evaluated; 12.6% died; mean age: 77 years (±17.5); 48.3% male. Length of stay in acute care: 12.3 days (±10.4), length in GRU: 56 days (±51.9). Previous BI mean 78.6 (±22.3); BI in acute care 27.2 (±26.2); dementia: 25.3%, delirium in acute care: 25.9%; polipharmacy: 71.3%, living alone 35.6%. Diagnosis groups: orthopedic 33.5%, stroke 22.9%, others 32.9%. Modified Charlson Index: mean 1.8 (±1.2). Albumin 2.7 mg/dL (±0.5). Three factors were related with mortality in multivariate analysis: delirium, polipharmacy and albumin. These factors predict 25% of mortality ($R^2 = 0.25$). Patients with delirium had more probability to die (14.2% vs 4%), especially in association with hypoalbuminemia. For instance, patients with albumin 2 mg/dL and delirium had a probability to die of 39.7% vs 15% in patients with the same albumin value but without delirium. Patients with orthopaedic diagnosis had lower probability to die (5.2% vs 19.6% with other diagnosis).
Conclusions.– Factors as delirium in acute care, hypoalbuminemia and polipharmacy were related to a high mortality. The poorest prognosis is showed in hypoalbuminemic patients with delirium.

PC-074

Functional trajectories of elderly patients admitted in a geriatric rehabilitation unit after discharge of acute hospitalization

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Introduction.– The aim of this study is to analyze which factors evaluated during the Comprehensive Geriatric Assessment (CGA) performed at acute care by a geriatric team, predict functional trajectories in elderly patients transferred to a Geriatric Rehabilitation Unit (GRU).
Methods.– Prospective study. All acute hospitalized patients evaluated from June to December 2010 and transferred to our GRU were included and followed up till discharge. Collected data: age, sex, diagnostic groups (orthopedics, stroke, others); functional status – activities of daily living (ADLs) previous to acute hospitalization, in acute care and at discharge (Barthel index [BI]). Comorbidity (modified Charlson Index), dementia, delirium in acute care, length of stay in acute and rehabilitation units, laboratory data, polipharmacy and if patient lives alone. Statistical analysis: characteristics of ability in ADLs' patients groups were compared using *t*-test to evaluate differences in means and Chi-square test to evaluate differences in percentages; and multivariate analysis by logistic regression. SPSS v.17 software.
Results.– One hundred and seventy-four patients evaluated; 12.6% died; mean age: 77 years (±17.5); 48.3% male. Length of stay in acute care: 12.3 days (±10.4), length in GRU: 56 days (±51.9). Previous BI mean 78.6 (±22.3); BI in acute care mean 27.2 (±26.2); BI at discharge 49.2 (±36.3). Independent ability to walk: previous: 70.7%, in acute care: 3.4%, at discharge: 37.9%. Patients with dementia: 25.3%, delirium: 25.9%; polipharmacy: 71.3%, living alone 35.6%. Diagnosis groups: orthopedic 33.5%, stroke 22.9%, cardiovascular and others 32.9%. Modified Charlson Index: mean 1.8 (±1.2). In multivariate analysis, factors related to walk independent were absence of dementia and shorter lengths of stay in GRU. Dementia, cardiopathy and longer length of stay in acute care were associated with poorer functional prognosis. The functional decline in acute care should explain 15% of functional trajectory (Pearson coeff. correlation 0.38).
Conclusions.– The probability to walk independent was lower in demented patients with longer length of stay in the GRU. The best ability in ADLs was achieved in patients with shorter length of stay in acute care, with orthopedic diagnosis on admission and no comorbidity as dementia, delirium and heart disease.

PC-075

Activities of the San Jose Hospital's physiotherapy unit (Teruel) over 2010

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Objective.– Analysis of the activities and typology of patients admitted to San José Hospital's Physiotherapy Unit over 2010.
Method.– A retrospective, descriptive study of patients admitted to San José Hospital for rehabilitation from January to December of 2010.
Analysis of: the number of patients, their age, sex, referral source, the disorder responsible for hospital admittance, total number of sessions, number of sessions to patient and functional discharge gain.
Results.– Three hundred and ninety-eight patients were admitted. The average age was 80 years old, with a 65% prevalence of women. Referral source: 55% from the Convalescence Unit, 39% from the Day Hospital and 6% rehabilitation outpatients. With a total of 6834, the average number of sessions per month was 569.5 (ranging between 664 in October and 455 in July) and an average number of sessions per patient of 13.86.
The main disorders were orthopaedic (234) and neurologic (82). Orthopaedic causes: 116 hip fractures, 52 knee prostheses, 21 shoulder disorders, 6 amputations, 4 ankle disorders, 23 spinal disorders, 3 Colles fractures, 9 polyarthrosis. Among the neurologic causes: 56 ACV, 9 Parkinson's Disease, 2 ELA, 2 myelopathy, 2 ataxy, 1 encephalitis, 3 peripheral nerve disease and 7 of instability.

Other important causes were immobility syndrome after acute lesion (67) and respiratory diseases (7).
The functional gain was > 20 in the Barthel index in 92% of patients.
Conclusion.–The main causes of rehabilitation in our unit are hip fractures, immobility syndrome after acute lesion and ACV. In spite of the patients' old age, we see very good results from the functional gain in these patients with an average of 13 sessions each.

PC-076

Relaxation and corporal control to improve the physical and psychological state of the patient in a geriatric day hospital

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Introduction.– Relaxation techniques, visualisation and corporal control positively influence our health and feeling of well-being. The application of these techniques could improve the overall physical and mental state of patients with disabilities.
Objective.– To improve awareness of the illness and the control of it, reduce stress relating to disability, promote positive attitudes and improve quality of life.
Method.– Application of a relaxation and corporal control program to Day Hospital patients which are likely to positively respond to the treatment. Analysis of functional status, cognitive disorder, number of sessions, technique and physical effects seen during relaxation. Application of an anxiety and depression scale and quality of life at the beginning and end of the programme.
Results.– The programme was applied to 15 patients, with a 73% prevalence of women. The average age was 71 years old. The MEC average was 29/35 and the Barthel 70/100. At the start, the majority (70%) saw the relaxation as a useful technique, while 30% stayed neutral. Forty percent showed reactive dysthymia and 20% symptoms of anxiety. Sixty percent were receiving some psychotropic treatment. The modal average on the Philadelphia quality of life scale was < 5 in 80% and on the HAD anxiety and depression scale > 11 in 70%. Group techniques were used in 60%. The average number of sessions was 5 per patient. The sessions lasted 30 minutes. At the end of the relaxation sessions all the patients showed a decreased pulse rate (between 3 and 14 pulses) and no change in blood pressure figures nor in saturation of O_2. Upon discharge, an improvement was noted in the Philadelphia and HAD scales in 80% of the patients, with a very good subjective assessment of the programme.
Conclusions.– Elderly patients are capable of learning and practicing relaxation and visualisation programmes, with an improved state of mind and personal well-being.

PC-077

Home hospitalization unit: A cohort of 68 nonagenarian patients

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Objectives.– Population of nonagenarians is growing each year in Spain and other european countries. Hospitalization of this kind of patients, with pluripathology, risk of various adverse outcomes (functional decline, delirium, falls...), long stays and high risk of readmission, means a problem for the patient and the sanitary system. For this reason, in the year 2008, we created a home hospitalization unit (HHU).
Methods.– This is a descriptive and retrospective study. The setting of the study was the emergency department (ED), the geriatric day hospital (GDH) and the hospitalized patients (HP) of a 450-bed universitary hospital (Fundació Althaia). Participants included were all the nonagenarians accepted at the HHU from January 2008 to March 2011. Variables were age, sex, comorbidity (index of Charlson), functional evaluation (Barthel index), cognitive status (Pfeiffer), diagnostic, mean length of stay and readmission rate.
Results.– A cohort of 68 nonagenarian patients was accepted. Mean age: 93.47 years (60.29%, females). Index of Charlson: 1.92. Barthel index: > 60 (mild dependence) 60.29%, 41–60 (moderate dependence) 17.64%, < 41 (severe dependence) 20.05%. Pfeiffer test: 0–2 errors (normal) 47.05%, 3–4 errors (mild dementia) 23.52%, > 4 errors (moderate or severe dementia) 29.41%. Procedence: ED (10 patients), GDH (10 patients), HP (48 patients). The most common diagnoses were acute exacerbation of chronic heart failure (20 patients), acute exacerbation of COPD and acute bronchitis (11 patients), pneumonia (12 patients) and urinary tract infection (10 patients). Mean length of stay: 8.55 days. Hospital readmission rate: during the HHU (3 patients), before 30 days after being discharged (7 patients, 10.29%). Exitus letalis: 4 patients (5.88%).
Conclusions.– The HHU can be an alternative to standard hospitalization in nonagenarian patients, who have complex medical, functional and cognitive problems. The most common diagnoses in our cohort were cardiac and respiratory exacerbations. Despite the comorbidity and dependence, a good integrate care allows maintenance of patients in their usual enviroment, which affects a low incidence of both hospital readmissions during and after discharge.

PC-078

The Institute for Evidence-Based Medicine in Old Age (IEMO)

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Evidence-based medicine (EBM) in the hallmark of modern medicine. Randomized Controlled Trials (RCTs) are considered the highest level of evidence for clinical practice. However, elderly are systematically excluded from many of these trials and exclusion criteria in trials that do include elderly often select out comorbid conditions that are common in old age. Therefore, it is doubtful whether included elderly represent the general population and EBM in old age is lacking.
In The Netherlands, University Medical Centers together with other players in healthcare (such as health insurers and industry) have recently (2011) initiated the Institute for Evidence-Based Medicine in Old Age (IEMO). The institute aims to increase EBM in old age, both intramural and extramural care and cure, thereby contributing to higher quality of life of older people. IEMO tries to reach its goal in three ways. First by serving as a reference provider for other health care professionals. Knowledge is abstracted from current trials and from observational studies. Second, where necessary, IEMO initiates new trials to establish clear treatment strategies. These trials are multicenter throughout The Netherlands. Results are implemented in clinical guidelines. Third, the Institute develops innovative tools to enable large-scale trials in old age. These tools include use of Internet, digital communication, home-based monitoring and alternative study designs.
The IEMO is looking for collaborative partners throughout Europe to enhance EBM in old age and increase quality of life of elderly accross Europe.

PC-079

Evaluation of physical restraints used in a psychogeriatrics unit

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Introduction.– The physical restraints are considered necessary to ensure the safety of the elderly (that is to avoid falls, handling of medical equipment, agitation control, etc.). Numerous studies have shown to have negative effects on patients' health: prolonged immobility, pressure ulcers, and even, mechanical suffocation if the patient is caught by the device.
Objectives.– To describe the type of constraints used and the reason for its use. To analyze whether the use of physical restraints is useful to prevent falls. To determine if nursing staff education about the risk of these devices would help to reduce their use.
Material and methods.– Nearly experimental prospective study before–after trial, including patients diagnosed with dementia during a study period of 6 months. Training sessions were developed to support staff on the management of patients with dementia and behavioral impact of the use of physical restraints (2 weekly sessions 30 minutes each). Before the sessions, we administered a questionnaire to assess health staff attitudes in the use of physical restraints: Perception of Restraint Use Questionnaire (PRUQ), which was administered again after the intervention. The SPSS 15.0 was used for the statistical analysis.
Results.– $n = 18$. The more commonly types of constraints used: 44.4% nocturnal abdominal belts and harnesses (in sitting) in 11.1%. In 38.9% of cases they were used with intent to ''prevent falls'', and in 11.1% to try to ''control agitation''. The prevalence of falls during the study was 55.6%. No correlation was found between the use of physical restraints and the number of falls. At baseline 56% of patients had physical restraints, after the intervention they were applied only to 22%, decrease that is statistically significant (95% CI 0.92–0.57, $P < 0.05$). However, there were no significant differences between the results of PRUQ at the beginning and at the end of the study.
Conclusions.– Education to health staff on behavioral management helps to reduce the use of physical restraints. The physical constraints are not useful to prevent falls.

PC-080

End-of-life care preferences in the geriatric patient: Does setting or disease matter?

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Introduction.– Elderly patients are not frequently involved in discussions concerning planning their end-of-life care [Advance Care Planning (ACP)]. This study aims to get a better insight into elderly patients' views on planning for the end-of-life, focusing on the possible differences among illness trajectories and living arrangements.
Method.– We conducted and analyzed 38 semi-structured interviews with geriatric patients living in different settings (home, nursing home, hospital) and going through different illness trajectories (cancer, non-cancer).
Results.– Planning for the end-of-life requires accepting one's death as a possible situation. Acceptance seems to be more common among nursing home residents and hospitalized patients. A minority, mostly home-dwelling elderly, could not accept their nearing death. Some patients shifted between acceptance and non-acceptance. This group was almost exclusively found in the non-cancer patients, as if having cancer provokes more extreme responses compared to other diseases.
About half of the interviewees had proceeded to ACP, however less frequently in home-dwelling elderly, irrespective of their illness. Factors facilitating ACP were (1) wanting to be in control, (2) having little faith in family or healthcare providers and (3) having bad experiences with death and dying. Cancer patients clearly showed a greater need for control leading them to plan their end-of-life care. However, other cancer patients who did not engage in ACP, mostly did so because of good experiences with dying. Having little faith in family or healthcare providers was a reason to plan their end-of-life care only for nursing home residents.
Conclusion.– In the face of death, definitely not all elderly are equal in their views on planning their end-of-life care. Living arrangements and diagnosis influence the acceptance of one's nearing death and the factors causing them to proceed to ACP or not. In order to improve ACP in the elderly population, it's crucial to develop an approach more fitting to different profiles within the group of the elderly, without losing track of the individual differences.

PC-081

Risk of institutionalization and efficacy and efficiency of a rehabilitation program in nonagenarian patients

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Aim.– To assess the risk of institutionalization of nonagenarian patients, according to efficacy and efficiency of a rehabilitation program in an intermediate care unit.
Patients and methods.– One hundred and twenty-eight patients have been studied (100 [78.1%] women) with a mean age of 92.2 ± 2.2. Barthel index before admission (BBA), at admission (BA) and at discharge (BD), and length of hospital stay (days) were registered. Efficacy of the rehabilitation program was evaluated by means of the functional improvement (FI) (BD-BA), and the corrected Heinemann index (CHI), which express in percentage the amount of the FI, respect to the previous functional decline ($[BD - BA]/[BBA - BA] \times 100$). Efficiency index (EI) was used to analyze the relationship between FI and the length of stay ($[BD - BA]$/days). According to other authors, FI > 20 points; CHI > 35% and EI > 0.5 have been considered adequate results of the rehabilitation process. Patients were divided in two groups according to post-discharge destination: institution (long-term care unit or residential home) versus at home.
Results.– From 128 patients registered, 24 were excluded (3 were previously living in a residential home, 8 were transferred to acute care hospital, 11 died during unit-stay and 2 were transferred to another intermediate care unit). Of the 104 remaining patients, 31 (29.8%) were discharged to an institution and 73 (70.2%) returned at home. Mean of evaluated parameters in patients with institution post-discharge destination versus patients who returned at home were: functional improvement 21.8 ± 16.8 versus 36.2 ± 20.5 ($P = 0.001$); corrected Heinemann index: 37.9 ± 28.2 versus 68.4 ± 40.6 ($P < 0.001$); efficiency index: 0.3 ± 0.3 versus 0.7 ± 0.6 ($P < 0.001$).
Conclusions.– 1. Nonagenarian patients with home post-discharge destination had better parameters of efficacy and efficiency of a rehabilitation program than those who were discharged to an institution. 2. Adequate mean score values of efficacy of rehabilita-

tion process was present in both patient groups, but efficiency was lower in the group with institution post-discharge destination. 3. A good functional improvement after a rehabilitation program is a predisposing factor of post-discharge home destination in nonagenarian patients in an intermediate care unit.

PC-082

From town hospital to geriatric department: Evolution of hospital San José in Teruel

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Background.– The ageing of the population has favored the development of an assistance network for the care of the chronic and dependent patient. Most of the hospitals previously managed by provincial authorities have been integrated into the public health system as part of that network.
Objective.– To describe the changes of a provincial hospital since the transference of health management to regional authorities and analysis of how it works now.
Material and methods.– Retrospective descriptive study of the activity of the different levels of care that form the Geriatric Department of the Hospital San José from January 2004 to December 2010.
Results.– In 2003 the first geriatrician was hired. Most of the patients were discharged to a nursing home. In the next few years three more geriatricians were hired, and several new facilities were implemented (Day Hospital, Office, Comprehensive Geriatric Assessment [CGA] Team and Rehabilitation). From 2008 on, the hospitalization ward was distributed among acute, subacute, rehabilitation and palliative care units. In the hospitalization units there was a 22% increase of admissions/year with a decrease of 30.5% in the admission length. Activity increases were: 57.67% at Day Hospital, 46% at Physiotherapy and 75.5% at Occupational Therapy. CGA Team increased its assessments by 80.7% and the Geriatrics Office by 86%. Nowadays the Home Care Unit treats 120 new patients/year (1146 home visits/year).
Conclusions.– (1) Throughout the last 6 years the levels of care characteristic of a Geriatric Unit have been developed in Teruel. (2) We can see an exponential increase in the level of activity of the different units, which has a favorable impact in the care of the geriatric patient and means a better utilization of the health care resources. (3) The hiring of geriatricians and the continuous training of health care professionals have made changes possible.

PC-083

The orthogeriatric unit: Improving the care of the elderly admitted to the orthopedic department

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Background.– Usually, the care of the patient admitted to the Orthopedic Department focuses exclusively on the surgical problem, leaving aside the comorbidity and social, psychological and functional factors. In case of old patients, it triggers the increase of the admission length due to medical complications.
Aim.– To analyze the effects of the development of an Orthogeriatric Unit (OGU) on the admission length, mortality and complications of the patients older than 74 years admitted to the Orthopedic Department of Hospital Obispo Polanco and its impact on the running of the hospital.
Material and methods.– The variables analyzed were: contrast of mortality and average stay data in 2007 and 2010 (OGU started its functioning in October 2008), variation on number of consultations with other medical departments, opinion of Hospital Obispo Polancos's health care workers of the OGU.
Results.– The OGU is formed by a geriatrician and a specialized nurse. Everyday both of them visit all the patients older than 74 years admitted to the Orthopedic ward, and the geriatrician contributes to the medical discharge report. One day a week a group visit (orthopedic surgeon, geriatrician, physiotherapist, nurses) is made at the Orthopedic ward. Patients who need continuation of the rehabilitation process within the hospital are transferred to the Rehabilitation Unit of the Geriatric Department. Orthopedic surgeons visit them weekly, and physiotherapists work daily with them. The implementation of the OGU has achieved its objectives: 24.35% reduction in the admission length, 29% decrease in the mortality rate and more than 50% reduction in the consultations with other medical departments. The opinion of Orthopedic ward health care workers is favorable to the OGU, in spite of greater burden of work. The opinion of internists is also favorable, because of the contrary.
Conclusions.– (1) Cooperation between orthopedic, geriatrics and rehabilitation departments achieves a reduction in the mortality rate, the average stay and the complications of the elderly patients admitted to the Orthopedic ward. (2) OGU represents a model of continuum of care and a better use of the health resources available. (3) This cooperation is well considered by the health care workers at the hospital.

PC-084

Profile of the patients admitted to a geriatric rehabilitation ward

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Background.– The Geriatrics Department of Teruel, which provides care for a population of 84,668, is located in the Hospital San José, administered by the Regional Health Services. It has a hospitalization ward of 48 beds (15 of them for rehabilitation), 15 places Day Hospital, Home Care team, Offices, and Comprehensive Geriatric Assessment and Orthogeriatric Teams.
Objective.– To describe the different profiles of patients being admitted to the rehabilitation unit.
Material and methods.– Retrospective analysis of the Rehabilitation Unit (RHB) activity during 2010.
Results.– One hundred and seventy-five patients were admitted to the RHB (mean age 80.3 years, 64% women), average admission length 26.7 days, functional gain 22 points in the Barthel Index (BI); 56.57% coming from Orthopedics, 18.3% from Internal Medicine, 8.57% from Neurology, 6.85% from other surgery departments and 5.71% coming from acute care geriatric unit. Characteristics: (1) Orthopedic patients: 80.46 years, stay 24 days, BI at discharge 62/100, discharges to home 81%, death rate 5%. (2) Internal Medicine patients: 82.4 years, stay 28 days, BI at discharge 41/100, 59.37 discharges to home, death rate 15.6%. (3) Neurology: 74 years, stay 40 days, BI at discharge 35/100, discharges to nursing home 53%. (4) Geriatric acute care: 87 years, stay 25 days, BI at discharge 62/100, discharges to home 90%, death rate 0%.
Conclusions.– (1) Patients admitted to RHB are usually women older than 80 years with hip fracture who are discharged to home on 24th day in good functional status (BI $>$ 60/100). (2) Patients from Neurology usually are younger, stay longer and are discharged to a nursing home in a worse functional condition (BI 35/100). (3) It is necessary to work on the transfer criteria and

the admission criteria to the several levels of care in the Geriatrics Department to improve the placement of the patients, especially internal medicine ones (palliative care unit could give a better level of care in some cases).

PC-085

Exitus in a subacute care geriatric unit

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Introduction.– Subacute Care Geriatric Unit (SCGU) is a new postacute care assistance level in Geriatric Units which is aimed to focus on medical care, re-education of walking and activities of daily living recovery in elderly patients who, owing to disability after some medical or surgical process, would benefit from short follow-up and rehabilitation. Coming back home is one aim, but some of them die in our unit.
Objective.– To evaluate characteristics and analize factors of exitus in elderly in-patients admitted to our Subacute Care Geriatric Unit.
Material and methods.– Retrospective study of a cohort of in-patients in a SCGU during 2008 to 2010. Bivariate analysis of demography, comorbidity (measured by Charlson Index), cognitive status (measured by Pfeiffer Test), functional status prior to acute illness, at admission and at discharge [measured by Barthel Index, categorized in mild (61–100), moderate (31–60) and severe (0–30)], social status (Gijón Index) and diagnosis of admission due to exitus or discharge.
Results.– Two hundred and seventy-nine in-patients were evaluated (42.9% men, mean age 82.5 ED 8.5 years), 19 died (6.8%).
Mortality was conditioned by functional status prior to acute illness (*P*: 0.005); the patients with mild dependence (67% of patients), died in 5.3% and moderate (20%) and severe deceased in 19.4%.
The functional status at admission was also a mortality risk factor (*P*: 0.004): no mild dependence patients (12% of all) died; 3.5% of moderate (30.5%) and 10% of the higth dependents (57.5%).
Cognitive status at admission was a mortality risk factor (*P*: 0.04).
Diagnosis of admission of pheumonia (26.3% of exitus), respiratory lower tract infection (10.5%), heart failure (10.5%) and acute isquemic cardiopathy (10.5%) conditioned mortality, too.
Age, gender, comorbidity and social status do not condition exitus in our Unit.
Conclusions.– The result of our data shows that functional status prior to acute illness, at admission and cognitive situation were exitus risks factors.
A bigger mortality was conditioned by acute cardiorrespiratory process.

PC-086

Use of physical restraints in a long-term geriatric nursing home in Tres Cantos, madrid, Spain

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Aim.– To study the prevalence of physical restraints in an elderly long-term geriatric population at a nursery home.
Material and methods.– Observational and cross-study including a total sample of 178 residents (25% male, 75% female), all of them nursing home inpatients during the year 2010.
One hundred and forty-three physical restraint episodes were accounted in which 192 restraint devices were used. Data on the type and number of devices, causes of restraint devices, functional dependence level according to Modifyed Barthel Index (IBM) and severity of cognitive impairment according to Red Cross Mental (CRM) were collected.
Results.– Use of physical restraints prevalence was 27.5% (49 users needed at least one type of restraint device). Including bedrails, restraints prevalence increases up to 55% (98 users); in 106 (55.2%) occasions bedrails were used; in 34 (17.7%) sheet restraint; in 27 (14.1%) day vest; in 11 (5.7%) pelvic belt; in 8 (4.2%), wandering control (clock); in 2 (1%) restraint net; in 2 (1%) geriatric table; in 1 (5%) wrist restraint and 1 (5%) mittens.
The causes of the 143 episodes were divided into; instability 52 (36.4%) cases, slip and fall risk 46 (32.2%), delirium 29 (20.3%), wandering and flight 9 (6, 3%), a tendency to fugue 4 (2.8%) and control probes/catheters/cures 3 (2.1%).
According to IBM only 47 (27.2%) of our elderly people are functionally independent and 34 (20.6%) cognitively normal according to CRM.
Conclusions.– The results allow us an approximation to the current use of physical restraints in this Centre. The prevalence is high compared to that obtained in other studies. The bedrails are the most used restraint. Greater cognitive and functional impairment of the elderly may be associated with an increased prescription of these devices. To adapt its use we have designed a protocol that we are systematically applying.

PC-087

Improving physical activity among seniors with intellectual disabilities: Development of a feasible programme

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Introduction.– Most elderly people with intellectual disabilities (ID) have a sedentary life style. To increase regular physical activity in seniors older than 45 years with mild or moderate ID, a specific day-care programme was developed. Its feasibility was studied.
Method.– The day-care programme was developed following the six steps of Intervention Mapping: (1) explore programme needs, (2) formulate objectives, (3) elect strategies, (4) develop programme, (5) implement programme and (6) evaluate programme. For the first three steps we conducted a literature study, performed interviews and focus groups with seniors with ID and consulted movement and education experts.
Results.– The programme consists of two components:
– an educational programme, aiming at improving the participants' consciousness of the relationship of physical activity, bodily reactions and health;
– an evidence-based physical activity programme, aiming at maintenance or improvement of endurance, balance, strength and flexibility. Appropriate activities were e.g. game like activities, aerobic, walking and exercises with weights.
Besides education, important programme's strategies are:
– *tailoring*: tailoring to each participant's knowledge and fitness level is possible in both programmes;
– *skill building*: both programmes started with simple activities, that subsequently were increased step by step in complexity, duration and intensity;
– *modelling*: activities were provided in groups of 8 to 10 participants. Besides, staff members served as important role models;
– *feedback*: mostly oral feedback, but also stickers, medals and a personal education folder were used to keep participants motivated.

The intervention study started with 81 participants. Fifteen participants dropped out, mostly caused by behavioural (6) or health-related (4) reasons. The remaining 66 participated 2 (39%) or 3 (61%) times a week in the programme. It was feasible according to the day-care centres' staff and movement experts who conducted the programme, regarding clients' motivation, organization, preparation time and execution, including cooperation with colleagues and needed materials.
Conclusion.– The intervention mapping method is a useful method for developing a health promotion programme to improve healthy lifestyles. The day care programme we developed was well applicable for seniors with ID. Drop out was mostly caused by factors not related to the programme's content.

PC-088

Nonagenarian patients admitted in Spanish internal medicine hospital's departments

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Objective.– To describe the demographic and clinical profile of nonagenarian patients admitted to internal medicine departments in Spanish hospitals, and to compares with younger patients.
Methods.– We identified through the CMBD (Basic Minimum Data Set) every patient admitted to the Internal Medicine Departments of hospitals in the Spanish public National Health Service between 2005–2008 older than 89 years. Hospital discharge data were obtained from the CMBD. For every patient, a diagnosis-related group (DRG) was identified. The DRG 21.0 version was used. All centres submit this information to the Spanish Health Ministry. In order to determine comorbidity, the Charlson Index (CCI) was used. Statistical analysis: all statistical analyses were performed using SPSS 14.0.
Results.– Sample includes 131,434 patients over 89 years (6% of total patients attended). Two thousand and two hundred and twenty-two patients were over 100 years. 45.3% patients under 90 years were women, against 67.3% of those over 90 years ($P < 0.001$). The top 10 DRGs listed in the older group include 3 new entities not-present in the younger one: pulmonary edema (DRG: 87), severe urinary tract infection (DRG: 320), and severe respiratory tract infection (DRG: 540). The first 5 DRG were: pneumonia/bronchitis (541): 11.9%, heart failure (127): 8.9%, rhythm disorders (544): 7.5%, pulmonary edema (87): 3.8%, and other respiratory diseases (89): 3.24; in any case the rate of these entities were higher than those found in younger patients. Among this top 10 only COPD and angina had a higher rate in the younger group. Rate of hospital deaths were 9.1% among the younger group and 21.8% among the nonagenarians ($P < 0.001$) If we take unto account only the first 48 hours after admission proportions were 2.2 vs 6% ($P < 0.001$). 78.2% of nonagenarian patients come back at home after discharge.
Conclusions.– (1) There are a high number of nonagenarians patients admitted in hospital Internal Medicine Departments. (2) The rate of women increases with age. (3) List of diagnosis varies according with age. (4) Death's hospital rates increase with age, both if we consider the first two days or total stay. (5) The great part of these patients are able to come back at home after discharge.

PC-089

Rehabilitation approach to fractures in nursing home for the elderly

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Aim.– To know the prevalence of osseous fractures in the residents along a 18-month period, as well as detect which factors (intrinsic, extrinsic, physical restrictions, previous falls...) appear most frequently in this cases.
To check if with an early rehabilitation the resident is able to recover a functional situation similar to the one before the fracture.
Method.– From January 2010 to June 2011, among all those patients atended at our nursing home who have suffered any kind of facture, data of the following aspects are taken:
– medical history: incidents, famacologic data, previous falls, restrictors used...
– basal functional status: Barthel, Tinetti and GDS;
– type of fracture;
– treatment;
– rehabilitation;
– functional status after 3 months: Barthel, Tinetti and GDS post-fracture.
Data analysis is carried out using descriptive techniques using SPSS software for Windows.
Results.– Most of the patients show a mild functional and cognitive impairment, but with high risk of falls, without use of physical restraints. The group is mainly aged people with multiple chronic illnesses, polymedicated...
The majority of the fractures are from lower-limb (mainly hip), and are initially treated with surgery, immediately beginning the rehabilitation process.
After a 3-month period most cases show slight worsening from baseline.
Conclusions.– At present many fractures on aged people are directly rehabilitated at nursing home instead of specific rehabilitations centers.
The population of the study can be considered, in many cases, as ''frail elderly'', and therefore the rehabilitation expectancy is low. However, with an adequate medical treatment and with an early rehabilitation, even if they do not recover the basal situation, at least the worsening is slight.

PC-090

Anemia in a geriatric unit: Improving with interdisciplinary work

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The prevalence of anemia and associated adverse effects increases with age, without getting to be well defined and not specifically studied in the frail elderly. Also studies have shown that on elderly population, 30% of the etiology remains unknown. This project will analyze a cohort of subjects aged 65 years or older, representing a Spanish urban population, to estimate the prevalence of anemia, etiology, and follow it in time to analyze the risk factors associated.
Objectives.– 1. Determine the prevalence, etiology, and health outcomes of mild and moderate anemia in our hospital. 2. Assess the interdisciplinary work and improve the inclusion the anemia as a diagnosis on hospital discharge reports.
Material and methods.– Premilinary data taken from minimum set of database and Geriatric service database. A descriptive study based on a population over 65 years hospitalized or outpatients, treated at Geriatric Unit of Nuestra Señora de Gracia Hospital, with blood count and Hb < 13 g/dL for men and < 12 g/dL for women. Inclusion period: 1/5/2011 to 30/4/2012. To clarify the anemia of uncertain cause we have the cooperation of a hematologist. Baseline data: clinical comorbidity, functional status (Barthel Index), reason for visit/admission, etiology and stage of anemia, Charlson index. Diagnosis: WHO criteria, renal function, iron metabolism, B12 and folic acid, C-reactive protein and hematological study if appropriate. Follow-up: every 6 months, controlling functional status, frequency of outpatient visits, Hospital admissions, mortality and institutionalization.

Conclusions.– In Spain, there is a lack of reliable information of anemia in the elderly. We have worked in small series, in particular diseases. Our own data are not related to results from other countries. In our department 15% of patients discharged with Hb below 12 g/dL, without knowledge of sex differences. Only 1.8% of the discharge reports collect anemia as primary or secondary diagnosis. Interdisciplinary work (incorporation of Hematology) will improve the diagnosis of unknown cause anemia.

PC-091

Appropiateness of hospital discharge after a long term care facility. Comparison between patients discharged at home or at nursing homes

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Objective.– To determine appropiateness of hospital discharge after a long-term care facility (LTCF). We analyzed mortality, medical and functional status at 3 and 6 months after discharge.
To assess differences between patients subgroups discharged at home or at nursing homes.
Methods.– Retrospective study. Review of medical records of patients discharged from LTCF during 2009 and 2010. Telephone follow-up of these patients at 3 and 6 months after discharge.
Statistical Analysis with SPSS v15.0 program.
Results.– $n = 293$, mean age 82, 57.3% women. Comorbidity: hypertension 63%, DM 33%, dislypemia 30%, heart disease 42%, cerebrovascular disease 28%, COPD 21%. Geriatric syndromes: dementia 48%, behavior disorders 19%, UPP 8%, sensory deprivation 27%, urinary incontinence 61%, fecal incontinence 39%, polypharmacy 51%, affective disorder 51%, dysphagia 9%, delirium 20%. Mean length of stay: 293 days. Admission for respite care 26.28% and for medical problem 73.72%. Discharge at home 53.58%, nursing home 46.42%. Mean Barthel Index: at admission 38.15; at discharge 43.04; at 3 months follow-up 38.82; at 6 months follow-up 38.75. We found differences in functional gain ($P < 0.02$).
Comparing subgroups of patients discharged at home and at nursing home, we found the following differences: Barthel Index at discharge (53.54 ± 33.02 vs 38.33 ± 31.9, $P = 0.003$); dementia (32% vs 59%, $P = 0.001$); behaviour disorders (8% vs 31%, $P = 0.019$); affective disorder (35% vs 59%, $P = 0.002$); length of stay (66.9 vs. 759.8, $P < 0.001$); mortality at 3 months follow-up (8% vs 17%, $P = 0.015$) and medical complications at 6 months (8% vs 0%, $P = 0.027$).
Patients at respite care were more likely to be discharged at home than those with medical problems at admission (79.2% vs 44.4%, $P < 0.001$).
Conclusions.– Functional gain is observed at discharge from LTCF, but it's not maintained at 3 and 6 months follow-up. Patients discharged to a nursing home had worse functional status and were more likely to be demented, with behavioral and affective disorder, longer lengths of stays and 3 months mortality than those discharged at home. However, there were more medical complications at 6 months follow-up in patients discharged at home.

PC-092

Let us be proactive! Evolution and tendences of clinical assistance in a subacute care geriatric unit

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Objective.– To describe clinical characteristics in this postacute care assistance level from the beginning in 2008 till now, attending to tendences.
Material and methods.– Retrospective study of a cohort of in-patients in a Subacute Care Geriatric Unit during 2008, 2009 and 2010. Clinical organizative parameters, demography, comorbidity (Charlson), cognitive status (Pfeiffer), functional improvement (income, efficiency and modified Heinemann), social status (Gijón) and diagnosis of admission were described.
Results.– Five hundred and twenty-four in-patients were evaluated (44.1% men, 82.5 ED 8.5 years), 313 (59.8%) from Geriatric Acute Care Unit (GACU) and 30.2% from other departments (9% Accident and Emergency, 6.1% Internal Medicine, 4.4% Pneumology, 2.5% Cardiology). Some variables increased: patients from GACU (2008: 41.1%; 2009: 60.3%; 2010: 66.1%), ocupation bed index (2008: 70.5%; 2009: 84.5%; 2010: 97.3%), phisiotherapy (63.3%; 76.7%; 91.4%), age (80.2 ED 9.8; 82.7 ED 8.2; 83.1 ED 8 years old) and home discharges (48.9%; 61.9%; 63.3%). Average of stay (15.2; 13.9; 14.4 days), isolations (7.8%; 10.6%; 9.8%), social worker (63.3%; 62.4%; 66.5%), Gijón Index (8.6 ED 2.8; 8.1 ED 2.6; 8 ED 2.3) and institutionalization (13.6%; 15.6%; 13.6%) were similar. Some parameters decreased, like derivation to acute wards (8.9%; 3.7%; 1.2%); other changed, like mortality (11.1%; 4.8%; 5.7%).
Characteristics of in-patients were similar in comorbidity (Charlson: 3 ED 2.4; 2.8 ED 1.9; 2.7 ED 1.8), clinical precedents: diabetes (32.2%; 39.2%; 33.5%), COPD (27.8%; 37%; 31.8%), cardiopathy (40%; 42.9%; 34.3%), dementia (50%; 40.7%; 49%), Pfeiffer (4.2 ED 3.2) and diagnosis of admission: pneumoniae (11.2%; 18%; 17.6%), urinary tract infection (9%; 15.9%; 12.2%), neurological diseases (7.9%; 4.8%; 8.2%), fractures (13.5%; 5.3%; 5.3%) and delirium (5.6%; 6.9%; 4.1%).
We got similar functional income (26.5 ED 21.2; 27.7 ED 20.8; 26.9 ED 28.6), efficiency (1.9 ED 2.4; 2.4 ED 2.3; 2.3 ED 1.9) and modified Heinemann Index (69.6% ED 55.9; 69.8% ED 109; 93.9% ED 107) during this period.
Conclusions.– Subacute Care Geriatric Unit's in-patients keep on been fragile, with high comorbidity and needs of rehabilitation treatment.
The Interdisciplinary Team got an improvement of parameters of clinical management along the years.

PC-093

Characteristics of the patients assessed by the consultation team in a geriatric service of a general hospital

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Objectives.– To describe the profile of patients and care activities carried out by the Consultation Team.
Methods.– It is carried out a prospective study of the first 90 patients assessed consecutively from January 2011 by the Consultation Team of a General Hospital. A database with the clinical characteristics and health care activity performed is set up. The results are obtained by statistical analysis with SPSS 10.0.
Results.– 45.6% of the consultations come from general surgery, 14.4% from vascular surgery, 11.1% from neurology and the rest from other medical and surgical services. 57.1% of patients are women, whose median age is 83 years, the same as men. At baseline, 52.6% of the sample has a Katz A-B, 23.7% C-D-E and 23.6% F-G-H. Prior to admission, 32.1% of patients have cognitive impairment and 8.6% are institutionalized. During admission, 30% develop functional impairment and 11.1% delirium. At the end of follow-up, 29.6% are treated by their primary care physician, 21% are moved to the Intermediate Care Unit, 19.8% to the Geriatric Acute Care Unit, 7.4% are referred to the Geriatric Day Hospital,

3.7% to the Geriatric Clinicand about as many to other Specialist Clinics. Thirty percent of patients meet the criteria for polytherapy. 21.6% require pharmacological intervention that includes increasing the dose of 3 or more drugs. During follow-up 3 patients died, the total patients died before discharge from hospital is eleven, corresponding to 12.2%.
Conclusions.– Most of the assessments requested to the Geriatric Consultation Team in a General Hospital come from Surgical Services and they are patients with good functional status and little cognitive impairment. For the Consultation Team to be efficient, it is essential to have all geriatric care levels to ensure the proper location for each patient.

PC-094
Pain management at a palliative ward in a general hospital

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Introduction.– Pain is a prevalent symptom in palliative patients and most patients admitted to a Palliative Ward need pain control. This paper reflects pain management at a recently created Palliative Unit in a General Hospital.
Methods.– Prospective analysis of the first 207 patients admitted to a Palliative Ward.
Results.– Although pain is present in most patients, 53.71%, pain control is only the fifth cause of admission (15.6%), because there are other symptoms that achieve less control at home as dyspnea 21.6% and agony 20.6%. Most patients weren't receiving any analgesics at home (26%) or only as required 13.5%. Patients who needed strong opiates received mostly transdermal fentanyl 16.7%, or oral morphine 14.6%. Non-opioids were prescribed in 6.3% and other opiates-like oxicodone ó hidromorphine were less common (4.2%). Tramadol or codeine were rarely prescribed and only 1% received parenteral or interventional techniques to control pain. Most patients received a different opiod for breakthrough pain and background pain. Hospital Pharmaceutical Service only provides morphine, transdermic fentanyl, codeine, tramadol or paracetamol to impatiens, so most patients have to bring their drugs with them in order not to switch opiates if not indicated in order to achieve control or minimize side effects.
Analgesic switching was prescribed during admission in 76.3% patients, 62.5% needed different drug and route of administration, and received parenteral morphine. Inpatients had no access to parenteral ketamine, nor parenteral oxicodone. Most patients needed adjuvant analgesics: dexametasone 68%, gabapentin 22% or amitriptyline 6.5%.
Radiotherapy and interventional techniques (nerve ablation, intrathecal pumps or stimulator implantation) were scarcely used as they are only available at other hospital 100 km ambulance trip from our Unit.
Conclusions.– Pain remains a frequent reason to be admitted at a Palliative Ward, where control is possible despite serious limitations in access to world-wide recommended drugs and procedures.

PC-095
Resources optimization at hospital discharge after hip fracture: Influence of demographic factors

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Aims.– To evaluate the patient's characteristics with hip fracture attended at our hospital who have undergone hip surgery osteosynthesis. We study demographic variables and medical complications in the perisurgery period. To study the existing relation between the above-mentioned variables, the functional resultant situation and the destination to the discharge of these patients.
Material and methods.– Prospective descriptive study: patients > 65 years admitted with a diagnosis of hip fracture from February to June 2010. Epidemiological data, comorbidity, baseline functional status (2 months prior to admission) and functional status at discharge using Barthel and FAC scales are collected. Besides medical complications arising as a consequence of surgery. Statistical analysis: SPSS 17.0.
Results.– One hundred and eight patients, 81 women. Mean age 84.4 years. Average hospital stay 12.2 days. Surgical delay mean 2.5 days. Type of fracture: 60 intertrochanteric. Surgical techniques: 51 short gamma nail, 41 partial hip prosthesis. Medical history: 64.85% hypertension, 20.4% diabetes, 17.7% atrial fibrillation. Prior dementia: 61.25% no, 14.6% mild dementia, 16.5% moderate, 7.85% severe. Medical complications: 79.6% anemia, 30% constipation, 23% delirium. Admission Barthel > 60: 76.7%; at discharge > 60: 31.5%. Income FAC 4-5: 81.6%; at discharge 4-5: 35.1%. Destination to discharge: 54.6% medium-stay unit, 30.6% home, 5.6% support centre. 81.3% of patients > 85 years were not at home after discharge ($P = 0.017$). 78.3% of patients with FAC 1-3 were discharge to a destination other than home (P: 0.001). The lower Barthel at discharge the more likely it is to go to a destination other than home ($P = 0.002$).
Conclusions.– A high percentage of elderly patients admitted for hip fracture are derived after surgery at a place other than his habitual residence. The choice of destination is associated with age, ability to perform activities of daily living and mobility independently. Minor complications are common and appear as a modifiable factor. Dementia is not itself a predictor of the location of discharge, although a trend towards a greater need for resources as the degree of dementia increases. An appropriate choice of destination at discharge in patients with this condition is necessary to optimize available resources.

Neurologic, psychiatric and related disorders 1/*Trastornos neurológicos, psiquiátricos y relacionados 1*

PC-096
Dementia awareness training: Can it improve patient outcome in a general hospital?

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Introduction.– People with dementia in general hospitals have worse outcomes in terms of length of stay, mortality, readmission and institutionalisation[1]. Dementia awareness training can improve quality of care for people in General Hospitals and this study was aimed to establish the effects this training on overall patient outcome. Dementia awareness training for all staff of medicine for the elderly ward was completed in June 2008. The training highlighted recognition of dementia, reasons for challenging behaviour and person-centred care for people with dementia admitted to general ward.
Method.– A total of 149 (median age: 81, IQR: 21–100, female: 77%) patients who were admitted to the medicine for the elderly ward were evaluated. Data from March/April 2008 ($n = 90$), including demographics, discharge destination, length of stay, 28-day readmission, 30-day mortality, were compared to August/September 2009 ($n = 59$) for people with/without dementia and before/after staff training (Table 1). Data were analysed using SPSS v16. Fisher exact test was used for comparison.

Results.–

Table 1. Patient outcome for people with/without dementia post training.

	2008 ($n=90$)			2009 ($n=59$)		
	Established dementia ($n=17$)	Non-established dementia ($n=24$)	Not documented ($n=49$)	Established dementia ($n=12$)	Non-established dementia ($n=13$)	Not documented ($n=34$)
LOS, days (mean ± SD)	10.6 ± 12 $P=0.47$	10.4 ± 11	10.4 ± 11	9.7 ± 8 $P=0.49$	9.9 ± 8	9.7 ± 8
30-day mortality	3/ 17 (18%) $P=0.38$	1/24 (4%)	6/49 (12%)	4/12 (33%) $P=0.038$	3/13 (23%)	3/34 (9%)
28-day readmission	1/17 (6%) $P=0.65$	3/24 (13%)	4/49 (8%)	1/12 (8%) $P=0.71$	2/13 (15%)	3/34 (9%)
New Institutionalisation	2/17 (12%) $P=0.14$	0/24	1/49 (2%)	2/12 (16%) $P=0.13$	0/13	0/34

Conclusion.– Dementia Awareness Training does not improve patient outcome. The 30-day mortality is significantly higher in post-training period which may be due to higher number of people with advanced dementia.

PC-097

Carer burden stress in Parkinson's disease (PD)

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Introduction.– PD, a progressive neurodegenerative disorder affects the quality of life (QOL) of patients and their carers. This survey was conducted to identify symptoms which increase carer burden stress in a cohort of elderly patients attending PD clinic.
Method.– Forty-nine random carers recorded their views in a structured questionnaire.
Results.– Forty-nine percent were sole carer for more than 5 years. Fifty-five percent of carers were spouses. Sixty-nine percent felt that their role as a carer has affected their lifestyle. Seventy-four percent found the process emotionally demanding. Eighty percent of carers did not attend any support group. Carer burden stress was higher in female carers, spouse-carers and carers who were looking after their relatives with neuropsychiatric symptoms.

Subanalysis	Female (%)	Spouse (%)	Hallucinations (%)	Memory impairment (%)	Hallucinations and memory impairment (%)
Responses	67	55	8	39	25
No free time to call your own?	21	19	0	21	25
No scheduled activity for yourself?	30	37	25	42	17
Negative thoughts or feelings?	46	37	50	26	58
Interrupted sleep?	73	85	75	68	75
Emotionally demanding?	82	82	100	85	83
Affected your health in anyway?	52	48	25	37	75
Affected your lifestyle?	76	86	75	79	75

Conclusions.– This survey has highlighted that carer burden stress is common in elderly patients with PD. It is perhaps related to the stage of the disease and is more common when patients develop neuropsychiatric symptoms. It is therefore essential to recognise this in order to provide care and support from a multidisciplinary team to improve QOL of patients with Parkinson's disease and their carers.

PC-098

The performance of the Rowland Universal Dementia Assessment Scale (RUDAS) for cognitive screening in a geriatric outpatient setting

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Objectives.– Primary objective is to assess the performance of the Thai version of Rowland Universal Dementia Assessment Scale (RUDAS-Thai) for detecting dementia according to a text division of Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV-TR) criteria in a geriatric outpatient setting and secondary objective is to determine the optimal cut-off point of the RUDAS-Thai.
Method.– This is a cross-sectional study. The subjects were recruited from the Geriatric and Neurology Outpatient Clinic, Srinagarind Hospital, Khon Kaen University who were at the age of 60 years old or over. The period of enrolment was between September 2010 and March 2011. The content validity and test–retest reliability of a single rater of the RUDAS-Thai was performed initially. The RUDAS-Thai was administered to each participant. Then a specialist physician assessed each participant for dementia. Disease severity and other performance factors were also evaluated. All assessments were carried out in a blind and independent manner.
Results.– Eighty-nine (45.5%) subjects had dementia, 89 (45.5%) had normal cognition and 22 (11%) had mild cognitive impairment (MCI). The area under the receiver operating characteristic (ROC) curve of the RUDAS-Thai was 0.82 (0.75–0.87). The optimal cut-off point was 25/30, it provided a good sensitivity (78.65%) and fair specificity (60.67%). The RUDAS-Thai was not influenced by age, sex and gender but by educational level. A cut-off score of 24/30 in the patients with years of education 6 years or lower provided better sensitivity, specificity and positive likelihood ratio than the Thai version of Mini-Mental State Examination (MMSE-Thai 2002).
Conclusion.– The RUDAS-Thai is a good screening tool for dementia detection in a geriatric outpatient setting. It is portable, short-time consuming and declines some limitations of the MMSE. The optimal cut-off point is 25/30. However, education does affect the scores. We recommend its use over the MMSE-Thai 2002 in patients with low educational level. Additional studies are required to develop culturally sensitive tools to detect dementia.

PC-099

Gender differences and time trends in dementia spousal caregivers' burden

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Background.– Caregivers' high burden has been investigated in a number of dementia studies. However, we lack large-scale studies investigating the gender differences and time trends in continuous caregiving concerning burden affecting caregivers' well-being.
Objectives.– The aim of this study is to compare the burden of male and female spousal caregivers of persons with dementia. In

addition, we studied the effect of time and progression of dementia on these findings during a one-year follow-up.
Methods.– We used data from our two previous intervention trials using the same measure (Zarit burden scale) in a one-year follow-up. The interventions of original trials [(1) case manager trial, (2) exercise intervention trial] did not have effect on caregivers' burden. Therefore, this material is used to investigate the time trends of these measures without taking into account the randomization group. Altogether 335 couples were investigated, 128 male and 207 female caregivers. CDR, MMSE and Zarit burden scale were used to measure dementia stage, cognition and burden, respectively.
Results.– At the baseline the caregivers' mean age was 77 years. The male caregivers' spouses with dementia were on more severe stage according to CDR than female caregivers' spouses ($P = 0.048$). The mean MMSE among male caregivers' spouses was 14.0 (SD 7.1) whereas the respective figure among the female caregivers' spouses was 17.7 (SD 6.2) ($P < 0.001$). However, the male caregivers experienced less burden than the females according to the Zarit burden scale (31.5 vs. 37.5, $P < 0.001$). In logistic regression analysis adjusted for age and CDR, the male gender was protective against high burden (Zarit > 40 points) (OR 0.39; 95% CI 0.23 to 0.66). The burden of both genders decreased during the follow-up year: at 12 months the mean Zarit among males was 27.3 vs among females 35.9.
Conclusion.– Males experience significantly less burden while taking care of their spouses with dementia.

PC-100
Melatonin receptor 1b and risk of delirium

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Background.– A disturbed sleePC-wake cycle is one of the key features of delirium. The hormone melatonin regulates the sleePC-wake cycle through its effect on the biological clock via the melatonin receptors. Genetic variations in the melatonin receptor could contribute to susceptibility to delirium.
Objectives.– The purpose of this study was to investigate whether genetic variants in the MRNR1B gene are associated with delirium.
Methods.– Patients aged 65 years and older hospitalized with an acute internal disease or after a hip fracture were included. Delirium was diagnosed using the Confusion Assessment Method; pre-existent cognitive functioning with the IQCODE-SF; physical functioning with the Katz-ADL. In the MRNR1B gen, 5 gene polymorphisms were determined (rs18030962, rs3781638, rs10830963, rs156244 and rs4753426).
Results.– Fifty-three percent of 171 surgical patients and 33% of 699 surgical patients developed delirium. Delirious patients were older (82.8 vs 77.6 years) and more often had pre-existing functional (64 vs 36%) or cognitive impairment (83 vs 26%) ($P < 0.001$). None of the polymorphisms was found to be significantly associated with the occurrence of delirium in different analysis.
Conclusions.– Although the MRNR1B gene is a promising candidate gene for delirium in the elderly based on its functions in melatonin regulation, functional genetic variations were not associated with delirium. Still, the disturbed sleePC-wake cycle in delirium plays an important role in the pathophysiology based on non-genetic research.

PC-101
Depression in elderly nursing home residents in Malta

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A study was done to find out if depression in elderly nursing home residents in Malta was higher than in the community. The main hypothesis was to verify if depression was widespread but unrecognised in older nursing home residents in Malta. Also, management in those residents identified as being depressed was assessed along with significant associations. Limitations of the study included the exclusion of residents with dementia and those with aphasia, as well as the small number of residences used. Tools used included the GDS for depression, Barthel score for ADLs and MMSE for cognitive status.
One hundred and fifty subjects living in two nursing homes were included in this study. 67.3% (P value > 0.001) were found to be depressed. This was higher than in other countries. Twelve percent of the total population had major depression while 55.3% had minor depression. Only 40% of those diagnosed with depression in this study had been so diagnosed prior to the study. Significant associations included low Barthel scores (therefore being dependent in ADLs), loneliness, being currently in pain, being asked directly if one was depressed, having high scores in the GDS, having a low level of satisfaction in the nursing home, having a high number of medical co-morbidities, having had a fracture in the past, suffering from OA, being on an anti-depressant, being already diagnosed (past history) with depression, taking several medications and being a widow (P values > 0.05). Multivariate analysis found significant associations between several variables including depression, pain, dependency, taking several medications and several medical conditions. These associations were similar to those found in published studies. The study also showed that those residents already diagnosed with depression were being treated inappropriately with low prescription levels of anti-depressants (40.6%). Besides, the psychological approach to treatment was non-existent.
In conclusion depression in elderly homes is highly prevalent but underdiagnosed. Several significant associations with this pathology were noted. In those residents who were already diagnosed the treatment was inappropriate with low prescription levels of the correct medications. Besides, there was a lack of the multidisciplinary approach to treatment.

PC-102
Accidental falls in a day centre for Alzheimer pacients

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Introduction.– The incidence of accidental falls in patients with dementia varies from between 40 and 60%.
A third of elderly inpatients living in communities have an accidental fall once a year (33%).
It is difficult to identify the reason for accidental falls in patients with dementia, most of which are subject to multiple etiological factors.
Repeated falls are a sign of fragility for the elderly who suffer this geriatric syndrome and should/must be seriously studied in this population of patients.
Patients and methods.– The target population or this study are those patients with dementia that use the Alzheimer day centre in Cordoba (Saint Rafael family association for Alzheimer patients).
Total: 60: men: 22 (36.66%), women: 38 (63.33%).
We obtained permission from the caregivers so as to be able to carry out the study and we include a document/table which indicates the number of accidental falls suffered during this last year.
As most falls of patients with dementia are multifactorial we designed a table to collect relevant data and an appropriate statistical program so as to be able to analyze the data.

Our working hypothesis was to consider the possible increase of accidental falls in patients taking specific treatments for dementia. In this study our interest was centered in the use of rivastigmina en patches. Number of accidental falls in a day centre
Results.–.

	Total	Men	Women
No. of patients	60	22 (36.36%)	38 (63.33%)
Falls	18 (30%)	-	-

	Total	Rivastigmina	Donepecilo	Galantamina	Memantina
In treatment	57	15	11	3	28
Falls	18 (31.57%)	7 (46.66%)	4 (36.36%)	2 (66.66%)	2 (7.14%)

Conclusions.– We have discovered that there is no statistically significant difference to the number of falls in terms of patient/treatment. We did however observe a significant difference in the use of memantina; this could be due to the fact that memantina is a medicine which improves coordination, the main line of investigation being the use of mematina as antiparkinson treatment.

PC-103

Effects of intensive exercise intervention on Alzheimer's patients - A randomized, controlled trial

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Objective.– To study the effectiveness of intensive exercise rehabilitation on physical and cognitive functioning of home-dwelling Alzheimer (AD) patients.
Patients and methods.– Two hundred and ten AD patients were recruited from central Alzheimer drug register in Finland in 2008–2009. The patients were randomized into three arms: (1) day-care grouPC-based exercise (DCGE) (four hours twice/week in day center); (2) tailored home-based exercise (HE) (one hour twice/week for one year); (3) control group (CG). Patients were assessed with Functional Independence Measure (FIM) for physical functioning and clock drawing test for cognitive functioning.
Results.– Three randomized groups were well balanced at baseline. Patients' mean age was 78 years, and 39% were females. Two in three of AD patients suffered from moderate or severe dementia. At baseline mean FIM-total points were 70.6 in DCGE, 69.7 in HE, and 69.7 in CG. All groups deteriorated during the follow-up year but the HE group significantly slower. At 12 months decline in HE arm was −6.8 points (95%CI −3.6 to −9.9) whereas the respective figure in the DCGE was −10.1 (95%CI −6.8 to −13.5) and in CG −13.8 (95% −10.5 to −17.1). The difference in decline in FIM motor points was significant whereas the difference in decline in FIM cognitive points was not significant between the groups. The HE group improved in clock-drawing test (change 0.5 (95%CI 0.06 to 0.09) whereas the CG group declined −0.2 (95%CI −0.7 to 0.2) ($P = 0.029$).
Conclusions.– Intensive tailored home-based exercise has beneficial effects on AD patients' physical functioning and cognition over one year.

PC-104

Differences in cognitive and functional impairment of different primary degenerative dementias, mild cognitive impairment and healthy subjects. Partial results of neurodemensia study

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Objectives.– The aim of this study is to compare global cognitive and functional impairment of Mild Cognitive Impairment (MCI) and different primary degeneration dementias: Alzheimer Disease (AD), Dementia with Lewy Bodies (DLB) and Fronto-Temporal Dementia (FTD) in mild or moderate stage (according to the GDS test).
Methods.– This study is a provisional and partial results of the *"NeuroDemenPsia"* study that we are executing, which examines the different neuropsychological and psychological profiles of persons with dementia, MCI and people without cognitive impairment, with the aim to predict which are potentially predictor variables of the form and temporal evolution of dementias. We extracted 129 subjects from this longitudinal study. We used Folstein's Mini-Mental State Examination (MMSE) to measure global cognitive impairment, and the Reisberg's Global Deterioration Scale (GDS) for analyzing the functional outcome of the selected subjects.
Results.– There were 37 patients with AD, 20 with DLB, 17 with FTD, 33 with MCI (pathological group) and 22 healthy people (the control group). Kruskal-Wallis test shows that there are significant differences between groups at the level of cognitive ($\chi^2(4) = 65{,}359$; $P < .001$) and functional ($\chi^2(4) = 71{,}573$; $P < .001$) impairment. DMS test indicated that AD and FTD have more functional impairment and DLB and MCI minus. In the case of cognitive impairment, AD and FTD have more cognitive impairment and MCI minus. Control group shows the least deterioration in both cases compared with pathologic groups. We also found significant high negative Pearson's correlation between type of dementia and GDS score ($r = -0.651$; $P < 0.001$) and MMSE score ($r = 0.618$; $P < 0.001$). MMSE and GDS scores have high negative correlation ($r = -0.720$; $P < 0.001$) and there is a negative moderate between age and MMSE score ($r = -0.390$; $P < 0.001$).
Conclusions.– Patients with different types of dementia differ significantly on measures of global cognitive impairment and functional status from the beginning. In particular, AD and FTD patients had more severe global cognition and functional impairment and MCI suffers less deterioration at both cognitive and functional levels. GDS and MMSE questionnaires have relationship. Age is correlated with cognitive and functional impairment. In conclusion, we can say that we can infer the functional outcome based on cognitive impairment.

PC-105

Self-perceived quality of life in frail and demented elderly: Reliability in the depression list (DL) instrument

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Introduction.– Self-perceived quality of life is considered an important parameter when judging the outcome of e.g. treatment or training. The most widespread method for measuring quality of life is the use of a questionnaire instrument. There is sparse knowledge about the quality of life in the frail and

demented elderly. We want to examine the reliability of a questionnaire instrument in nursing home residents.
Method.– In The Netherlands, a generic questionnaire instrument "Depression List" (DL) was developed and validated for nursing home residents. The DL-test consists of 15 questions read aloud one at a time, and simultaneously a screen displays the written theme word for each particular question. The answers are categorized by the observer between three possible options. In this study the DL questionnaire was translated into Danish and then translated back into Dutch. Prior to the DL-test, the cognitive functional ability was tested by the Mini Mental State Examination (MMSE), where a score of more than 5 gave access to the DL-questionnaire. Intrarater-reliability was estimated by the observer categorizing the residents twice with an interval of 20 days. Interrater-reliability was examined by two observers scoring the patient simultaneously. Reliabilities were analyzed by the Wilcoxon signed-rank test and correlations coefficients by Spearman's statistics. In total, 100 patients are expected to enter this study.
Results.– The preliminary results were measured in 68 residents. Thirteen residents had a MMSE-score at 5 or lower. In total, 55 residents completed the DL-questionnaire twice. The intra-reliability showed that the residents reply consistently the first and the second time they are asked. The differences of the paired data were not larger than expected (PC-value = 0.39). Spearman rank correlation was 0.63. Interrater-reliability was measured in 13 residents. The differences of the paired data were not larger than expected (PC-value = 0.82). Spearman rank correlation was 0.97.
Conclusions.– The preliminary results suggest that it is possible to measure self-perceived quality of life in the frail and demented elderly with the DL-questionnaire. The results are not conclusive as the study will continue.

PC-106
Oxidative stress in Alzheimer's disease: Effects of supplementation with fermented papaya powder

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Introduction.– Brain is particularly likely to undergo oxidative damage. The cerebral metabolism requires high levels of energy and is closely dependent on aerobic conditions; it is also rich in polyunsaturated fatty acids, which are easily oxidizable, and in transition metals, likely to facilitate the formation of OH^- radicals. Brain is characterized by a low content of antioxidant systems when compared to other tissues and is therefore particularly susceptible to oxidative damage. Oxidative stress has been associated to pathological findings of Alzheimer's disease (AD), such as amyloid plaques and protein fibrils, and several alterations of oxidative stress have been linked to the development of AD, including: (a) an increased production of reactive oxygen metabolites, (b) a decline of antioxidant systems, and (c) a decreased efficiency in the repair of damaged molecules. Postmortem studies on brain tissue from AD patients have shown a number of oxidative damage markers, including increased lipid peroxidation, oxidative damage of proteins, glyco-oxidation, and a reduction of antioxidant enzyme systems.
Methods.– In the present study, we considered a group of 40 patients referred to the Alzheimer Evaluation Clinic of our Geriatric Unit (mean age 78.2 ± 1.1 years), 28 patients with AD, according to the DSM-IV and the NINCDS-ADRDA criteria, and 12 controls without AD. All patients were tested with measurements of 8-hydroxy-2'-deoxyguanosine (8-OHdG) in the urine to assess oxidative stress. Twenty AD patients (group 1) were supplemented with fermented papaya powder p.o. (4.5 grams per day) for 6 months, while the other 8 AD patients (group 2) did not receive any treatment.
Results.– At baseline, 8-OHdG was significantly higher in patients with AD vs. controls (13.7 ± 1.61 ng/mL vs. 1.6 ± 0.12 ng/mL).
After supplementation with fermented papaya powder (group 1), 8-OHdG was significantly reduced (from 14.1 ± 1.7 ng/mL to 8.45 ± 1.1 ng/mL, $P < 0.01$), while in group 2 (AD patients, not supplemented) 8-OHdG did not significantly change, with a nonsignificant tendency to increase (from 12.5 ± 1.9 ng/mL to 19.6 ± 4.1 ng/mL, P = NS).
Conclusion.– Our data show that AD is associated with an increased oxidative stress, and that antioxidant fermented papaya powder may be helpful to counteract excessive production of free radicals in these patients.

PC-107
Prevalence and factors associated to delirium in nursing homes

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Objectives.– (1) Study the prevalence of delirium in institutionalized elderly in nursing homes. (2) Analyze clinical, functional and mental factors associated to delirium.
Methods.– Cross-sectional study on a population of 486 subjects over 65 years, institutionalized in 6 nursing homes in Asturias. Sociodemographic (age, sex and admission time), clinical (number of diagnoses, number or prescription drugs, respiratory disease and drug groups), functional (Barthel Index or BI), mental (Mini-mental State Examination or MMSE). Detection of delirium is made according to Confusional Assessment Method (CAM).
Results.– Four hundred and eighty-six subjects were included in the study (83.3 ± 7.4 years, 67.3% women); scores on the BI were 55.9 ± 35.8, on the MMSE 17.5 ± 10.7. Average number of diagnosis 6.3 ± 3.4, average of prescription drugs 6.3 ± 3.2, average time from admission 27.4 ± 28.6 months. Prevalence of delirium was 11.11%. Regarding the variables studied we observed statistical association between delirium and BI (31.6 ± 31.6 in subjects with positive CAM and 58.9 ± 35.1 in patients with negative CAM, $P < 0.01$) and MMSE (9.3 ± 9.1 vs 18.5 ± 10.4, $P < 0.01$). We also detected association of CAM and dementia (prevalence of CAM in patients with dementia 18.6%, in patients without dementia (4.9%, $P < 0.01$), anemia (17.1% vs 9.7%, $P < 0.05$), pressure ulcers (25% vs 10.4%, $P < 0.05$) and urinary catheter (40% vs 10.5%).
Conclusions.– For our population study the prevalence of delirium was 11.11%. The scores on the Barthel Index and the Mini-Mental State Examination as well as the existence of dementia, pressure ulcers, anemia and urinary catheter are factors associated with the presence of delirium in the nursing homes.

PC-108
Risk factors involved in occurence of mild cognitive impairment

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Introduction.– This paper, part of Research Excellence Project CEEX nr.100/2006: "Genetics of aging processes associated with changes

in endocrine, metabolic and cognitive at humans'', developed in NIGG ''ANA ASLAN'', purpose prominence of Mild Cognitive Impairment (MCI) among a lot of elderly romanians. The aim of this study is to identify involved factors in brain aging process.
Method.– The patients lot selected was equal distribute on sex (75 men – lot 1 and 75 women – lot 2), each divided in three groups, depending of age (55–60 years group A, 61–70 years group B, 71–80 years group C). The selection was realized on assisted criteria. We attend to identify risk factors involved in brain aging, mentioned factors and agreed in specific literature. These factors was systematized in external factors and individuals factors (somatics and sensorials).
Results.– Comparing the two groups equal subjects recruited after criterion age, sex, average life, we found predominated in urban woman elderly (67% women and 56% men in urban areas, compared with 33% women and 44% of men rural), which can be explained by the easier of the patients in urban areas to intern. Depending on the level of education no significant differences between the two groups. There was a greater proportion of patients with primary and secondary education compared to those with higher education (just 12% at women and 19% at men). The proportion of women with MCI alone (widows or divorced) is higher (49%) than men with MCI alone (23%). Smoking as risk factor is significantly more frequently at men (39%) compared to women with MCI (only 9%). While alcohol consumption has been declared 28% to men, at women was absent. Abuse of drugs and excessive consumption of sweets, fats, proteins was founded in a very small number of patients. Psychiatric history was significantly more frequently encounter at women (17%) compared to only 1% at men with MCI.
Conclusions.– Comparative analysis of 2 groups of men and women with cognitive disorder showed a slight according to data obtained from literature, but also some differences, for the population of Romania.

PC-109

Cohort Paca-Alz: Psychotropic consumption in Alzheimer disease (AD), from the database of health insurance, South-East France

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Aim.– Describe specific Alzheimer treatments and psychotropic medications delivered to an Alzheimer Disease (AD) population in South-East of France in 2008, from a French database of health insurance.
Method.– All subjects affiliated to the General health Care system in Provence-Alpes-Côte d'Azur and Corsica (i.e. 75% of the total population of the area), with at least one delivery of specific drug for AD (Acetylcholinesterase Inhibitors, ACI: Donezepil, Galantamine, Rivastigmine, and Memantine) were enrolled in the cohort. Results were obtained from the reimbursements databases. In France, psychotropic drugs prescriptions are exhaustive as there is no under-the-counter delivery in France. Each delivery is considered to be given for one month.
Results.– Twenty thousand four hundred and thirteen subjects were treated by one of the specific drug for AD (0.5% of the total population affiliated to the general care system). Mean age of the AD population was 81.3 years old (±7.25); 71.6% were female. Prevalence of the patients aged 75 years old and over and treated by ASD was 52% for females and 32% for males. Almost 86% of the deliveries were monotherapy (79% treated with ACI and 21% with Memantine) and 12% were associations of ACI and Memantine.
Seventy-three percent of the AD population had at least one delivery of psychotropic drug during 2008. Antidepressants were delivered to 52% of the population with a delivery average of 9.07 for one year; 49% of the population had at least one delivery of anxiolytics (mainly Benzodiazepines) with a delivery average of 5.8; 26% had a hypnotic with a delivery average of 6.6. Antipsychotics drugs were reimbursed in 30% of the population; 61% were chronic deliveries (number of delivery > 3 for one year).
Conclusion.– Psychotropic drugs are very often prescribed in AD patients. Lot of these prescriptions are long-term deliveries which increase the risk of treatment adverse effects.

PC-110

How effective is the memantine in geriatric patients with frontotemporal dementia profile?

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Objectives.– In the advanced stages of dementia with frontotemporal profile (DFT) functional and behavioral alterations mark the prognosis. We analyzed whether memantine can minimize these changes and which of the variants benefit most from treatment.
Material and methods.– Of the sample of patients seen in consultation with cognitive impairment, are extracted all patients diagnosed with FTD. Front differ – variants dorsolateral, apathetic, orbitofrontal, and temporal. Variables are analyzed, cognitive (MMSE), functional (Blessed and B) and behavioral (Blessed C) in three sections: baseline, 8 and 18 months after initiation of treatment with memantine and if inferred statistical correlation between related samples (SPSS 11.5).
Results.– Retrospective cohort study. Extracted 120 patients (7.75% of total sample). Of these, 67.5% are DFT-F (35 patients variant dorsolateral, orbitofrontal and 32 with version 14 with version apathetic) and DFT 23.5% T. Of frontal dementia treated with memantine, we analyzed the variables mentioned, we get significant improvement in cognitive parameters, but functional improvement (matched pairs *t* test basal-Blessed Blessed 8 and 18 months) and behavioral (basal C-Blessed Blessed C 8 and 18 months) Finally, we compare homogeneous groups of variants dorsolateral and orbitofrontal mementina treated. In the orbitofrontal not observe significant improvement ($P < 0.001$) to 18 months both functional and behavioral (basal-Blessed Blessed 18 months pairs, basal-Blessed Blessed C 18 months pairs), while dorsolateral are ($P < 0.001$) at 8 and 18 months.
Conclusions.– The DFT is the third most common cause of cognitive impairment in geriatric sample target of the study. Memantine was effective and overall functional behavioral level, no improvement in the cognitive domain. Its effectiveness was earlier in the dorsolateral and latest variant in the orbitofrontal, at the expense of her behavioral improvement.

PC-111

How useful is a specialized unit dementia in geriatric patients?

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Objectives.– About half of patients attending the outpatient Geriatric Unit cognitive impairment. We intend to study whether the structure of the attention of this disease with a longitudinal approach in a specialized cognitive level but not only functional,

behavioral, and social, allows not only diagnosis but tuning detection of comorbidities that make the development of disease.
Methods.– Retrospective cohort study of patients with at least two visits from the structure in 2005 was to study December 2010. It analyzes (a) the epidemiological characteristics of the sample, (b) confirmed the diagnosis of cognitive impairment, (c) other concomitant pathology diagnoses were confirmed on a second visit, (d) most frequent complications in patients during treatment. To study the data was used SPSS 11.5.
Results.– The sample is constituted by a total of 1548 patients, mean age at diagnosis of 78.4 years, female predominance (79.2%). Only 70 patients (4.5%) were institutionalized. Up to 204 patients (13.7%) of those referred had no cognitive impairment and 356 (23%) were diagnosed with mild cognitive impairment (MCI). One thousand and two patients (64.7%) were diagnosed with Alzheimer's disease (AD) with varying degrees of associated vascular component, 421 patients (27.2%) were diagnosed as vascular profile, 101 (6.5%) frontotemporal profile, 24 (1.5%). There were 23 new diagnoses of sleep apnea (SAHOS) and 16 of normal pressure hydrocephalus (HN). One hundred and ninety-one diagnoses are collected acute confusional S (SCA) that is statistically significantly correlated with the diagnosis of non-dementia and with the rapid evolution in the second query.
Conclusions.– More than a third of patients without dementia or were in the mild stage. The diagnosis of SCA was more confusion to the misdiagnosis of dementia, but which in turn correlated with more rapid evolution. Referral to monographic and overall allowed early detection of SCA, but also of SAHOS, HN and other comorbidities whose approach improved the prognosis of their own cognitive impairment.

PC-112

Delayed release galantamine. Analysis of results in a series of 100 patients geriatric naturalist consecutive

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Objectives.– Galantamine extended release in unidosis made progress resulting in subjective improvement in these patients. We explored whether this improvement is quantifiable subjective cognitive level, functional, behavioral, and global and if maintained over time (18 and 30 months). Finally, we appreciate how variables can be inferred statistically significant improvement in the study sample.
Methods.– Retrospective cohort study. Sample size: naturalistic series of the first 100 patients starting treatment with galantamine in capsulas. The progressive value epidemiological parameters, vascular (Hachinski), cognitive (MMSE), functional (Blessed A and B) and global, with 4 breakpoints, baseline, 8, 18 and 30 months. We compared pairs of variables directly related and establish if it is inferred statistical significance ($P < 0.005$) as SPSS11 statistical package, 5.
Results.– Mean age 80 years, predominantly female (78%). Ninety-five percent of the sample were mixed dementia or Alzheimer's disease with significant vascular component (half Hachinski 6.9). In review of 86 patients attending 8 months (9 dropouts, 5 exitus), at 18 months 75 patients (9 and 2 dropouts exitus), keeping 42 patients at 30 months. A cognitive level statistically significant improvement is seen at 8 and 18 months is not maintained at 30 months. A global functional level, as can be seen Blessed Scale statistically significant improvement ($P < 0.005$) at 8, 18 and 30 months, by analyzing the sub-sections A, B and C, occurs at the expense of the field behavior ($P < 0.001$).
Conclusions.– Therapeutic intervention with slow-release galantamine reported better results at both the cognitive, functional, behavioral, and global when selecting a suitable target population profile and when it intervened in early stages. Importantly, these results were maintained at 30 months, statistically significant overall functional level, mainly in the field taking shape behavior.

PC-113

Use of test confusion assessment method (CAM) to improve efficiency of delirium detection in an intermediate care hospital

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Aims.– To determine the frequency of delirium in the intermediate care units. Compare the use of CAM test to the use of clinical practice in the detection of delirium on admission.
Materials and methods.– From 1st January to 28th February we used the CAM test prospectively for the diagnosis of delirium in 24–48 hours after admission of patients admitted to the 2nd floor of an intermediate care Hospital. We compared the results to those obtained in patients admitted to 3rd floor during the same period by using the information recorded in the clinical history (control patients). The results were expressed in means, standard deviation and Chi-square was used to compare qualitative variables.
Results.– Forty-three patients evaluated with CAM test and 45 patients control. Patients evaluated CAM test detected 16 (37%) patients with delirium, of which 8 (50%) were hyperactive, 5 (31%) mixed and 3 (19%) hypoactive, where as patients control we detected 9 (20%) with delirium, the difference was statistically significant ($P < 0.05$). The average age of evaluated with patients CAM test was 79.9 ± 10.3 years, the average age of patients with delirium was 82.17 ± 7.7 years, and those without delirium was 78.18 ± 12.2 years. The Barthel Index mean at admission and on discharge of patients with delirium was 21.1 ± 15.6 and 68 ± 23.1 and the patients without delirium was 39.1 ± 23.1 and 60 ± 23.9. The number of patients who died with delirium was 4 (25%) and without delirium was 1 (3.7%). The average stage of patients with delirium was 44.1 ± 24.0 days and patients without delirium was 40.5 ± 17.9 days.
Conclusions.– Delirium is a frequent diagnosis. CAM Test is useful to improve efficiency in the detection of delirium. The hyperactive delirium is the most frequent. Patients with delirium have a worse health status (lower Barthel Index mean on admission and at discharge, longer hospital stay and higher mortality) than those without delirium.

PC-114

Dementia, behavioral symptoms and dependence

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Objectives.– Demonstrate the degree of association between dementia and behavioral symptomatology and the degree of dependence.
Material and methods.– Analysis of patients admitted in 2011 with the diagnosis of dementia, behavioral symptoms and degree of dependence shown. Analysis of age, functional status, type and stage of dementia, comorbility, presence of SCPD, NPI score and treatment. Data Base File Maker 5.0 and Epi Info.

Results.– We have analyzed the medical records of 209 patients with cognitive impairment, which represents 66.77% of the total revenue. The average age is 83.78 years, with 11.82% over 90 years. The types of dementia are: 52.63% Alzheimer, 33.01% mixed dementia, 5.74% vascular dementia, 4.7% Parkinson, 1.43% CL dementia and 2.39% high dementias. The degree of dependence is advanced in 64.11% and moderate in 18.66%.
The MEC score is lower than 10 in 49.76%, from 10 to 25 in 44.49% and over 25 in 5.74% of cases. The GDS of 7 appears in 32.53%. The average pathologies presented other than dementia is 2.2 ranging from a low of 1 to a maximum of 7. 64.11% suffered polypharmacy (5 or more drugs). Antidemential treatment is 33% anticholinesterases and 39.71% memantine. 12.4% with citicoline.
47.84% show SCPD with an average frequency of 5.8 and a severity of 5.4, according to NPI. The treatment for SCPD is distributed in the following way: 45.45% hypnotics, 22% anxiolytics, 33.49% neuroleptics and 26.37% antidepressants.
Conclusions.– 1. Dementia continues leading the most frequent diagnoses in the residential environment. 2. The most common dementia remains the Alzheimer type. 3. Advanced dementia is the most prevalent in our series involving more functional dependence. 4. The presence of SCPD is high and 100% of the cases are treated.

PC-115

Prevalence and characteristics of restless legs syndrome in elderly and the relation of serum ferritin levels with disease severity: Hospital-based study from Istanbul, Turkey

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Introduction.– Restless Legs Syndrome (RLS) is an underdiagnosed condition, characterized by unpleasant sensations in the legs. Pathophysiological mechanisms may include iron deficiency as reflected by low serum ferritin levels and dopaminergic system dysfunction. The purpose of our study was to investigate the prevalence and characteristics of RLS in elderly and the relation of serum ferritin levels with disease severity.
Method.– Ambulatory 1012 (621 women, 391 men, mean age: 73.51 ± 7.12) consecutive patients above 65 years who admitted to our clinic for any reason were evaluated according to the International RLS Study Group (IRLSSG) criteria. The disease severity was evaluated with IRLSSG rating scale.
Results.– One hundred and three patients (74 women, 29 men, mean age: 72.43 ± 6.31) (10.18%) had RLS diagnosis. Only 9 of them had known RLS. The duration of symptoms was 4.80 ± 4.65 years and 27 patients (26.2%) had positive family history. The average of serum ferritin levels was 39.13 ± 23.74 ng/ml and 71 patients (68.9%) had serum ferritin levels ≤ 50 ng/ml. According to IRLSSG rating scale, patients were classified as severe–very severe group ($n = 49$) and mild–moderate group ($n = 54$). The ferritin levels of severe–very severe disease group were lower than those of mild–moderate disease group (26.01 ± 15.82 ng/ml versus 49.87 ± 23.24 ng/ml, $P < 0.001$).
Conclusion.– Our data showed that RLS is very common in elderly and the disease is more severe in patients with lower ferritin levels.

PC-116

Factors related to undervaluation of health-related quality of life in Alzheimer disease between patients and their caregivers

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Objective.– In Alzheimer disease (AD), practitioners make their evaluation on the basis of multiple information sources. Among those, patients and their caregivers are privileged. When patients are declining cognitively, caregivers' opinion becomes more and more important. The aim of the study was to identify factors influencing differences between the ways AD patients and their caregivers, rate the patients' health-related quality of life (HRQoL).
Methods.– Cross-sectional multicentre study set up between March 2006 and November 2007 in six French hospitals and one hospital in French-speaking Switzerland. Patients were 65 years or more, suffering from mild to moderate AD according to NINCDS-ADRDA criteria, native French speakers, with a main caregiver. Data concerning patients were: sociodemographic information, clinical characteristics (from comprehensive geriatric assessment), and neuropsychiatric data. For the caregiver, sociodemographic data as well as caregiver burden were recorded. The QoL-AD questionnaire was used to assess patients' specific HRQoL. Interrater reliability was assessed using intraclass coefficient. For each of the 13 items of the QoL-AD questionnaire, differences between the patients and their caregivers were tested using Student's paired test. For global scores, Bland and Altman's method was used. Generalised linear model was used to identify factors related to the difference of scores of HRQoL between patients and their caregivers.
Results.– In all, 122 dyads "patient-caregiver" were included in the study. Patients were 82 ± 6 years and mainly women (69%). Mean MMSE score was 21 ± 5. Caregivers were 66 ± 15 years with a majority of women (64%). Mean Zarit's burden score was 26 ± 15. For global scores, Bland and Altman's method confirmed an underestimation by caregivers. Independent factors related to difference between patients and caregivers were: MMSE score (beta = 0.32; 95% CI = 0.05; 0.59); IADL score (beta = −0.61; 95% CI = −1.14; −0.07); total NPI score (beta = 0.10; 95% CI = 0.05; 0.59); Zarit's burden score (beta = 0.09; 95% CI = 0.01; −0.17);
Conclusion.– Measurement of HRQoL in patients with dementia is very important because providing a good HRQoL is the main goal of the management of such subjects. Nevertheless, practitioners must take into account the trend of underestimation when HRQoL is rated by proxies.

PC-117

Integrated treatment with acetylcholinesterase inhibitors (AChE) and cognitive rehabilitation (CR) improves the multidimensional prognostic index (MPI) in patients with Alzheimer's disease: A six-month follow-up study

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Introduction.– Acetylcholinesterase inhibitors (AChE) are the pharmacological mainstay treatment in the care of patients affected of Alzheimer disease (AD). In addition or alternatively, cognitive rehabilitation (CR) appears to be a useful support treatment. Recently a Multidimensional Prognostic Index (MPI) based on a Comprehensive Geriatric Assessment (CGA) was validated in elderly demented patients to assess the mortality risk. The aim of this study was to evaluate the effect of an integrated treatment for six months with AChE and CR on the MPI and cognitive, emotional and behavioural aspects in AD patients.
Methods.– We enrolled 46 patients with an age ≥ 65 years admitted to the Alzheimer's Evaluation Unit with a diagnosis of AD. At baseline and after six months the following tests were performed: Mini Mental State Examination (MMSE), Clinical Dementia Rating (CDR), Hamilton Rating Scale for Depression

(HAM-D), Geriatric Depression Scale (GDS), Neuropsychiatric Inventory (NPI), Neuropsychiatric Inventory-Distress (NPI-D) and a standard CGA including information on functional, nutritional status, comorbidity, drug use, risk of pressure sores and co-habitation.
Patients were divided into two groups: GrouPC-1 ($n = 23$) treated with AChE for six months plus two monthly cycles of RC and GrouPC-2 ($n = 23$) treated with AchE for six months only.
Results.– At baseline no significant difference were showed between the two groups on mean age, educational level and scores in MMSE, CDR, HAM-D, GDS, NPI, NPI-D and MPI. After six-months of follow-up significant differences between GrouPC-1 vs. GrouPC-2 were observed in the following parameters: (1) MMSE improvement = 11.4% vs. 1.7%, $P < 0.0001$; (2) CDR improvement = 29.8% vs. 0.5%, $P = 0.005$; (3) HAM-D reduction = 25.92% vs. 14.69%, $P < 0.0001$; (4) GDS reduction = 26.91% vs. 13.00%, $P < 0.0001$; (5) NPI reduction = 23.33% vs. 13.16%, $P < 0.0001$; (6) NPI-D reduction = 27.95% vs. 11.33%, $P < 0.0001$; (7) MPI reduction = 19.2% vs. 8.7%, $P = 0.003$. No significant improvements were observed in both the groups on CIRS values and the number of drugs taken.
Conclusions.– Integrated treatment with AChE and CR for six months significantly improves cognitive, emotional, behavioral status and the MPI in AD patients.

PC-118

Recognition memory deficits in mild cognitive impairment

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Our basic goal in this research is to explore deficits in recognition memory in MCI participants. Recognition is usually thought to be carried out by a mixture of recollection and familiarity, in which the first process refers to the ability to recover contextual information from the study episode, whereas familiarity is associated with a lack of time and space information of previous encounters. The possibility that MCI patients show deficits in recollection and/or familiarity is controversial (Serra et al., 2010). With this purpose in mind, we exposed participants to an associative recognition test. This associative recognition test was aimed at estimating recollection abilities. After this test, participants were exposed to a second test in which some of the words were perceptually related to the study ones, specially designed to estimate familiarity. We expected to find deficits in both components of recognition memory in patients with MCi, as well as, differences in recognition abilities as a function of age.
Method.– The experiment was completed by three groups; 21 healthy elderly adults with a mean age of 66 years, 20 MCI patients with a mean age of 68 years, 20 MCI patients with a mean age of 81 years. All groups were given a complete neuropsychological battery in which language, memory and executive functions, among others, were evaluated.
Results.– An analysis of variance revealed a significant effect of Group, indicating that the healthy control group outperformed the two MCI groups in recognition abilities, in both, recollection and familiarity.
Conclusions.– This study provides definitive evidence for the existence of deficits in both retrieval processes in recognition memory in pre Alzheimer's disease stages, and provides evidence in favor of using this indices in neuropsychological batteries for diagnosis.

PC-119

Increased mean platelet volume indicating the vascular risk in Alzheimer's disease

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Introduction.– Vascular risk factors play a significant role in the pathogenesis and progression of Alzheimer's disease (AD). Mean Platelet Volume (MPV) may be a potential platelet marker to demonstrate the vascular damage of AD. Increments in MPV values in stroke, myocardial infarction, chronic vascular disease and thromboembolic disorders were reported. Since AD can be considered as a vascular disease, MPV may also be a useful indicator of the risk for AD development. MPV is a laboratory parameter generated by full blood count analyzers as a part of the routine complete blood count (CBC) test cycle which is usually overlooked by clinicians. The aim of our study was to assess the interrelationship between MPV and AD.
Method.– One hundred and twenty-six AD patients and 286 patients with normal cognitive function aged 65 years and over admitted to the outpatient clinic for routine medical care were enrolled.
The diagnosis of AD was made according to DSM-IV and NINCDS-ADRDA criteria after cognitive assessment and neuroimaging performed using magnetic resonance.
Those patients, on dialysis, with malign disease, severe liver failure, deep vein thrombosis, coronary artery disease, congestive heart failure, cerebrovascular accident, diabetes mellitus, hypothyroidism, hyperthyroidism and morbid obesity were excluded from the study. SPSS (Statistical Package for Social Sciences) for Windows 15.0 programme was used for statistical analysis.
Results.– One hundred and twenty-six patients with AD [mean age: 76.2 ± 6.8, 44 males (34.9%)] and 286 patients with normal cognitive function [mean age: 75.2 ± 6.3, male 123 (43%)] were evaluated. The mean $\pm$ SD of MMSE was 20.16 ± 7.29 in AD group. The mean MPV values were significantly higher in AD group (8.46 ± 1.15 vs 8.17 ± 0.90; $P = 0.011$).
Conclusion.– In this study, significantly higher MPV values in patients with AD have been detected. Since increased MPV levels are usually considered as a vascular risk factor, the results of this study suggested the role of platelet activation in the vascular pathogenetic basis of AD.

PC-120

Prevalence of delirium in patients older than 65 years who come to emergency with medical pathology

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Objectives.– To measure the prevalence of delirium in patients older than 65 years with or without dementia who come to emergency with medical pathology, its registration in the medical history, as well as epidemiological or clinical factors related.
Methods.– Cross-sectional study with 150 patients older than 65 years, admitted in the Emergency Department of Hospital La Paz, from June to August 2010. It was used the Confusional State Assessment Method (CAM) for the diagnosis of delirium. On arrival, they were evaluated with the Informant Test to detect the presence of cognitive impairment prior the study, quantified its functionality through Barthel Index and comorbidity by Charlson index. We collected demographic data, reason consultation, cardiovascular risk factors and previous medicine intake. The

pharmacological treatment used for delirium, the use of mechanical fasteners and its registration in medical history. We compared quantitative data using the *t*-Student and, qualitative Chi-square or Fisher's exact test. Statistical tests bilateral and significant values those with *P* less than 0.05. Analysis of data with SPSS 17.0.
Results.– The prevalence of delirium was 35%. Its presence was associated with age, older than 85 years ($P = 0.040$), living in residencies ($P = 0.003$), taking more than 6 medications and have a score in Barthel Index less than or equal to 60 points ($P = 0.034$). The most common treatment used was haloperidol 80.6% and a 40% needed mechanical fasteners. No episode was reported in the medical history.
Conclusions.– The high percentage of elderly patients admitted at the emergency department and suffer delirium (35%), becomes a priority to the health-care personnel to recognize and managed it properly and its register as a preliminary step to the realization of protocols for prevention and treatment.

PC-121

Can dementia be diagnosed during the hospitalization?

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Context.– So far the dementia diagnosis is considered that it cannot be performed during the hospitalization for existing confusion factors, namely the delirium presence. But the acute hospitalization is an opportunity for this diagnosis if confusion factors are excluded with guarantees.
Objectives.– To study the validity of systematic criteria for detecting cognitive impairment and a standardized dementia diagnosis protocol that allows to complete the study and to initiate treatment in elderly patients admitted to a geriatric department.
Methods.– A prospective cohort of patients admitted to the Geriatric Department during five months. We excluded patients with previous diagnosis of dementia and included those who fulfilled the following criteria: (a) previous score in the Red Cross Hospital Mental Scale (CRM) ≥ 2, (b) score at admission in Pfeiffer's Short Portable Mental State Questionnaire ≥ 5 mistakes and (c) delirium presence (Confusion Assessment Method [CAM] criteria). We conducted a cognitive history and physical examination, and we applied the following diagnosis protocol: (1) CAM, (2) DSM IV criteria of dementia, (3) Mini-Mental State Examination, Clock Drawing Test and Spanish Informant Questionnaire on Cognitive Decline in the Elderly, (4) Hughes's Clinical Dementia Rating, (5) Pfeffer's Functional Activities Questionnaire and (6) analytical and neuroimaging examination.
Results.– Three hundred and fifty-three patients were admitted, of which 84 fulfilled inclusion criteria. Only 9 (2%) presented delirium without fulfilling the criteria a or b. Seventy-nine (94% of included patients) agreed to be studied. The study could be completed during the hospitalization in 60 (70% of included patients) cases whereas the 19 (24%) remaining patients needed to complete the study after the discharge. Final diagnoses were dementia-type Alzheimer or mixed in 41 (46%) cases, vascular dementia in 12 (14%), mild cognitive impairment in 5 (6%) and delirium without impairment in 2 (2%). Therapeutic recommendations were given in all cases and began treatment for AD in 15 patients (18% of those included).
Conclusion.– The application of systematic criteria for detection and a standardized diagnostic protocol allows to discover unknown cognitive problems in a quarter of elderly inpatients and to obtain a diagnosis on 70% of them. Dementia is the more frequent diagnosis.

PC-122

Sundowning in institutionalized patients in psycho-geriatric units

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Introduction.– "Sundowning"is used to describe symptoms that occur during sunset in patients with dementia. The fading of the daylight worsens the disorientation and confusion, resulting in a disorder of conduct, agitation and aggressiveness.
Objectives.– To identify the prevalence of patients with dementia and psychiatric disorders that suffer symptoms such as "appearance or intensification of conduct disorder associated with nightfall (from 17 to 20 h), not related to concomitant medical illness". To also evaluate those patients who presented rhythm sleep disorder, and determine the association between both problems and taking psychotropic drugs.
Material and methods.– On a sample of 300 institutionalized patients in two psychogeriatric units belonging to the Hospital Sisters Complex, 37 patients have been identified who have routine behavioral alterations predominantly in the evening. It has developed a questionnaire that collects the clinical and epidemiological characteristics of these patients, along with the frequency of sundowning symptoms in the last 4 weeks and the presence of sleep disorders as usual.
Results.– We analyzed the 37 patients (29 women and 8 men) with a mean age of 75. The diagnoses corresponding to dementia 40%, and other psychiatric disorders 60% (residual schizophrenia, bipolar disorders, personality disorders, mental retardation, etc.). Functional and mental impairment in patients is severe, with a BI of 34 and a GDS of 5. NPI mean score is 23. Sleep disorders occur in 49% of patients on a regular basis (27% occasionally irregular sleep, interrupted sleep 19%, 3% inability to sleep). In the past 4 weeks it has been observed that sundowning symptoms appear in 36 residents of the 37 identified at the outset: 14 diagnosed with dementia and 22 diagnosed with other mental disorders. The syndromes that appeared frequently in this period were as follows: 40.5% had regular episodes (daily), 19% occasionally (a few times a week), 38% rarely (1 or 2 times a month) and 2.5% did not. No significant differences were found between the diagnosis of dementia or other psychiatric disorders and the presence of sundowning syndrome. We found association between the frequency of the symptoms and sleep disturbance ($P < 0.01$), so that 52.6% of patients who have regular sleep have not shown the symptoms in these 4 weeks and 40% of patients with irregular sleep on a frequent basis usually have developed the syndrome (daily) during this period. With respect to psychotropic drugs, we have only found an association between the frequency of the pathology and taking atypical neuroleptics in the afternoon ($P < 0.015$).
Conclusions.– It is possible that more studies need to be carried out linking the syndrome with other disorders different to dementia in institutionalized psychiatric patients. On the other hand, we should perhaps consider other alternative treatments, as improving the sunset syndrome we might be able to help with sleep disturbances and vice versa.

PC-123

Profile of elderly patients with cognitive impairment with no criteria of dementia

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Introduction.– A large percentage of elderly patients complaining of loss of memory present cognitive impairment without criteria of

dementia. Our objective was to determine the profile of these patients and measure possible differences with patients with dementia.
Methods.– At the first visit we analyzed the characteristics of elderly patients attended by the geriatric clinic of the dementia unit of our institution (Badalona Serveis Assistencials) who were diagnosed with cognitive impairment without meeting DSM-IV criteria for dementia after geriatric assessment and relevant tests.
Variables recorded were: age, gender, body mass index (BMI), Barthel Index (BI), Lawton Index (LI), Mini-Mental State Examination (MMSE) and the Blessed Scale (BS), which reflects changes in three categories: daily activities (B1), habits (B2) and personality and behaviour (B3) and the total (TB).
We compared patients with cognitive impairment without dementia with patients meeting DSM-IV criteria for dementia.
Results.– **We included 641 patients, 455 (70.98%) female and 186 (29.02%) male.**
Patients with cognitive impairment without dementia:
– 225 patients (35.16%), of whom 172 (76.44%) had mild cognitive impairment and 53 (23.60%) other cognitive deficits;
– mean age 79.78 years. Mean BI 92.60, mean LI 5.45. Mean BS: B1 1.827, B2 0.785, B3 3.178, and TB 5.76. Mean MMSE 23.66. Mean BMI 27.645.
Patients with dementia:
– 416 patients (64.84%), of whom 131 (31.5%) had Alzheimer disease, 155 (37.25%) vascular dementia, 104 (25%) mixed dementia (coexisting Alzheimer and vascular dementia) and 26 (6.25%) other dementias;
– mean age 82.45. Mean BI 72.98, mean Lawton 2.32. Mean B1, B2 and B3 were 4.169, 2.634, and 5.355, respectively; BT was 12.02. Mean MMSE 15.12. Mean BMI 27.140.
Comparison between groups:
– statistical analysis showed significant differences in age, BI, LI, MMSE, B1, B2, B3 and TB.
Conclusions.– In our sample, patients with cognitive impairment without dementia had:
– age < 80 years, good functional capacity and significant changes in personality and behaviour;
– compared with patients with established dementia, patients with cognitive impairment were younger and, logically, had better functional and cognitive capacity.

PC-124

Five years experience with diagnostic and therapeutic approach in dementia in a nursing home in Madrid

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Aim.– To determine which type of dementia is the most frequently detected, which diagnostic imaging techniques are most often used, which treatments are more commonly prescribed and which is the evolution of patients after intervention.
Methods.– We evaluated all the residents who showed cognitive impairment (MEC < 24) at any time of their stay in the nursing home between May 2006 and May 2011. We refer to specialist for differential diagnosis those who are thought to obtain a major benefit with treatment.
We carry out a retrospective analysis of the prevalence of each type of dementia, the diagnostic techniques most commonly used, the medicines most frequently prescribed and the clinical evolution of patients in annual reviews, comparing those who have received treatment with those who have not.
The statistical data analyses are carried out using SPSS software for Windows.
Results.– From a sample of more than 300 residents, a quarter of those who show mild to moderately severe cognitive impairment are referred to a specialist for differential diagnosis and treatment. Most of them are referred to geriatricians. The diagnostic imaging techniques most often used are the computerized axial tomography (CAT) and the single-photon emission computed tomography (SPECT). The most frequent diagnosis is Alzheimer disease and the most commonly used pharmacological treatments are donepezil and galantamine. In principle, it seems that the residents under treatment show less deterioration than those who don't receive any treatment.
Conclusions.– The admission in a nursing home or a change from baseline situation during their stay may be a proper moment to approach the cognitive state of a resident.
The detection of cognitive impairment ant its diagnostic study can provide benefit from specific treatment, provided there are not other contraindicated factors.

PC-125

Is a psychiatric consultation necessary for the elderly person who attempted non-suicidal intentional drug ingestion in an emergency department?

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Purpose.– The purpose of this study was to investigate the relationship between suicide risk factors and psychiatric disorders, and between suicide risk factors and suicide attempts after discharge, and to analyze the necessity of a psychiatrist referral in the elderly patients who intentionally ingested drug but did not make a suicide attempt.
Methods.– Between January 1, 2001 and December 31, 2010, we investigated cases of intentional drug ingestion in patients greater than 65 years of age who visited emergency department of Kyung Hee University Hospital. We divided the patients into two groups – a suicide attempt group and a non-suicide attempt group. The difference between suicide risk factors of the two groups was investigated prospectively. Among the risk factors for suicide, we determined whether psychiatric diagnosis was highly associated with suicide and whether it was an influential factor in suicide attempts after discharge. SPSS version 13.0 was used for statistical analysis. Chi-square, paired sample *t*-test, and Fisher's exact test were performed, and a $P < 0.05$ was considered to be statistically significant.
Results.– There were no significant differences in suicide risk factors between the two groups ($P > 0.05$). The elderly patients who did not attempt suicide who had a psychiatric history associated with suicide attempts, who had previous suicide attempts, and who lived alone, may have psychiatric disorders associated with suicide or suicide attempt after discharge ($P < 0.05$).
Conclusion.– All elderly patients who intentionally ingested drugs should be given a psychiatrist referral, even if the patients did not attempt suicide. In particular, the psychiatric referral should be made when the elderly patient has risk factors such as a psychiatric history associated with suicide attempts, previous suicide attempts, and living alone.

PC-126

Undiagnosed cognitive decline in nursing homes

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Objectives.– Study the prevalence of undiagnosed cognitive decline in the residential environment, we analyzed

demographic, clinical, functional and mental variables associated.
Methods.– Transversal study on a population of 505 elderly persons institutionalized in 2011 in 7 nursing homes in Asturias. Sociodemographic, clinical, functional and mental variables were collected through a Memorandum of predefined study. Cognitive decline was defined with Minimental state Examination.
Results.– Five hundred and five elderly were included in the study (88.3 + 7.3 years, 67.7% women, 6.2 + 3.4 previous pathologys and 6.33 + 3.2 prescripted drugs, scores on the Barthel Index 55.1 + 35.8, on the MMSE 17.4 + 10.7). Sixty-five percent of subjects had MMSE < 24, of those 64% had a previous diagnosis of dementia. Factors associated with undiagnosed cognitive decline were Barthel Index (53.6 + 36.9 in undiagnosed and 39.1 + 32.2; $P < 0.05$). Patients diagnosed of depression, cerebrovascular dissease and delirium were undiagnosed cognitive decline more frecuently. Undiagnosed of cognitive decline in patients with depression 41% vs 32% in no depression; in patients with antecedents of cerebrovascular disease 45% vs 31%; in patients with delirium 38% vs 21%; $P < 0.05$).
Conclusions.– For our population study, 36% of subjects with MMSE under 24, were undiagnosed cognitive decline. Barthel index and diagnosis of depression, cerebrovascular disease and delirium are associated with undiagnosed cognitive decline.

PC-127
My father is going crazy, what is the problem?

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Introduction.– Subacute Care Geriatric Units is a new postacute assistance level focus on medical control, interdisciplinary care and rehabilitation in fragyle and geriatric in-patients with hight prevalence of geriatric syndroms and comorbidity.
Objective.– To evaluate characteristics and delirium variables in elderly in-patients in a Subacute Care Geriatric Unit.
Material and methods.– Retrospective study of a cohort of in-patients in a Subacute Care Geriatric Unit from July 2008 till the end of december 2011. Bivariate analysis of demography, comorbidity (measured by Charlson Index), cognitive status (Pfeiffer Test), social status (Gijón Index), functional status prior to acute illness, at admission and at discharge (Barthel Index, Lawton and Brody) and functional recovery variables (functional income, efficiency and modified Heinemann Index) if appearance of delirium or not.
Results.– Five hundred and twenty-four in-patiens were evaluated (44% men, 82.5 ED 8.5 years old), 204 (38.9%) with delirium during the acute illness.
Patiens with delirium were older (84.7 ED 6.2 vs 81 ED 9.3 years old), with longer average of stay in Acute wards (17.2 ED 18.1 vs 11 ED 9.3 days), worse functional status prior to acute illness (Lawton 1.4 ED 2.2 vs 3.7 ED 3.1; Barthel 61.2 ED 28.4 vs 74 ED 27.4) at admission (22.4 ED 20 vs 34.9 ED 22.7), at discharge (50 ED 27.4 vs 63.5 ED 28.7), cognitive status (Pfeiffer 6.3 ED 2.7 vs 2.8 Ec 2.8) and social status (Gijón 8.5 ED 2.4 vs 7.9 ED 2.6). No relation with Charlson Index was founded.
They came back their previous ubication less than the others patients (38.4% vs 61.6%) although they needed similar social intervention (64.5%): to their houses 57.8%, to Intermediate Care Unit 5.4%, to Long-Term Care Unit 3.9%, 28.4% to nursing homes and 12.1% deceased.
Work of Interdisciplinary Team got a functional recovery similar than the patients with no delirium (functional income: 27 vs 27; efficiency 2.3 vs 2.2; modified Heinemann Index: 80% vs 83%).
Conclusions.– Patients with delirium got longer average of stay and highter mortality and institutionalization.
Following treatment in Subacute Care Geriatric Unit would get functional and cognitive income in elderly disabled patients with delirium.

PC-128
Knowledge of nursing staff on postoperative delirium among elderly inpatients: Results of a preliminary questionnaire survey

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Background.– Postoperative delirium is common in the elderly and is associated with poor outcome including surgical complications, increased length of stay, nursing home placement and death. However, delirium diagnosis is often missed or delayed in elderly inpatients, since symptoms are acute, fluctuating and potentially misleading. Although nursing staff are at the front line, data are lacking regarding their knowledge about postoperative delirium management and its diagnosis in elderly. We present here results of a questionnaire survey aiming to explore nursing staff knowledge about postoperative delirium in the elderly.
Methods.– We developed a questionnaire exploring symptoms, risk factors, nurse prevention and management through an interdisciplinary collaboration. Awareness about validated diagnosis tools including the Confusion Assessment Method (CAM) was tested. The questionnaire was distributed to 115 nurses and nurse-assistants in two surgical wards and one surgical intensive care unit in 3 teaching hospitals in France.
Results.– Sixty-one questionnaires (53%) were completed by 42 nurses and 19 nurse-assistants (mean of professional experience: 9.4 ± 8.6 years). Only 14 (23%) of the respondents had been specifically trained on postoperative delirium in the elderly. Among symptoms knowledge, disorientation (100%) and incoherent speech (97%) were frequently quoted. However, acute onset (59%) and fluctuation symptoms (40%) were frequently ignored. Hypoactive form was mostly unknown (56%). Concerning risk factors, dehydration, use of physical restraints and drugs were frequently mentioned whereas fecaloma, urinary retention and infection were rarely mentioned. Main prevention measures were globally well known, e.g. patient reorientation with calendar and o'clock and patient communication. Conversely, management knowledge was less accurate, e.g. patient isolation (7%) and geriatric collaboration (5%). Finally, no respondent knew and used the CAM diagnostic algorithm.
Conclusion.– Knowledge of surveyed nursing staff on delirium management among elderly postoperative patients is globally poor. Considering our results, nursing staff training is needed to focus on diagnosis, particularly the hypoactive form, management of delirium and the benefits from the geriatric collaboration. Questions of our questionnaire will be refined and the new version will be used within a randomized trial currently assessing the impact of a multifaceted delirium prevention program.

Nutrition 1/*Nutrición 1*

PC-129
NutritionDay in a geriatric unit

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Introduction.– NutritionDay, a multinational one-day cross-sectional survey of nutritional factors and food intake in hospitalized

patients, has been started by ESPEN since 2006. This study aimed to raise awareness of malnutrition in our geriatric unit and to increase our knowledge on the nutritional status of these patients compared to others of the same type.
Methods.– The 26 patients admitted in our geriatric unit on January 21, 2010 were registered for NutritionDay 2010. The final unit report, including our data, was analyzed retrospectively.
Results.– Our final unit report, compared with other 43 geriatric units (total 824 patients), showed the following.
The mean age was 88 years versus 84 years, the BMI was 27.1 versus 24.4, there was a higher comorbidity in our patients, the readmission rate was 11.5% versus 5.34%, the mortality rate was 11.5% versus 5.83%, the average stay was 16 days versus 25 days, and the nutrition therapies followed were: enteral nutrition 7.6% versus 11.4%, parenteral nutrition 0% versus 4.25%, special diets 3.8% versus 17.1%, protein supplementation 23.1% versus 24%.
Conclusions.– Our patients have a higher mean age and greater comorbidity. The divergence of nutritional support is clearly visible in the higher rate of readmission and the higher rate of mortality found in our unit.

PC-130

Presence of malnutrition and risk of malnutrition in institutionalized elderly with dementia according to the type and deterioration stage

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Introduction.– Early detection of malnutrition's risk and malnutrition is important to allow targeted nutritional intervention and should be a key component of the geriatric assessment.
Aim.– The aim of this study was to assess the nutritional status in institutionalized demented patients, according to the type of dementia and to their deterioration stage.
Methods.– A cross-sectional study with a sample of 83 older patients, institutionalized, and with moderate-severe dementia was designed. Nutritional screening was determined by the original form of Mini Nutritional Assessment test (MNA). Antrhopometric measurements and body composition were also used in nutritional assessment. Cognitive and functional impairment of the patients were established by GDS (Global Deterioration Scale) and FAST (Functional Assessment Stating) scales. Results were analized by Chi-square test, ANOVA or Kruskal-Wallis test and Scheffé post-hoc analysis. Significance level was reached at $P < 0.05$.
Results.– BMI indicated that 21% of the subjects were on risk of malnutrition and 14.5% were malnourished. In contrast, MNA showed that 56.6% were on risk of malnutrition and 14.5% were malnourished. No differences in MNA and nutritional assessment between types of dementia were found. Results according to GDS/FAST stage are shown in the following table.

Variables	GDS/FAST			
	GDS 5 ($n=14$)	GDS 6 ($n=28$)	GDS 7 FAST $<7c$ ($n=27$)	GDS 7 FAST $\geq 7c$ ($n=14$)
BMI (kg/m^2)	25.81 (4.46)[b,d]	22.72 (4.16)[a,c]	23.29 (3.94)[b,d]	20.16 (3.14)[a,c]
MNA	20.75 (1.82)[b,c,d]	18.09 (3.27)[a,c,d]	16.33 (2.65)[a,b]	14.89 (2.71)[a,b]
CC (cm)	44.31 (5.56)[c,d]	40.54 (6.43)	39.86 (6.62)[a]	37.37 (6.74)[a]
FM (%)	34.27 (8.53)	30.87 (9.25)	32.70 (8.55)	29.74 (6.75)

BMI: body mass index; CC: calf circumference; FM: fat mass. Results are expressed as mean (SD).
[a]$P < 0.05$ vs GDS 5.
[b]$P < 0.05$ vs GDS 6.
[c]$P < 0.05$ vs GDS 7/FAST $< 7c$.
[d]$P < 0.05$ vs GDS 7/FAST[3]7c.
Conclusion.– The presence of malnutrition is greater in subjects with deeper cognitive and functional impairment, and it's independent of the type of dementia.

PC-131

Gastrostomy in geriatric patients in Toledo, Spain

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The gastrostomy is a technique used for more than 20 years. Previous studies focus their attention in specific populations, so little is known about the individuals who have this procedure done.
Objectives and methods.– To know the pathologies that indicate the performance of a gastrostomy in geriatric patients in The Hospital Complex of Toledo, Spain. This is a retrospective study in which we included individuals 65 years of age and older who underwent gastrostomy and percutaneous gastroyeyunostomy performed by intervention radiology between 2003 and 2007. The data collected included age, sex, pathology that indicated the gastrostomy, survival after the procedure was done, nutritional status, cardiovascular risk factors, atrial fibrillation, infections after the procedure, and geriatric evaluation.
Results.– From a total of 125 patients, 92 had enough information and were included in the study. Fifty-seven percent were women and 43% men. Average age was 82. Pathologies that indicated the use of gastrostomy were neurological disorders like dementia 43.01% and stroke 33.33%. Patients survived an average of 391.73 days after the procedure was done. 38.27% of patients survived less than 60 days and 21% less than 30 days. Albumin was the most affected indicator of malnutrition (2.93 ± 0.59 g/dl). Thierteen percent of patients had atrial fibrillation. Respiratory infections were the most common (52.17%), followed by urinary and gastrointestinal infections. 86.6% of patients were cognitively impaired and 95.65% were dependent to activities of daily living.
Conclusions.– Pathologies that indicated a gastrostomy were similar to other studies. After adjusting to age, cognitive impairment and place of follow up results show adequate survival. Future studies should aim to know the quality of life of demented patients and their families after the gastrostomy is done to improve goals of management.

PC-132

Factors related to nutritional status at admission for a community assessment and rehabilitation intervention after acute illness

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Introduction.– Assessment and intervention on nutritional status of older patients after acute illness is an important issue in post acute care. The aim of this study was to analyse the nutritional status of patients admitted for a community assessment and

rehabilitation intervention after acute illness and to identify factors from Comprehensive Geriatric Assessment (CGA) at admission related to abnormal nutritional status.
Methods.– We analysed the nutritional status of older patients in need of CGA and rehabilitation in the community after acute illness, consecutively admitted through 12 months. Mini-Nutritional Assessment (MNA®) at admission defined 3 nutritional groups: MNA < 17 malnourished; MNA 17–23.5 risk of malnutrition; MNA > 23.5 satisfactory nutritional status. CGA at admission included: age, gender, referral from hospital care or Primary Care, main diagnostic group, previous functional status and functional status at admission – measured by Lawton Index (LI) and Barthel Index (BI) –, MMSE Folstein at admission, Charlson Index and identification of prevalent geriatric conditions: mobility disorder, pressure ulcers, dementia, delirium, falls, incontinence, polifarmacy, constipation and sensory disorders.
Results.– One hundred and twenty-one patients were admitted (age 84 ± 7.0 years; 68% were female; 77% were discharged from a hospital acute unit. Main diagnostic groups were orthopaedic 37%, medical or surgical condition 36%, dementia-related condition 14% and stroke 13). MNA showed: 41.5% malnutrition, 46% risk of malnutrition and 12.5% satisfactory nutritional status. CGA significant factors for the nutritional groups were: previous LI $.9 \pm 1.4$; 3.5 ± 3.1; 4.1 ± 2.8; $P < 0.01$), previous BI (58.7 ± 30.5; 81.5 ± 19.8; 85.8 ± 19.3; $P < 0.01$), LI at admission (0.3 ± 0.7; 1.4 ± 1.4; 1.5 ± 1.2; $P < 0.01$), BI at admission (25.3 ± 21.9; 53.4 ± 28.5; 60.7 ± 19.4; $P < 0.01$), MMSE at admission (14.6 ± 9.3; 20.1 ± 6.9; 23.0 ± 4.9; $P < 0.01$), number of geriatric conditions (5.9 ± 1.7; 4.3 ± 1.7; 3.8 ± 1.7; $P < 0.01$), and presence of mobility disorder (48%; 11%; 0%; $P < 0.01$), pressure scores (40%; 16%; 20%; P: 0.02), dementia (48%; 27%; 13%; P: 0.01) and delirium (26%; 12%; 0%; P: 0.03).
Conclusions.– Malnutrition and risk of malnutrition were frequent at admission for a community postacute intervention. Functional and cognitive factors, number of geriatric conditions and the presence of mobility disorder, pressure ulcer, dementia and delirium were associated with abnormal nutritional status. To define specific protocols for these conditions could be useful to improve nutritional status during the community intervention.

PC-133

Depression – malnutrition-risk relationship in geriatric home residents

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Aim.– To study the relationship between malnutrition-risk and depression in a population of geriatric home residents.
Methods.– This research was carried out over a group of 181 elderly residents at the "Residencia de Mayores Caja Cantabria-Ecoplar de Santander".
Exclusion criteria: diseases that affect nutrition (cirrhosis, hepatic function, malabsorption...), cognitive impairment (MMSE < 23), tumours and psychosis. A sample of 68 subjects remained after this selection.
Data from clinical records (pathologies and interventions) and 4 assessment indexes were used: MMSE (Mini Mental State Examination); MNA (Mini Nutritional Assessment); GDS (Yesavage's Geriatric Depression Scale); and, Barthel's Index.
Results.–

	No depression (GDS ≤ 5) (%)	Depression (GDS > 5) (%)
Sample	55.8	44.11
Sex		
Females	78.94	66.66
Males	21.05	33.33
No. pathologies	$> 4 = 76.31$	$> 4 = 70$
	$\leq 4 = 23.68$	$\leq 4 = 30$
No. medicines	$\geq 3 = 84.21$	$\geq 3 = 86.66$
	$< 3 = 15.78$	$< 3 = 13.33$
Barthel		
Dependent	34.21	46.66
Independent	65.78	53.33
MNA	$< 24 = 52.63$	$< 24 = 73.33$
	$\geq 24 = 47.36$	$\geq 24 = 26.66$

The occurrence of malnutrition in depressed subjects is 73.33%.
The age range where the highest rate of depression has been found is between 80 and 89 years (46.66%).
The majority of the elderly subjects take at least 3 medicines, with little differences between depressed and not depressed (86.66% and 84.21% respectively).
Multiple pathologies appear more frequently in not depressed individuals (76.31%) than in depressed ones (70.00%).
The rate of subjects with a MNA lower than 24 is higher in elderlies with depression (73.33%) than in those without depression (52.63%).
The risk of malnutrition in geriatric home residents with depression is significantly different from the same risk in subjects without depression, both in males and females. The Chi^2-test results ($\alpha < 0.05$) were 0.002 for female and 0.006 for male.
The t-student test was used to check for possible differences in GDS and MNA between male and female populations ($\alpha < 0.05$). Results evidenced no significant differences between groups (GDS, $P = 0.13$; MNA, $P = 0.11$).
Conclusion.– It appears there is a association between malnutrition risk and depression in the analysed population.

PC-134

Relationship between appetite and postprandial gastrointestinal hormonal response and gastric and gallbladder emptying. New contributions on the physiopathology of anorexia of ageing

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Introduction.– Anorexia of ageing (AA) is a highly prevalent clinical condition and has severe consequences. Appetite and satiety sensations are determined in the hypothalamus and are regulated by several peripheral signals. Ghrelin, CCK, insulin and other gastrointestinal peptides have a central function stimulating and inhibiting appetite but also an effect on gastrointestinal motility.
Aim.– To determine if alterations in the postprandial response of gastrointestinal hormones and motility can be responsible for the anorexia of ageing.
Methods.– Three groups of subjects were assessed and compared: (A) old (> 70 years) and frail subjects, (B) old (> 70 years) but not frail and (C) young adults (30–60 years). After a 10 hours fasting night, all subjects were offered a standard liquid breakfast (200 ml with 400 Kcal). Appetite (by VAS), ghrelin, CCK, insulin and glucose

plasma concentration, gastric emptying (by ultrasound scanning and the Paracetamol test) and gallbladder emptying (by ultrasound scanning) were assessed before the standard breakfast and 15, 30, 45, 60, 90, 120, 180 and 240 minutes after ingestion.
Results.– Fourteen subjects were recruited in group A (mean age 84 y), 20 in group B (80 y) and 19 in group C (38 y). The 4-hour hunger response pattern was significantly different between all three groups, having the young adults quicker hunger recuperation and the frail significantly less hunger during all period. No major differences were shown between groups neither in gastric emptying nor in gallbladder emptying. However, some signs suggest a more dilated fasting gastric *antrum* and less postprandial compliance in old subjects. No significant differences were observed in overall postprandial ghrelin and insulin response, but elderly subjects showed a higher pick of CCK during the first 15–30 minutes and higher levels of glucose all over the curve.
Conclusions.– Elderly individuals showed less appetite and slower postprandial hunger recuperation, which is neither related with gastric and/or gall-bladder emptying nor ghrelin response. Elderly subjects show a higher pick response of CCK after ingestion and present persistently high values of insulin and glucose after 90 minutes of ingestion that can be related with lower and slower appetite recuperation.

PC-135
Determinants and prevalence of malnutrition among home living geriatric patients

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Introduction.– In former research we showed that 19% of home living geriatric patients suffered from malnutrition. Fifty-one percent were at risk for malnutrition. Aim of this study is to define determinants related to malnutrition.
Methods.– Cross-sectional data from 173 patients was obtained at first hospital visit. Nutritional status was assessed by means of the Mini Nutritional Assessment (MNA < 17 indicating malnutrition; 17–23.5 indicating risk of malnutrition; > 23.5 indicative of satisfactory nutritional status). Possible determinants of malnutrition were categorized into somatic factors (medication use, co morbidity), social factors (children, marital status), psychological factors (Mini Mental State Examination [MMSE] and **G**eriatric **D**epression **S**cale [GDS]) and functional status (**A**ctivities of **D**aily **L**ife (ADL) and **I**nstrumental **A**ctivities of **D**aily **L**ife [IADL]). Both linear regression (with MNA as a dependent parameter) and logistic regression (MNA < 17; MNA ≥ 17) were used to identify determinants of malnutrition. Regression analyses were used with correction for age, gender and education.
Results.– The mean age of the patients was 80 (**S**tandard **D**eviation [SD] 6.6) and 38% were male. Malnourished patient had lower body weight ($P < 0.01$), lower **B**ody **M**ass **I**ndex (BMI) ($P < 0.01$), a lower abdominal circumference (only women, $P = 0.04$). In addition they had worse achievements on the GDS-15 ($P < 0.01$), on the MMSE ($P = 0.02$), on the ADL ($P < 0.01$), and IADL ($P = 0.05$). Simultaneously we observed tendencies for higher age ($P = 0.09$) and lower educational level ($P = 0.06$) (Table 1).

Table 1. Determinants of malnutrition.

	Linear regression	Logistic regression
	Beta (95% CI)	OR (95% CI)
GDS-15	−0.5 (−0.7, −0.3)	1.2 (1.1, 1.4)
MMSE	−2.3 (−3.8, −0.8)	4.3 (1.6, 11.5)
ADL partially independent	−3.1 (−4.9, −1.3)	–
ADL dependent	−4.5 (−6.5, −2.6)	5.1 (2.0, 13.1)
IADL independent	−2.5 (−4.5, −0.6)	–
IADL dependent	−4.2 (−6.3, −2.1)	2.8 (1.2, 6.4)

Conclusion.– Malnutrition within the geriatric patient is associated with cognition, depression and functional status. Therefore in the treatment of malnutrition all these factors should be taken in consideration, not simply the nutritional intake.

PC-136
Study: Prevalence and treatment of the dysphagia

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Objective.– To determine the prevalence and the treatment of dysphagia in the Residencia Sant Andreu de Manresa.
Methodology.– It is a descriptive cross-sectional study, carried out during the months of November and December 2010 on all the residents of the centre, 73 users.
1. Test MECV-V was administered to all the residents. In order to pass the test it was necessary to have 3 glasses of water with different consistencies (1 with water, 1 with consistency of nectar, 1 with consistency of pudding). Place the apparatus to measure the oxygen saturation of the peripheral blood after tasting each consistency. Observe during the test that there is not significant variation.
2. Test MECV-V (register not controlled by the quality committee) is registered individual Clinical History in the centre.
3. It is resisted with the registry of request of diets.
4. Meetings with the direction of the centre.
Necessary material.–
– test MECV-V;
– syringes of 50 cc;
– neutral Thickener;
– 3 glasses;
– apparatus to measure the oxygen saturation of the peripheral blood.
Results.– We found 38 turmix diets asked for.
Sixteen cases of dysphagia have been detected (22%) and these 16 detected cases have turmix diet.
Conclusions.– It is observed that the majority of the turmix diets of the centre are not for the suggestion of dysphagia if not that they are for other reasons, like dementia, personal tastes, difficulties in the mastication...
Gelatines shouldn't be given for problems of dysphagia if not they are to be replaced by water with thickening according to viscosity and the volume recommended in the individualized card of each person. Also it will be registered if the person has dysphagia any requests of diets in the kitchen.
The observation is important and, before the suspicion of dysphagia, to inform to nursing staff and to return to pass the test.

PC-137
Nutritional status prediction in elderly hospitalized patients: The screening form of MNA

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ESPEN guidelines recommend diversified screening tools targeted to different populations, thus MNA is recommended for the elderly.

Initially, the MNA was developed for and validated in relatively healthy elders for assessing nutritional status. Later, a shortened version of the MNA was derived for use as a quick screening tool. A few studies to date have examined the association between the MNA and MNA Screening (S-MNA) scores in elderly hospitalized patients. The purpose of this study was to determine the predictive value of the S-MNA and standard assessment indicators (Barthel Index, albumine and cholesterol) of elderly hospitalized patients on MNA (complet-form).
Methods.– A cross-sectional sample of 45 elderly hospitalized patients (age: 74.26; SD: 11.56) was evaluated with multiple regression analysis using MNA, S-MNA, anthropometric (BMI), functional status (Barthel Index) and biochemical measures (albumine, cholesterol and lymphocytes).
Results.– The total score of S-MNA alone predicts the 92.3% of the variance of total score of MNA (complete form). When analysing each item of screening form of MNA we found that items A, B, C, E and F and Barthel index predict the 85.4% of variance but albumine, cholesterol and lymphocytes don't show statistical signitication.
Conclusion.– The total score of S-MNA is a simply and valid form for detect undernutrition problems in elderly hospitalized patients.

PC-138

Nutritional status and undernutrition in elderly hospitalized patients: The screening form of MNA

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Many elderly hospitalized patients are underweight and undernourished, as a result of a combination of age-related physical, social and psychological factors. The aim of this study was to evaluate nutritional status of hospitalized elderly patients at admission to an intermediate care hospital of Mallorca.
Methods.– We carry out the nutritional assessment using the Screening Mini Nutritional Assessment (S-MNA), clinical parameters (BMI) and biochemical measures (albumina) in a sample of 125 elderdy hospitalized patients (47 males and 78 females).
Results.– Mean age of our sample of elderly was 80.40 years old (SD: 11.33) and the S-MNA scores shows that the 88.0% of them were patients with malnutrition risk and only 12% were well nourished. However, mean of BMI was 27.75 (SD: 6.52) and mean of albumina was 2.91 (SD: 0.43). Pearson correlation analysis shows a positive relationship between the levels of albumina and total score of S-MNA (r: 0.530; $P < 0.0001$), between S-MNA total score and BMI (r: 0.390; $P < 0.0001$) and negative relationship between S-MNA total score and age (r: -0.316; $P < 0.0001$).
Conclusion.– The screening methods will detect undernutrition among many elderly patients in these intermediate care hospital and the S-MNA is more likely to identify risk of developing undernutrition.

PC-139

Prevalence of dysphagia in a neurological rehabilitacion unit

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Oropharyngeal dysphagia is a disorder that presents with swallowing difficulties, which can occur with solids, liquids or saliva. Causes of dysphagia can be due to multiple pathological processes. Complications if left untreated can potentially cause aspiration pneumonia, and respiratory infections due incompetent swallowing mechanism. Malnutrition and/or dehydration as a result of reduced oral intake.
Objective.– To identify the prevalence of dysphagia to liquids in a neurological rehabilitation unit.
Secondary objectives:
– to identify infradiagnosis (patient not previously diagnosed at admission), since this complicates the process of rehabilitation;
– to indentify diagnostic error (patient previously diagnosed although not presented at admission), since this can restrict dietary needs of the pacient.
Method.– A descriptive study performed during 6 months, on a population of 79 patients. Diagnosis of stroke was used as criteria for inclusion, the remainder of patients admitted with another neurological pathology were excluded thus obtaining a sample of 67 patients.
To diagnose dysphagia the MEDV-V (Method of Diagnostic Exploration Volume Viscosity) was performed on all patients on admission to the unit.
Results.– 84.4% of admissions to the unit had criteria to enter the study (67 patients). Of them 37.88% (25 patients) presented with dysphagia to liquids on admission.
Twenty percent presented infradiagnosis on admission. Of the patients admitted with a diagnosis of dysphagia, 17.07% presented with diagnostic error.
With regard to the classification of stroke 84% presented dysphagia whose origin was ischemic, and 16% hemorrhagic. With regard to hemisphere 28% had right-sided affectation and 72% had left-sided affectation.
In respect to gender 56% of male patients presented with dyspaghia and 44% were female. In respect to age 72% of patients had $>$ 70 years, and the remainder 28% were aged between 50 and 70 years of age.
Conclusions.– The development of this study allows us to recognize the high prevalence of dysphagia within our unit. It is apparent that to offer high quality patient care for patients with dysphagia a sound and correct diagnosis is paramount.

PC-140

Insertion of percutaeneous endoscopic gastrostomy tubes in the elderly

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Introduction.– Percutaenous Endoscopic Gastrostomy (PEG) feeding is a widely used method of enteral nutritional support in patients with swallowing difficulties. National Confidential Enquiry into Patient Outcome and Death Report (UK) in 2004 showed a high mortality rate within a month of inserting PEG. Since then local guidelines has been set up for all the PEG referrals. All the referrals are seen by the multidisciplinary team including speech and language therapist, nutrition specialist nurse, consultant geriatrician with special interest in nutrition. Outcomes of PEG insertions are measured locally by doing an audit every 2–3 years.
Method.– Patients who underwent the PEG procedure between September 2006 and November 2009 were identified from the Endoscopy Registry Book. Seventy-three case notes were retrievable and the data was collected and compared with the previous audits done at the same hospital trust (Kings Mill Hospital, Mansfield, UK).
Results.– Stroke and neurological causes were the most common indications for PEG. There were no major complications noted. Consent was obtained in all the patients. Ninety-six of the patients had the prophylactic antibiotics.

The mortality rate in this audit was higher after 3 months and upto 12 months compared to our previous two audits (at 12 months in 2005, in 2006). Forty-three of these deaths were in patients 85 years (mostly respiratory causes in stroke patients). There was only one death in patients 65 years (4.5).Table 1. Cumulative mortality rates following peg insertions in comparison with previous audits.

Project Year	2005		2006		2010	
Sample (n)	57		33		73	
Within 1 week	2	4?	1	3?	4	5?
Within 1 month	9	16?	3	9?	7	10?
Within 3 months	14	25?	6	18?	18	15?
Within 6 months	16	28?	6	18?	23	32?
Within 12 months	18	32?	7	21?	28	38?

Conclusions.– The average ages in the last three audits were 69 years in 2005, 65 years in 2006 and 72 years in 2010. The population in this latest audit is older. We suggest caution when considering the use of PEG feeding in the very elderly. Further work is required to look at co-morbidities in this very aged group to see whether there is a group of the very old who may benefit from PEG feeding.

PC-141

Nutritional-blood-markers and dental status

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Introduction.– It is well documented that the selection of nutritional items is decisively influenced by the dental status. However, there is only little information whether this is also reflected in an individuals nutritional status and consequently in typical nutritional-blood-markers. Hence it was the aim of this clinical study to analyse potential correlations between the dental status and three nutritional-blood-markers in elderly patients. The following null hypothesis was tested: The dental status does not affect the blood-markers (a) folate, (b) albumin and (c) cobalamin.
Method.– In eighty patients (Department of Geriatrics, Bonifatius Hospital Lingen/Ems, Germany; minimum age 60 years) the following parameters were investigated: the blood-markers folate, albumin and cobalamin, the dental status (score 1: no treatment necessary to 4: treatment obligatory) and the Mini Nutritional Assessment (MNA, score 0: normal nutritional status, 1: at risk of malnutrition, 2: malnourished). Additionally a masticatory function test (comminution of a slice of carrot, diameter 2 cm and height 1 cm, chewing time 45 s, score 1: excellent comminution to 6: comminution impossible) was carried out. For statistical analysis (SPSS 17.0) of normally distributed data one-way Anova was used; otherwise a Kruskal-Wallis H-test was applied. Furthermore a Spearman regression for the dental status and the masticatory function test was calculated.
Results.– The mean score (Mean $\pm$ StD) for the dental status was 3.0 ± 0.8 and 0.8 ± 0.6 for the MNA. A significant correlation (Spearman, $P < 0.05$) between dental status and the masticatory function test (3.8 ± 1.6) as well as albumin could be observed. However, there was no correlation between dental status and the MNA, folate (7.0 ± 3.7 ng/ml) or cobalamin (394.9 ± 270.9 pg/ml). Thus only part b of the null hypothesis could be rejected.
Conclusions.– Within the limitations of the study it can be concluded that the dental status in elderly patients reflects itself in some of the tested nutritional-blood-markers. However the question whether the only independent variable is the dental status or which role other variables (e.g. the socioeconomic status) play remains open.

PC-142

How to assess the risk of malnutrition in the elderly?

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Aim.– To identify if Mini Nutritional Assessment Short Form (MNA-SF), Malnutrition Universal Screening Tool (MUST) and Determine your nutritional Health Checklist (DETERMINE) are useful as a proper nutritional screening tool for over 75 years old community-dwelling population.
Method.– It consists on a cross-sectional study. Data was collected from Frailty among Lleida old population survey (FRALLE survey). The analysis on validity criteria was performed by malnutrition indicators: anthropometric parameters (percentage of loss of weight, BMI and calf and brachial circumference) and different geriatric assessment scales (Pfeiffer, CES-D, Katz index and Lawton & Brody index). For the statistical analysis, Pearson correlation was used, accepting a significance level of $P < 0.05$.
Results.– Total sample was 640 individuals. Malnutrition-risk prevalence according to MNA-SF, MUST and DETERMINE was 21.3%, 13% and 36.2% respectively. The MNA-SF correlated on a meaning way with all geriatric assessing scales and most of anthropometric parameters. MUST correlated meaningly with all malnutrition indicators; and DETERMINE did so among geriatric assessment scales.
Conclusions.– The Spanish Society of Parenteral and Enteral Nourishment recommends the use of screening methods for nutritional risk detection and those who are more adequate in each centre. Routine incorporation of this screening at annual exams among people older than 75 years old is important for its detection and posterior intervention, avoiding it from deriving into malnutrition. This study represents the first approach to the confirmation of which of the three scales is the most accurate for nutritional screening among study population. Posterior longitudinal analysis, through FRALLE survey, will allow a most consolidated validation study.

PC-143

Nutritional rehabilitation in nursing home does not end with screening, moreover it begins with that

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Inroduction.– Elderly nursing home residents have high risk of malnutrition. Early interventions to prevent malnutrition may play critical role in malnutrition–mortality correlation. This study aimed to obtain insight into the prevalence of malnutrition in nursing homes in the capital city of Turkey and and the role of undernutrition in predicting the risk for short-term mortality, together with determination of the effect of nutritional support in prevention of mortality.
Methods.– This cross-sectional study was conducted in seven different residential care facilities in Ankara. Individuals Mini Nutritional Testing, bioelectrical impedance analysis method (Tanita) and some anthropometric measurements were taken.

We excluded patients with clinical evidence of acute illness at the time of observation, those with a diagnosis of terminal cancer, end-stage liver or renal disease. Enrolled patients were examined by members of a multidisciplinary team, comprising one geriatrician (medical assessment), dietician (nutritional assessment), and a geriatrics nurse (functional assessment). Mortality rates of patients were evaluated after 18 months.
Results.– The average age of the 535 participants was 79.46 ± 7.22 years. Nutritional assessment revealed that 17% of all elderly suffered from malnutrition and another 57% were at risk of malnutrition. Nutritional support in the treatment of 129 patients, 126 residents (23.6%) were taking an oral supplementation, 3 residents (0.6%) were requiring tube feeding via nasogastric or percutaneous gastrostomy tubes. The mortality rate for all subjects was 22.1% over the 18 months, which was statistically significantly higher in participants with malnutrition.
Conclusions.– We noted a high prevalence of undernutrition and a strong correlation with increased mortality with malnutrition in nursing home residents. Given the negative impact of malnutrition on mortality and morbidity, an emphasis should be placed on an effective nutritional policy in nursing home.

PC-144

Nutrition in the fragile elderly: Advantages of the basic power adapter (ABA)

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Objectives.– Show the changes in the anthropometric data, laboratory and nutritional score scales in the elderly who start Adapted Basic Food in the first three months since its inception.
Material and methods.– Prospective analysis of patients hospitalized in 2011 for residential level with traditional pulverized diet prescription as well as anthropometric, biochemical, nutritional score scales and incidents included in the dining room. It keeps track of these parameters for six months after the introduction of Adaptive Basic Food.
Results.– Seventy-eight residents with crushed diet prescription were analyzed, representing 25.7% of total input. The average age is 84.8 years, 28.2% over 90 years. 66.6% of patients had advanced dementia and 65.38% were totally dependent. Analytical average data at baseline: hematocrit 36.3%, hemoglobin 12 g/dl, protein 6.23 g/dl, Fe 51.5, cholesterol 180 mg/dl and triglycerides 93.9 mg/dl.
Analytical average data three months after: hematocrit 37.3%, hemoglobin 12 g/dl, protein 6.15 g/dl, Fe 56.3, cholesterol 167 mg/dl and triglycerides 92.3 mg/dl.
MNA scale score at the beginning: 67.64% high risk, 19.23% malnutrition and 12.8% satisfactory level.
The MNA scale score after three months: 76.9% high risk, 5.12% malnutrition and 17.9% satisfactory.
As for the previous BMI average is of 23.5 and 23.2 after three months.
We found a decrease in the incidence of rejection or not pulverized diet ration intake. During these months, 8.9% of the patients died and 6.4% were hospitalized.
Conclusions.– 1. There is a strong association between advanced dementia and total functional dependence, changes being necessary in the texture of the diet. 2. Food very well tolerated with a variety of flavors decrease the high number of incidents in the dining room. 3. Improved analytical data, anthropometric and nutritional scale scores at three months of onset. 4. BMI decreased maintaining normal weight.

PC-145

Validation of the mini nutritional assessment in older adults with intellectual disabilities

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Introduction.– Malnutrition is a frequent disorder, associated with increased morbidity and mortality. Therefore it is important to detect malnutrition in an early stage. The Mini Nutritional Assessment (MNA) is a short and easily administered screening tool for malnutrition. It is considered to be a gold standard for ambulatory living ageing people and those living in long-term care facilities. In this study we investigated its validity in older adults with intellectual disabilities (ID).
Method.– After consulting experts working in the field of nutrition or care for people with ID, we developed a gold standard for malnutrition that could easily be used in practice for people with ID. It consists of five variables: body mass index (BMI), serum haemoglobin, serum albumin, fat free mass (calculated using the sum of four skinfolds) and grip strength. For 547 ageing people with ID (50 years and over), construct and criterion validity were calculated. Construct validity was studied by determining the correlation between the MNA results of the participants and their scores on the separate variables of the gold standard. Criterion validity was studied by comparing the results of the MNA with the gold standard itself.
Results.– Pearson's correlation coefficients were all low, varying between 0.11 and 0.38, but significant. Sensitivity was 35.7% (95% confidence interval: 12.6–64.9%) and specificity was 97.6% (95% confidence interval: 95.9–98.7%).
Conclusion.– We concluded that the MNA is not valid for use in people with ID at this moment. Further research on cut-off scores is recommended. Modifying the MNA to people with ID may be needed before it can be implemented in medical care for people with ID.

PC-146

The detection of the most frequent nursing diagnoses related to the nutritional-metabolic pattern of those aged eighty or older hospitalized in the internal medicine unit

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Objectives.– 1. To determine which of the following nursing diagnoses related to the nutritional-metabolic pattern are the most common among those aged eighty or older admitted into our unit:
– feeding self-care deficit;
– impaired swallowing;
– imbalanced nutrition: less than body requirements;
– risk for fluid volume deficit.
2. To define the most appropriate nursing interventions related to these diagnoses.
Methodology.– We have performed a descriptive and cross-over study over a period of 3 months, on 61 patients aged 80 or older. They were hospitalised in the internal medicine unit with 41 beds. The patients were assigned to the services of Geriatrics, Pneumology, Neurology, Endocrinology, Gastroenterology, Nephrology, Oncology and Hematology. Within the first 24 hours we rated these patients on validated scales to identify the nursing diagnoses mentioned. It has not been possible to directly apply the rating scales to those patients with severely impaired cognitive conditions. Instead, the caregiver was the main source of information in these cases.

The scales are: Mini Nutritional Assessment (MNA). Assessment of activities of daily living-index Katz. Water Test Method of clinical examination volume-viscosity (MECV-V). After all we have identified the appropriate nursing interventions.
Results.– Fifty-two percent women and 48% men compose the sample. Imbalanced nutrition: 37% are safe, 17% at risk of malnutrition and 46% are are suffering from malnutrition. Feeding self-care deficit: 27% have a severe disability 34% have a moderate disability, 24% have a mild disability and 15% are without a disability.
Impaired swallowing: 31% positive result and 69% negative result. Within the positive results 58% are men and 42% women, in the case of negative results 36% are male and 64% female.
Conclusion.– We deduce that the diagnosis of "Imbalanced nutrition: less than body requirements" is the most common.
In a significant proportion of patients there is also dysphagia, and feeding self-care deficit which entails developing a wide range of care and attention by the nursing staff, and the nutritional counselling service.

PC-147

Comparison of four nutritional screening tools in hospitalized elderly turkish patients. Which can be practical?

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Introduction.– The prevalance of malnutrition at the hospitals is high. There is no gold standard to identify nutritional risk at the hospitals for the geriatric population. The aim of this study was to evaluate nutritional risk in hospitalized elderly patients using Nutritional Risk Screening–2002 (NRS), Mulnitrition Universal Screening Tool (MUST), Mini Nutritional Assessment Short-Form (MNA-SF) and revised MNA-SF (MNA(R)-SF) and to evaluate their relationship with albumin, C-reactive protein levels and length of hospital stay (LOS).
Method.– All the $\geq$ 65-year-old patients hospitalized for at least one week in Internal Medicine and Cardiology Department from January 1st, 2011 to April 15th, 2011 were enrolled in the study. Laboratory results were determined from hospital records retrospectively. Hospitalization and discharge times were noted. Each patient's nutritional status was assessed within the first 24 hours after admission and after 1 week of hospitalization with the four nutritional secreening tools. For MNA(R)-SF which includes calf circumference (CC) substituted for Body Mass Index (BMI) and MNA-SF; points $\geq$ 8–11 $\geq$ were determined as at risk and points $\leq$ 7 were as malnourished.
Results.– Fifty (26 female and 24 male) $\geq$ 65-year-old patients were enrolled in the study. Mean age was 72.72 $\pm$ 6.2 years. Patients with normal nutritional status, at risk of malnutrition and malnourished according to MNA-SF and MNA(R)-SF was 18%, 52%, 30% and 14%, 58%, 28% respectively. The risk of the patients with MUST was low in 46%, medium in 36% and high in 18% of all. With NRS 38% of the patients had scores $<$ 3 and 62% had scores $\geq$ 3. There was significant association with MNA-SF and MNA(R)-SF (κ = 0.898, P = 0.0001); between MUST and NRS (P = 0.0001) and between NRS and MNA(R)-SF ($P < 0.05$).
Conclusions.– The prevalence of nutritional risk was high with all the tools in hospitalized patients. Because of its association with MNA-SF and NRS, MNA(R)-SF can be used for those whose BMI cannot be calculated. To show the association of LOS with the nutritional risk screening tools, longer term studies are needed.
Partially reported at Academic 2011 Geriatrics Congress, Antalya, Turkey.

PC-148

Correlations of bioimpedance spectroscopy with nutrition and functioning in nursing home residents

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Introduction.– Measurement of muscle health in nursing home residents prone to sarcopenia and cachexia is challenging. Bioimpedance analysis is a portable alternative to measure lean body mass (LBM), but it requires population specific algorithms. However, the vectors of bioimpedance, resistance (R) and reactance, have been recently proposed as reproducible measures of muscle function. In addition to the single frequency vector analysis bioimpedance spectroscopy (BIS) allows the measurement of intracellular resistance (Ri). The correlations of LBM, R, and Ri with nutritional status and functioning were investigated in frail older nursing home residents.
Methods.– The muscle health (body composition, muscle strength, and muscle performance) of participating residents of two units of a municipal nursing home (n = 106, 79%) was evaluated. Nutritional status was evaluated by mini nutritional assessment (MNA) and complete data from the Resident Assessment Instrument was collected. Whole body and calf BIS was performed with a single channel, tetra polar device (SFB7, ImpediMed, Ltd.) that scans 256 frequencies between 4 kHz and 1000 kHz. The resistance values were related to height (H) or calf length (L) and square root transformations were used to calculate the bivariate correlations.
Results.– Majority of the participants (age 83 $\pm$ 8 years, 75% women) required assistance in their activities of daily living (ADL) and/or suffered from cognitive impairment. Both whole body Ri/H and calf Ri/L correlated with MNA (r = $-$0.423, $P < 0.001$ vs. r = $-$0.610, $P < 0.001$), ADL (0.194, P = 0.066 vs. 0.458, $P < 0.001$), knee extension (r = $-$0.411, P = 0.001 vs. $-$0.365, P = 0.005), and hand grip strength (r = $-$0.566, $P < 0.001$ vs. r = $-$0.483, $P < 0.001$). This was also true for whole body R/H, calf R/L as well as LBM, with a minor tendency for lower values of R-square. Furthermore, the measurement of muscle strength was impossible in more than third of the participants.
Conclusions.– All the resistance measures correlated surprisingly well with nutritional status, muscle strength and functional status even in these frail older institutionalized patients providing a co-operation independent method to assess muscle health without population specific algorithms.

PC-149

Assessment and sensory preferences with regard to 3 high-protein, high-calorie, fibre-free polymeric diets in elderly people in nursing homes

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Introduction.– Deterioration in the senses of taste and smell is a contributory factor in lower food intake in the elderly, with the consequent involuntary weight loss, malnutrition, immune system depression and deterioration in health. In this context, acceptance of the organoleptic characteristics of nutritional products is key to promoting adherence.
Objective.– The objective of this study is to assess and determine preference for 3 complete high-protein ($>$ 20%), high-calorie (1.5–1.6 kcal/ml), fibre-free diets administered to improve nutritional status in the elderly.

Methods.– The study included 52 elderly people in residential care, aged 81.7 ± 11.3 years and with clear capacity to comprehend and give their assessment of the parameters to be evaluated. The study was carried out between October 2010 and January 2011. The study subjects assessed 3 different complete high-protein, high-calorie diets, each in vanilla and chocolate flavours: (1) Resource® HP/HC, Nestlé Healthcare Nutrition; (2) Fresubin® Protein Energy Drink, Fresenius® Kabbi; (3) Fortimel® Extra, Nutricia. The diets to be tested were distributed randomly and the product was not identified. The flavour, smell, colour and texture were scored for each of the diets on a 4-point scale: excellent, good, average and bad. The patients were also asked which of the 3 products they preferred. The responses excellent and good were analysed together, calculating the percentage and the 95% confidence interval (95% CI) for the preference.
Results.– In both flavours, Resource® HP/HC was preferred to the other two products: vanilla was preferred by 48.1% of the patients (95% CI: 3–61.0%); and chocolate by 65.9% (95% CI: 48.6–83.1%). Table1 shows the aspects most highly-rated for each of the products tested.

Table1 Percentage (95% CI) of patients who rate each aspect of the product as excellent or good.

	Vanilla			Chocolate		
	Resource® HP/HC	Fresubin® Protein Energy Drink	Fortimel® Extra	Resource® HP/HC	Fresubin® Protein Energy Drink	Fortimel® Extra
Flavour	82.0 (71.4–92.7)	70.0 (57.3–82.7)	76.0 (64.2–87.8)	88.0 (79.0–97.0)	54.0 (40.2–67.8)	58.8 (45.3–72.3)
Colour	88.0 (79.0–97.0)	86.0 (76.8–95.7)	94.0 (87.4–100)	98.0 (94.1–100)	72.0 (59.6–84.4)	60.0 (46.4–73.6)
Texture	92.0 (84.5–99.5)	70.0 (57.3–82.7)	72.0 (59.6–84.4)	82.0 (71.4–92.7)	64.0 (50.7–77.3)	66.0 (52.9–79.1)
Smell	84.0 (73.9–95.0)	71.4 (57.8–85.1)	68.2 (54.4–81.9)	76.6 (64.5–88.7)	65.9 (51.9–79.9)	65.9 (51.9–79.9)

Conclusions.– Resource® HP/HC (Nestlé Healthcare Nutrition) was the preferred product in this elderly population with regard to most of the parameters assessed when compared to other high-protein, high-calorie, fibre-free diets.

PC-150

Technology and community dwelling older adults

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Introduction.– The UK population is aging with older people aged 65 years and above accounting for 16% of the population. Technology is playing an increasingly important role in healthcare through enhanced communication with healthcare professionals, information access, assistive devices and online patient focus groups. Age has been highlighted as one of the most significant factors influencing whether or not people engage with digital communications. Given the increased role of technology in healthcare we sought to look at the usage and role of technology in case managed community dwelling older adults in Hertsmere, UK.
Method.– A questionnaire based survey and electronic database review of all case managed patients was undertaken between 1st August and 30th September 2010. Data collated included demography, co-morbidity, living circumstances, usage and role of the home phone, mobile phone, radio, television, desktop PC and laptop in relation to healthcare.
Results.– One hundred and fourteen out of 116 patients took part. The majority of the patients were female with over half being 80 years and above. Most patients had access to and frequently used their television (96.5%), landline phone (92%) and radio (90%). Nearly half of patients used their mobile phones regularly whilst only 7.8% and 15.7% had access to a laptop and PC respectively. Of this 25 (21.9%), most were male (14) with the age range being 41–92 years. Seventeen (68%) of patients were aged 80 and above. The majority 13 (52%) used it for accessing information whilst 7 (28%) used it to communicate with family and friends. Seven (28%) patients owned a Laptop/PC and had access to the internet but did not use the internet whilst only 3 (12%) patients used the internet in relation to their healthcare. Interestingly, 2 patients aged 87 and 92 years respectively used the internet for gaming.
Conclusion.– Internet use amongst case managed community dwelling older adults is poor. The majority of patients communicated with healthcare professionals by phone but 68% of older patients with internet access were in their eighties suggesting that there is a place for teaching basic computing and internet access skills to older adults. Further studies on its impact on the healthcare of older adults are needed.

PC-151

Is it possible a new MNA-SF? "The ergonomic MNA-SF"

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Objective.– To propose a new version of the Mini-Nutritional Assessment Short-Form® (MNA-SF), a more ergonomic one, based on the full version using a scale with three categories of classification: normal nutritional status: 12–13, risk of malnutrition: 8–11 and malnutrition: 0–7 points.
Method.– Based on information from 18 questions of the full MNA, we analyze the predictive ability of all possible subsets of 6 questions and by the Forward Selection algorithm obtains the optimal set of 6 questions. The group would have obtained the best predictor on the full test using a multiple regression model.
Results.– The proposed MNA-SF includes questions A, C, D, F, N, O, of the full test. We study and compare in a nursing home (1) (n = 125 patients) and in a multicenter study NOVOMET (2) (n = 404). Adjusted R-squared coefficient is 92.3% (percentage of variability explained by the full test explained by short test) with 10.4% errors in (1) and 82.5% with 19.8% of errors in (2). All statistical tests were performed with SPSS V18 software.
Conclusions.– The new version proposed of MNA-SF, that we call "ergonomic", improves the results compared to the MNA-SF screening (with questions A, B, C, D, E, F or A, B, C, D, E, R). It provides in rapid assessment subjective and functional elements. We think it is more useful and faster into clinical practice by facilitating the collection of information, allowing use by different professional care for elderly patients.

PC-152

MNA-SF new version (2010) and its application in nursing homes

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Objective.– To identify the nutritional risk using the new version of the Mini Nutritional Assessment Short-Form® (MNA-F) and

applying the new threshold for classification into three categories: normal nutritional status: 12–14, risk of malnutrition: 8–11, malnutrition: 0–7 points.
Methods.– We have assessed with MNA-SF 125 patients in "Dr. Villacián nursing home" (Valladolid, Spain). It includes information of 18 full MNA questions with the aim of studying the screening of the 6 questions (A, B, C, D, E, F) compared to the full test and replacing the Body Mass Index (BMI) by the circumference calf (CC) with the questions A, B, C, D, E, R. Adjusted R-squared is the coefficient of determination adjusted for the number of predictors. This coefficient represents the percentage of the variability of the response variable that is explained by the fitted model. The reported values for the adjusted R-squared correspond to the different linear regression models that have been fitted to explore up to what extent each of the short-form versions of the MNA test can predict the whole MNA test (the one of eighteen questions). When the screening is made through the addition of predictors, we fit simple linear regression models, where as when we look for the best ponderation of the sets of six predictors, we fit multiple linear regression models. All statistical analysis have been carried out using the software SPSS V18.
Results.– In case of screening with A, B, C, D, E, F questions the adjusted R-squared is 83.50% (percentage of full test variability explained by the reduced test), demonstrating 20% error in full test. Applying version that replaces BMI by CC (A, B, C, D, E, R) the adjusted-R squared is 75.56% and in the classification the obtained error is 27.2% on the full test.
Conclusions.– New version of MNA-SF is moreuseful in clinical practice thanks to the new added category. It allows to get three ranges of classification and the possibility of substitution of BMI by CC. So the initial version MNA-SF can be replaced. We think to use the combination ABCDER loses predective ability compared to ABCDEF and perhaps a rating of CC in four categories instead of 2 could prevent this loss.

PC-153
To facilitate the identification of nutritional risk: MNA-SF new version (2010) in Novomet study

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Objective.– To identify the nutritional risk using the new version of the Mini-Nutritional Assessment Short-Form® (MNA-SF), (2010) and applying the scale in three categories: normal nutritional status: 12–14, risk of malnutrition: 8–11 and malnutrition: 0–7 points.
Methods.– We analyzed the MNA-SF in 404 people included in NOVOMET study, (multicenter study in the 17 regions of Spain). We have included information of 18 questions in full MNA with the aim of studying the screening of the 6 questions in the full test (A, B, C, D, E, F) and replacing Body Mass Index (BMI) by calf circumference (CC) (questions A, B, C, D, E, R). Adjusted R-squared is the coefficient of determination adjusted for the number of predictors. This coefficient represents the percentage of the variability of the response variable that is explained by the fitted model. The reported values for the adjusted R-squared correspond to the different linear regression models that have been fitted to explore up to what extent each of the short-form versions of the MNA test can predict the whole MNA test (the one of eighteen questions). When the screening is made through the addition of predictors, we fit simple linear regression models, whereas when we look for the best ponderation of the sets of six predictors, we fit multiple linear regression models. All statistical analysis have been carried out using the software SPSS V18.
Results.– The adjusted R-squared is 79.03%, percentage of full-test variability, showing a 20.8% error rate compared to complete test, if applicable version replacing BMI by CC adjusted R -squared is 75.86% and the 25.0% classification error obtained on the full test.
Conclusions.– The new version of MNA-SF is moreuseful in clinical practice thanks to the new added category. It allows to get three ranges of classification and the possibility of substitution of BMI by CC. So the initial version MNA-SF can be replaced. We think to use the combination ABCDER loses predective ability compared to ABCDEF and perhaps a rating of CC in four categories instead of two could prevent this loss.

PC-154
Nutritional risk and frailty: Application of MNA-SF

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Objective.– To determine nutritional risk in older people in nursing home through the new version of the MNA-SF.
Methods.– We evaluated 125 patients in a nursing home with MNA-SF with the first six questions of the full MNA (questions A, B, C, D, E, F) (phase 1), validated as screening for malnutrition and nutritional risk facing full test and the new version MNA-SF 2010, which proposes as a novelty the measurement of calf circumference (CC) when the Body Mass Index (BMI) is not available (Phase 2). Questionnaires are applied in the first quarter of 2011. The results are analyzed with SPSS 18.0.
Results.– We evaluated 125 people aged over 65 years, most of residents diagnosed with dementia (prevalence of dementia over 70%). When we apply the screening version with questions A, B, C, D, E, F and includding the determination of BMI (Phase 1), the distribution of residents is: malnourished (MN) = 24, at risk of malnutrition (RMN) = 61 and normal nutritional status (NNS) = 40. When the determination includes questions A, B, C, D, E, F and the measurement of CC the distribution is MN = 34, MRI = 52 and NNS = 39. When we apply the full test we obtain: MN = 26, MRI and NNS = 76 = 23.
Conclusions.– Different findings suggest that population at nutritional risk (17 to 23.5 points) of the full MNA are in situation of frailty. The MNA-SF includes several risk factors of frailty such as BMI and lack of mobility. We propose the new version of MNA-SF (inludes questions A, B, C, D, E, F) (Phase 1) as appropriate tool to determine frailty in nursing home residents.

Pharmacotherapy 1/*Farmacoterapia 1*

PC-155
Prescribing in the elderly audit

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Background and methods.– This is a prospective audit of 180 patients aged 65 and above in medical wards at Blackpool Victoria hospital.
Summary.– One hundred and eighty patients were on 1367 meds. Average of 7.59 tablets per person.

(1) Documentation of frequency and maximum dose Of PRN medications – Out of 240 PRN meds, 47 meds did not have their frequency and maximum doses documented. This medications include oramorph, paracetamol, cocodamol, tramadol, temazepam, zopiclone, diazepam, metaclopramide, cyclizine, ondansetron, etc.
(2) Generic prescribing – In this audit 94% of the medications were prescribed using generic names and one percent with an acceptable proprietary name. Five percent were prescribed with a non acceptable proprietary name such as acupan, istin, kapake, diclomax, volterol, telfast, monomax, besavar, detrusitol, losec, lipitor, coversyl and imdur.
(3) Documentation of allergy status – Thirty-seven patients did not have their allergy status documented. Forty-two patients had their allergy status recorded by pharmacists. So in 79 out of 180 patients, allergy status was not documented by the admitting trainee.
(4) Paracetamol usage – Paracetamol was prescribed for 54 out of 180 patients. Out of the 54 patients, 4 patients were prescribed more than 4 grams of paracetamol.
(5) Use of long acting oral hypoglycemics – Ffity patients had diabetes and two were on long acting oral hypoglycaemics.
(6) Stroke prophylaxis in atrial fibrillation – Out of the 29 patients, 23 patients were on warfarin. The remaining six patients were not on either warfarin or aspirin.
(7) Appropriate angina prophylaxis – Fifty patients had angina. Forty-seven patients were on antiplatelet agents and one patient was on warfarin. Two patients were not on any antiplatelet agents.
(8) Appropriate use of benzodiazepines – Of the seven patients on benzodiazepines, one patient was on it inappropriately.
Results.–

Indicator	Goal (%)	Sample size	Performance (%)
PRN meds	100	240	80
Generic names	100	1367	94
Allergy status	100	180	53
Paracetamol usage	0	54	7.4
Use of longacting hypoglycaemics	0	50	4
AF prophylaxis	100	29	79
Aspirin in angina	100	50	92
Use of BDZ	100	7	86

Conclusion.– Demonstrates sub-optimal prescribing for elderly patients.
Recommendations.– This audit was presented to the junior doctors and it was decided to have more educational sessions for junior doctors especially foundation doctors. A reaudit was planned at 6 months after the interventions.

PC-156

Is there any adherence to the pharmacological treatment in the elderly population? And what impact has the non-adherence?

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Objectives.– 1. Know the prevalence of non-adherence to pharmacological treatment in the elderly population.
2. Describe sociodemographic characteristics.
3. Define causes of non-adherence and to analyse the non-adherence to the treatment in relation to sociodemographical parameters, diagnosis, comorbidity, number of drugs, medicament administrator.
4. Determine wheter non-adherence is a cause of readmissions.
Material and methods.– Retrospective descriptive random sample of admissions in the last three months of 2010 in geriatric unit.
Exclusion criteria: exitus, institutionalized patients, patients referred to another hospital.
Variables: gender, age, income unit, IB, CRM, Pfeiffer, previous location, diagnosis, comorbidities, number of drugs, polypharmacy, drugs administrator, emergency visits during the post-discharge month and re-admissions.
Completion Morisky-Green-Levine. Non-compliance, analysis of causes of non-adherence.
Statistical analysis SPSS12.0.
Results.– Of 282 patients, 149 were excluded. Of the remaining 133 selected a random sample of 81 patients.
$n = 81$ patients: 71.6% female, mean age 82.79 ($\geq$ 80: 71.4). Income Unit: UGA 42%, RHB 45.7%, Convalescence: 12.3%. IB: $<$ 60: 65.4%, 60–95: 33.3%, 100: 1.2%. CRM: 0: 48.1%, 1: 4.9%, 2: 7.4%, 4: 23.5%, 5: 11.1. Pfeiffer: 0–2 errors: 30.9%, 3–4: 18.5%, 5–7: 8.6%, $\geq$ 8: 22.2%, impossible: 19.8%. Domicile: 55.6% own, 40.7% with children, 3.7% other relatives. Diagnosis: stroke 24.7%, hip fracture16%, immobility syndrome 11.1%, ITU 7.4%, respiratory infection 7.14%, delirium 6.2%. Comorbidities: 56.8% hypertension, 46.9% dementia, 46.9% osteomuscular pathology, 34.6% stroke, 33.3% DM. Polipharmacy: 65.4%, drugs average 6.28. Drug administrator: 28.4% patient, 13.6% spouse, 42% children, 16% caregiver. Test M-G-L in 74.1% of patients. Non-compliance: 18.3%.
Patient/environment-related causes in 6: 4 withdrawal by own decision, 1 dose at a wrong hour, 1 to take no indicated treatment, 1 psychiatric diagnose, 2 physical/cognitive difficulties, 3 low socio-educational level.
Drug-related causes in 9: 7 polypharmacy, 4 multiple dosage, 3 tto effectively invisible in the short-term, 6 long-term treatments, 1 recommendation altering lifestyle.
Statistical signification ($P < 0.05$) between: non-adherence and re-admission, emergency rooms visits, age $\geq$ 80, CRM 5, depression comorbidity.
Conclusions.– The high prevalence of non-compliance, with the consequent risk of re-admission and use of emergency services must undertake us to consider in a near future new strategies to promote medicaction adherence in patients with polypharmacy.

PC-157

The usefulness of the STOPP/START criteria in identifying inappropriate prescribing across both community and hospital settings

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Introduction.– Drug review tools can potentially reduce inappropriate prescribing in older patients, and thereby reduce morbidity, mortality and overuse of health resources. We aimed to determine if the use of an evidence-based validated tool called STOPP (Screening Tool of Older Peoples' Prescriptions)/START (Screening Tool to Alert doctors to Right Treatments) could improve prescribing quality in older patients in community and hospital settings.
Method.– This was a retrospective case notes review of 100 patients over the age of 65 years admitted to a Medical Admission Unit at one teaching hospital. Appropriateness of admission medication (i.e. community prescribing) and discharge medication (i.e. hospital prescribing) was evaluated using the STOPP/START criteria.

Results.– Our results showed that STOPP/START identified a number of omissions and inappropriate medications from both community and hospital care; the majority of omissions were related to cardiovascular and bone health medications. Fifty percent of the patients had inappropriate prescriptions and 19% of them were admitted to hospital as a result of these prescription deficiencies. Nursing home residents had a very high proportion of inappropriate prescribing (> 80% of nursing home residents).
Conclusions.– The STOPP/START tool can identify potential medication omissions and inappropriate prescriptions in both community and hospital settings. Use in the community could potentially reduce hospital admissions related to inappropriate prescribing. The use of the STOPP/START tool by doctors responsible for the care of nursing home residents could result in significant reductions in inappropriate prescribing in this group of patients where errors are the highest. This screening tool could potentially improve patient safety and quality of prescribing in older patients.

PC-158

General and geriatric pharmacology education for health professionals and students: A systematic review of the current status

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Introduction.– Given the reported high rates of medication errors, we hypothesize that the volume and quality of pharmacology education, especially education in geriatric pharmacology, is insufficient. We investigated the current general and geriatric pharmacology education in terms of volume, content and quality in undergraduate and postgraduate health professional's training.
Method.– The databases Pubmed, EMBASE and PsycINFO were searched (01-01-2000 to 01-11-2011). The terms pharmacology and education, including synonyms, were combined. Exclusion criteria: non-human pharmacology, no (pharmacology) education, patients' education, terms used in a different way, not English, German, or Dutch, no description of education. Education was defined as: structured educational activity. Geriatric pharmacology education as: education topic geriatrics, specific geriatric syndromes or problems. We included all articles describing pharmacology education for (student) health professionals in terms of content or quantity. For qualitative grading the Best Evidence Medical Education criteria and the Kirkpatrick model were used.
Results.– We found 5691 articles, 252 articles were included after screening title, abstract, and full text. Thirty-nine articles concerned geriatric pharmacology education. The number of publications in the field of pharmacology education increased 7.5-fold. Most articles described education in the USA (36%) and UK (15%). Education for 11 different health professionals was identified: physicians, pharmacists, nurses, paramedical health professionals, physician assistants, nurse practitioners, and pharmacy, medical, nursing, dental and paramedical students. We found 0.25–4956 hours (median 24 h) of general pharmacology education. Most articles concerned pharmacy ($n = 47$) and medical students ($n = 46$). We found 1–935 hours (median 2.0 h) of geriatric pharmacology education, mostly for physicians ($n = 10$). For nurses, paramedical health professionals, physician assistants, nurse practitioners, dental and paramedical students no articles were found on geriatric pharmacology education. 61.5% of the articles showed, mostly low levels of validation of the education. All articles concerned different education.
Conclusions.– An increasing number of articles on pharmacology education in the last years were found. Few articles in (geriatric) pharmacology education are represented in literature. This study shows that evidence based education on the topic is lacking. It remains unclear if the subject is not taught or the education is just not retrievable in literature and thereby not evidence based.

PC-159

Use of drugs for osteoporosis after a hip fracture: The role of primary care physicians

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Introduction.– Hip fractures are a prevalent and disabling condition in older individuals. Those who survive a hip fracture have a high risk of suffering a second fracture. The use of drugs that may reduce this risk of new fractures and mortality has been recommended, but is still very low in most countries. We explored the role of primary care physicians in the implementation of these recommendations.
Methods.– Prescription at hospital discharge of calcium, vitamin D and antiresorptive drugs (bisphosphonates, strontium, teriparatide) was reviewed for all patients 70 years old or older admitted to the hospital for the surgical treatment of a fall related hip fracture in a 6-month period. Three months later, active prescriptions for each patient in the electronic database of their primary care physicians were reviewed.
Results.– One hundred and sixteen subjects were included, mean age 84.9 years (70–101), 79.8% women. At discharge, only 69% had a prescription for calcium, 67.2% for vitamin D and 4.3% of bisphosphonates. The introduction of bisphosphonates one month after discharge was recommended in the discharge note in all patients, following a policy of the Orthopaedic department of late start of these drugs due to concerns about delayed hip fracture healing. Three months later, only 33.6% of the subjects were still using calcium and vitamin D, and only 12.1% had a prescription for bisphosphonates. No other antiresorptive drugs were used.
Conclusions.– Prescription of drugs for osteoporosis after a hip fracture is suboptimal at hospital discharge, and changes in prescription in the transition of care to primary care physicians do not improve its quality. Interventions to improve prescription should be implemented not only in the hospital, but should also focus on primary care physicians.

PC-160

Use of drugs that increase the risk of falls before and after a hip fracture

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Introduction.– Many drugs have been shown to increase the risk of falls. Hip fracture is a severe complication of falls. We intended to know the characteristics of the use of drugs that increase the risk of falls in patients admitted to the hospital after a fall-related hip fracture.
Methods.– All patients 70 years old or older admitted to the hospital for the surgical treatment of a fall related hip fracture in a 6-month period were analysed. Data on the use of drugs increasing the risk of falls were gathered (cardiovascular, psychotropic, antiparkinsonian, opioid and anticholinergic drugs), both before admission and at discharge.

Results.– One hundred and sixteen subjects were included, mean age 84.9 years (70–101), 79.8% women. Mean number of drugs was 6 (0–15) on admission and 11 (3–21) at discharge. Most of them (90.5%) were using at least one drug that could increase the risk of falls at the time of the hip fracture, and 91.4% were still prescribed at least one of these drugs at discharge. Prevalence of use of many fall risk increasing drugs changed little (cardiovascular drugs, 75.9% before admission and 78.4 at discharge; antidepressants 23.3% and 26.7%; antipsychotics 15.5% and 17.2%), but the use of others decreased or increased significantly (long acting benzodiazepines 12.1% before admission and 6% at discharge; opioids 12.1% and 23.3%; other anticholinergic drugs 13.8% and 25%).
Conclusions.– Most patients who suffer a hip fracture were using drugs that could increase the risk of falls. These drugs were still used on most patients at hospital discharge, which could potentially increase the risk of new falls and fractures. An intervention to reduce the risk of falls after a hip fracture should assess the risks and benefits of these drugs.

PC-161

Optimal use of drugs in a medium-stay geriatric care unit

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Objectives.– Analyze the application of the instrument Medication Appropriate Index (MAI), in the prescription of drugs in a medium-stay geriatric unit, so as to detect potential errors and improvement after interventions.
Methods.– A prospective descriptive longitudinal pilot study of patients admitted for 3 months in a medium-stay rehabilitation and ortogeriatric unit. Demographic, clinical, type of medication and multiple-pharmacy data were collected. The MAI test was performed on all patients admitted and latter it was performed on the group of patients who underwent any pharmacological intervention. The package SPSS10 was used for the statistical analysis.
Results.– Thirty-two patients, mean age 83 years; women 71.9%; average stay 36.1 days; and average medication 9 (95% CI 8–10). Two hundred and seventy-seven prescriptions were analyzed. Sixty-five percent of the prescriptions were fully adequate (MAI = 0). The mean MAI score per patient was 9. Forty-one interventions were performed, taking into account the clinical history and the patient's current drug use. The highest percentage was attributed to duration of treatment, followed by those related to therapeutic duplication and a better therapeutic alternative. The criteria rated as inappropriate by a great majority was that dealing with drug-drug interactions, followed by evaluation of drug effectiveness and dosing instructions. The drugs most associated with medication error and amenable to intervention were those of group B of the ATC (Anatomic Therapeutic Chemical Classification System): drugs acting on blood and blood forming organs: enoxaparin, aspirin, atorvastatin, followed by Group C (antihypertensive drugs). Pharmacological intervention proved effective with a reduction in MAI score: 2.5 ($P < 0.05$).
Conclusions.– Most of the patients admitted are medicated with multiple drugs on admission.
The drugs associated with inappropriate prescribing and subsidiary to group intervention were of group "B" (agents that act on blood and blood forming organs), followed by Group C (antihypertensive agents).
Pharmacological intervention proved effective with a reduction in MAI score = 2.5 ($P < 0.005$).
The MAI (Medication Appropriate Index) has proven an effective tool to assess the appropriate drug prescription in our health system.

PC-162

Study on inappropriate prescribing defined by STOPP C-START criteria in a nursing home

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Objectives.– Determine the prevalence of polypharmacy, suboptimal and inadequate prescribing in institutionalized patients.
Methods.– Collection of demographic, clinical and functional variables from a sample of institutionalized patients by their medical history. Determination of polypharmacy, inappropriate ("Screening Tool for Older Person's Prescriptions" [STOP]) and suboptimal prescription ("Screening Tool to Alert doctors to Right Treatment" [START]).
Results.– One hundred and eight patients were included (84.47 ± 7.48 years old, 66.70% female, 60.89 ± 37.76 Barthel Index and 14.82 ± 11.47 MMSE). The sample presented 3.88 ± 1.88 diseases, treated with 5.78 ± 3.29 drugs, of which 1.26 ± 1.11 corresponds to generic. Polypharmacy, defined as drug prescription more than 5, was detected in 62.26% of our sample. The prevalence of inappropriate prescribing was 58% (9.30% STOPP A, 11.11% STOPP B, 35.20% STOPP C, 0% STOPP D, 0% STOPP E, 2.80% STOPP F, 1.90% STOPP G, 7.40% STOPP H, 1.9% STOPP I and 9.3% STOPP J).
In 20% of the sample existed sub-optimal prescription (7.40% START A, 0.9% START B, 0% START C, 0% START D, 9.30% START E and 2.80% START F). As described above, according to STOPP and START criteria, prescription was appropiated in 33.33% of the patients analyzed.
Conclusions.– Inappropriate prescribing has a high prevalence in institutionalized patients, especially drugs related to nervous central system and gastrointestinal tract; so we are interested in designing a geriatric valuation program focused on improving the rational use of drugs aimed at optimizing the prescription and achieving potential savings by increasing the proportion of generics.

PC-163

Inappropriate prescription in a medium-stay unit of a geriatric hospital

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Objects.– Patients who are discharged from acute hospitals (90.1%) are admitted to our department in order to continue treatment and obtain an improvement of the skills lost, getting an excellent return to their homes. They are characterized by complex treatment. We intend to assess the suitability of polypharmacy and drug treatment of these patients.
Materials.– Registry hack of drug prescriptions of patients ≥ 65 years admitted on 17/03/2011. Descriptives (sex, age, Barthel I at admission, length of stay, primary diagnosis). We analyzed the number of drugs/patient and pharmacological group according to the ATC classification. We highlighted the eight major groups (drug demand or topical medications aren't included). Criteria STOPP/START to identify inappropriate prescriptions, number of patients without a recommended treatment and criteria involved.

Results.– At the day of the study 91 patients were admitted (34 m, 57 w). Mean age 81.6 years. Fifty percent of patients with Barthel I $\leq$ 40. Length of stay 46 d. Main reason for admission: trauma surgery 27%, respiratory failure 18%, post stroke 14% and treatment from infections 7%. Average of drugs/patient 9.7 (3–17). By pharmacological group (descending order, patients [%]): antiacid agents 80 (87.9%); antithrombotic agents 74 (81.3%); analgesics 61 (67.1%); psycholeptics 50 (54.9%); diuretics 45 (49.4%); laxatives 38 (41.7%); drugs for COPD 36 (39.5%); cardiac therapy 32 (35.2%). STOPP criteria showed 50 inappropriate prescriptions (39% of patients). The most frequent: *Drugs that affect adversely those prone to falls* (14) and *Cardiovascular drugs* (12). According to the START criteria 52% of patients lacked any beneficial treatment. The most common: *Metformin with T2DM ± Metabolic Syndrome, in the absence of renal impairment* (16). *Statin in DM if fasting cholesterol > 5.0 mmol/l or additional cardiovascular risk factor(s)* (13). *Aspirin in DM with well controlled BP* (12). *Aspirin or Clopidigrel with a history of coronary, cerebral or peripheral vascular disease in patients of sinus rhythm, where therapy isn't contraindicated* (10). *Warfarin in the presence of chronic AF* (10). *ACE inhibitor in CHF* (10).
Conclusions.– Many patients get benefit from drug treatment of their illnesses. Despite the high number of drugs used should not allow underutilization. Some drugs which are recommended are not used enough in our environment, being debatable the criteria of their administration.

PC-164

Medication reconciliation program in a medium-stay hospital unit

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Objectives.– Use the Medication Reconciliation Tool (CM), to analyze drug prescription in the transition of care, on admission and discharge, and improve patient security by detecting errors and discrepancies.
Methods.– A prospective descriptive longitudinal pilot study of patients admitted for 3 months in a medium stay geriatric unit. Demographic, clinical and medication data were collected. CM was performed in all patients at admission and discharge. Discrepancies, defined as any variation between previous medication and medication scheduled after discharge, were detected. The severity of errors or discrepancies in terms of therapeutic groups and administration via were also defined. The package SPSS15 was used for the statistical analysis.
Results.– Three hundred patients (176 on admission and 124 on discharge). Mean age 83.2 years, 57.6% women, Na drugs / patient: 9.8 ± 3.8. Of 2,718 prescriptions 1,055 discrepancies were found in 58.2% of the patients. At admission there were 46.4%, mostly in group (A): 85% (justified by clinical circumstances of patients or the Pharmaceutical Guide of the Hospital). At discharge although there were fewer discrepancies (23.0%), the type B discrepancies not justified or due to error were greater on discharge (36%) than at admission (15%). Most of the unjustified discrepancies were caused by drug interactions B5 (60%), followed by type B3 (errors in dosage, frequency and via). Factors associated with discrepancies were type B treatment (35% cardiovascular drugs), and via management (oral) $P < 0.001$; but not the number of medications or age. The group of moderate severity, 79.4% at admission and 72.7% at discharge (sedatives, antibiotics, psychotropic drugs via oral) were dominant. Serious discrepancies (oral anticoagulants or intravenous anti-infective drugs) were less.
Conclusions.– Pharmacological unjustified discrepancies are relatively frequent during the transition period in medical care, in our media.
There is a higher probability of unjustified discrepancies in the prescribed treatments for cardiovascular disease by via oral due to the risk of drug interaction.
Most of the discrepancies are concentrated in the group of drugs of moderate theoretical severity.
The reconciliation of the medication should be a strategic goal to improve patient security in our healthcare practice.

PC-165

Underutilization of oral anticoagulation therapy for stroke prevention in a geriatric service

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Background.– Concern over the risk/benefit ratio has led to physician being cautious about the use of anticoagulant therapy in elderly people. Patients over 65 years of age are anticoagulated in less than 50% in all surveys published since 1990.
Objectives.– To evaluate the use of anticoagulation for stroke prevention in geriatrics, internal medicine and cardiology services at a general hospital.
Methods.– This descriptive study enrolled patients discharged from Geriatrics, Internal medicine and Cardiology services during 2009 with diagnosis of permanent atrial fibrillation. Medical records were reviewed to collect baseline, clinical variables, functional status and medications at discharge.
Results.– Five hundred and nineteen patients with atrial fibrillation were recruited (mean age: 82.06 years, SD: 6.4): 56 from cardiology (mean age: 72.77 years, SD: 12.64); 140 from Geriatrics (mean age: 86.04 years, SD: 5.9) and 323 from internal medicine (mean age: 81.94 years, SD: 8.3). Significant differences were found between mean ages for services ($t < 0.001$). Acenocoumarol was used for stroke prevention in 53.3% patients: Cardiology (69.6%); Internal Medicine (55.9%) and Geriatrics (40.7%); comparison for service: Geriatrics vs Internal Medicine ($P = 0.003$), Geriatrics vs Cardiology: ($P = 0.000$) and Internal Medicine vs Cardiology ($P = 0.055$). Antiplatelet agent was used in 36.2% patients, no significant differences were found in the use between services.
Conclusions.– Anticoagulation is underutilized for Geriatrics service while it was a common practice for cardiology service. Future works are needed to establish the effects of age and comorbidity on the association between anticoagulation and medical specialities.

PC-166

Acenocoumarol or aspirin for stroke prevention in an elderly population with atrial fibrillation: complications of treatment

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Background.– Oral anticoagulation is a highly effective procedure in preventing atrial fibrillation-related stroke, but because the oldest patient have both the highest risk for stroke off anticoagulation and the highest risk for hemorrhage on anticoagulation, prescribing anticoagulation in elderly people is a central challenge. Antiplatelets agents such as aspirin provide a more convenient but less effective alternative.

Objectives.– To compare retrospectively hemorrhagic complications and stroke with the treatment for stroke prevention in atrial fibrillation.
Methods.– Retrospective cohort study. Patients discharged from geriatric service with permanent atrial fibrillation between 2008–2009 were recruited. Patients received dose-ajusted acenocoumarol or aspirin 100 mgr. Baseline, clinical variables (Charlson comorbidity index, diabetes), functional status assessed by Barthel Index. Stroke, hemorrhagic complications and death were evaluated one year later.
Results.– Two hundred and eighteen patients aged 70 or over with atrial fibrillation were recruited (mean age: 86.98 years, SD: 5.73; 61.5% female). Barthel $\geq$ 80 (38.4%); cognitive impairment moderate–severe: 47%; polypharmacy: 59% (mean drugs: 6.7); Charlson index $>$ 2: 70%. Treatment for stroke prevention: acenocoumarol 41%, aspirin (45.8%). Complications: there were significantly more stroke with aspirin (20 patients) than with acenocoumarol (5 patients) ($P = 0.01$); There were no significant differences in intracranial, urinary or gastrointestinal hemorrhage between both groups.
Conclusions.– Acenocoumarol was associated with a lower risk of stroke than aspirin. Risk of bleeding did not differ significantly between acenocoumarol and aspirin in this study. These data support the use of anticoagulation in elderly people.

PC-167

Anticholinergic drug use and one-year outcome among elderly people hospitalised via emergency department

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Objective.– To assess the association between anticholinergic drug use and medical outcome among people aged 75 and over, hospitalised in medical ward via emergency department.
Methods.– A prospective multicentre cohort was set up in nine French university hospitals from March 2001 to January 2002. Participants were aged 75 and over, and hospitalised in medical wards via emergency department. Patients were assessed using Comprehensive Geriatric Assessment tools (CGA). The present analysis involved patients for whom there was information on the usual treatments being taken in the 2 weeks before hospitalisation. The drugs were coded according to the ''Anatomical Therapeutic Chemical'' classification. Cox model with and without propensity score matching was used to estimate the association between anticholinergic drug use and medical outcome (one-year institutionalisation and one-year mortality) after adjustment on CGA variables. Institution meant nursing home or long-term care unit.
Results.– Among the 1306 patients of the cohort, there were 1176 for whom information on the usual treatments were available. They were 85 $\pm$ 6 years and mainly women (65%). In all, 144 (12%) patients took at least one drug with anticholinergic effect. Among those, 13 took two drugs with anticholinergic effect. Propensity score matching identified 114 pairs. None of Cox models (with or without matching) identified significant link between anticholinergic drug use and institutionalisation or mortality after adjustment for CGA variables.
Conclusion.– Our results did not prove any significant link between anticholinergic drug use and medical outcome. The elderly, who have multiple comorbidities, complex chronic conditions and are usually receiving polypharmacy, are at increased risk for adverse drug events. These adverse events are often linked to problems that could be preventable such as delirium, depression, falls, cognitive, and functional decline. Regular review of prescriptions would help optimize prescription of psychotropics, but also anticholinergics in the elderly.

PC-168

Mistreatment suspicion prevalence among older people assessed at a geriatric unit

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Aims.– To determine mistreatment suspicion among old people attended at the Emergency Room at Universitari Arnau de Vilanova Hospital of Lleida (Spain), and posteriorly assessed at the Functional Interdisciplinary Geriatric Unit.
Method.– It is a cross-sectional study. Population: 65 years old people or older that went to the Emergency Room at the Hospital. Sample: those assessed at the Geriatric Unit over 8 consecutive months. There were excluded subjects with cognitive impairment and sensorial disorders or alterations. Questionnaire used for mistreatment suspicion detection was the Canadian Task Force and the American Medical Association. An affirmative answer is considered as mistreatment suspicion. Other variables used were sociodemographic and functional state measured by Barthel scale. It was performed a descriptive univariate analysis with frequency distribution, bivariate (Chi-square) to explore the association between categorical variables and mistreatment suspicion, multivariate analysis through logistic regression introducing all those variables with statistical significance at bivariate analysis.
Results.– A total of 127 individuals were assessed, of which 57.5% were women and 42.5% men. 14.1% answered affirmatively to two of the questions. Most frequent mistreatment type was abandonment (83.8%) followed by psychological abuse (43.2%). Variables associated to mistreatment were being woman (OR: 3.1), non-remunerated job previous (OR: 2.4), living alone (OR: 3.0), being single (OR: 6.7) and $<$ 600 € income (OR: 2.6). At the multivariate analysis the fact of being single was the only independent factor associated to mistreatment.
Conclusions.– Observed results are similar to other consulted studies. Reliability of the mistreatment detection scale used was acceptable (Crombach alpha: 0.66); even though, it could not be compared with other studies, because they did not analyse it.
Awakening and sensitization of elderly mistreatment as a common fact is important, and health care staff should seek for their rights and be able to prevent and/or detect those cases.

PC-169

Association between sedative drugs and periodontal infection and dental caries among dentate, home-living elders

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Introduction.– Aim of our study is to assess the association between the use of sedative drugs and periodontal infection and dental caries among home-dwelling elderly people aged 75 years old or older.
Method.– This study is based on a subpopulation of 158 (111 women and 47 men) home-dwelling, dentate, non-smoking elderly people (mean age 79.8 years, SD 3.6) from the Geriatric Multidisciplinary Strategy for the Good Care of the Elderly Study.

The data were collected by an interview and oral clinical examination. Information about total number of drugs was obtained from 121 participants. The sedative load was used as an explanatory variable and Poisson multivariate models were used to analyze relative risk (RR) with 95% confidence intervals (CI).
Results.– After adjusting for confounding factors (age, gender, education, diabetes, rheumatoid diseases), the persons with sedative load (SL) of 1–2, had a decreased likelihood to have teeth with deepened periodontal pockets ($\geq$ 4 mm) (RR: 0.8, CI: 0.5–1.3) compared to participants with no sedative drug. When sedative load was $\geq$ 3, the participant had increased likelihood of having teeth with deepened periodontal pockets (RR: 1.7, CI: 1.1–2.5) compared to participants with no sedative drug. For dental caries, persons with either sedative load of 1–2 or $\geq$ 3 had increased likelihood of having carious teeth (RR: 2, CI: 1.0–4.1 and RR: 2.3, CI: 1.1–4.7, respectively) compared to participants with no sedative drug.
Conclusion.– Patients using multiple sedative drugs simultaneously are at increased risk of having teeth with deepened periodontal pockets and dental caries. This means that more emphasis should be put on these patients' oral hygiene prophylaxis and regularity of dental checkups.

PC-170

Analysis of intravenous lines in an acute geriatric hospital unit: Number, reasons, and types for catheter changes

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Introduction.– Patients admitted to an acute geriatric unit, have pathologies that require venous access for fluids and drugs. They often need to change these venous accesses.
Goals.– 1. To determine the number of changes of venous access needed by patients during their stay, the reasons thereof and types of catheters in place. 2. Reduce the number of repeated venipuncture to improve patient comfort.
Patients and methods.– Sample of 335 patients over a period of three months. The variables analyzed were: mean age, gender, average stay, cognitive impairment, upper limb restraint, medical diagnoses, nursing diagnoses, number and type of intravenous catheters at admission, number of changes during their stay and reasons.
Results.– Main age: 84.9. Male: 128 (83%), female: 207 (62%). Average stay 11.4 days. Cognitive impairment: 122 (36.52%). Upper limbs restraints 58 (17.36%). Group medical diagnoses: respiratory: 130 (38.92%), cardiac 54 (15.86%), ITU: 60 (17.96%), others: 91 (27.24%). Nursing diagnosis: ineffective breathing pattern: 130 (38.92%), impaired cardiac output 54 (15.86%), altered urinary elimination: 60 (17.96%), others: 91 (27.24%). Number of venipuncture on admission: no venoclisis 2 (0.59%), 1: 299 (89.25%), 2: 34 (10.14%). Venipuncture types of IV lines at admission: short peripheral 330 (98.51%), central: 5 (1.49%). Number of changes: 234 (69.85%). Reason: leakage 96 (41.03%), phlebitis 42 (17.95%), pulled out by patient 90 (38.46%), obstructed via 6 (2.56%). Via instituted: peripheral short (Abbocath) 219 (93.60%), via long (venocath) 9 (3.84%), via central 6 (2.56%).
Conclusions.– **1**. There is a high incidence of changes of venous access during their stay. **2**. The most common reason is the leakage, peripheral intravenous being the most used. **3**. It would be desirable to assess the placement of an intravenous precocious long or central line to reduce the number of repeated intravenous punctures in patients with long-term treatment.

PC-171

Usefulness of botulinum toxin in the treatment of refractory urinary symptoms of urinary incontinence in older persons

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Background.– In the last years the use of Botulinum toxin has increased for patients with refractory symptoms due to overactive bladder (neurogenic or idiopathic type). The technique consists in the injection of botulinum toxin by cystoscopy into the detrusor muscle. The duration of the therapeutic effect is about 9 months. The clinical results are good, but with several problems such as urinary retention and urinary tract infections.
Objectives.– To assess the clinical usefulness of the Botulinum toxin in a sample of older persons who suffer from refractory urinary incontinence.
Methods.– Retrospective study performed with older patients (60 or more years) with refractory urinary symptoms, attended in an out-patients Continence's Clinic setting in a Tertiary Hospital. Clinical variables: demographic data; type of incontinence; comorbidity; prior treatment for incontinence; indication to the Botulinum toxin; urodynamic data; dosage of toxin injected; clinical response; need of reinjection of toxin.
Results.– *Sample* 20 patients (14 females; 70%), mean age 75.65 (62–83 years). Comorbidity: five females had previous gynecological surgery; four males had previous transurethral prostatic resection; two females and one male had a previous stroke; two females had Parkinson's disease. Clinical type of incontinence: mixed incontinence (urge with incontinence at cough) 12 cases (60%), and urge 8 cases (40%); main indication was bladder hyperactivity in 18 cases (90%). The great majority (95%) received previously antimuscarinic drugs. Positive clinical response was total in 17 cases (85%). The dosage ranged since 200 to 300 ui in the great majority of cases. There were significant differences between diurnal and nocturnal urinary frequency before treatment versus after treatment ($P < 0.001$). In five cases was necessary to inject a second dosage of botulinum toxin for persistence of the urinary symptoms (25% cases). Only in 1 case we found a pathological postvoid residual volume.
Conclusions.– (1) Botulinum toxin has positive clinical effects in the main urinary symptoms (frequency and nocturia), of older persons with refractory symptoms due mainly to bladder hyperactivity. (2) The side effects are few, but the need for reinjection was considerable. (3) In older persons with refractory urinary symptoms, the injection of botulinum toxin could be a good complementary treatment.

PC-172

Study of intravenous lines in an acute geriatric hospital unit patients with acute cognitive impairment

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Introduction.– Patients Admitted to an Acute Geriatric Unit, need intravenous lines for administration of fluids and drugs. The high incidence of patients with cognitive impairment increases the need for IV lines access changes. Objectives: 1. Determine the incidence of venous access changes in patients with cognitive impairment, and the number of patients who have required mechanical restraint. 2. Which condition requires the greatest number of changes? 3. Source of patients and discharge destination.

Patients and method.– Sample of 335 patients admitted to an Acute Geriatric Unit over a period of 3 months. The variables analyzed were mean age, origin, nursing diagnosis, and cognitive impairment, number of respiratory diseases. And destination on discharge.
Results.– Main age: 84.9. Source: Hospital del Mar, Emergency department 317 (94.62%), Hospital de l'Esperança, emergency department 15 (4.47%), other 3 (0.89%). Nursing.
Diagnosis.– Ineffective breathing pattern 130 (38.92%), impaired cardiac output 54 (15.86%), altered urinary elimination of 60 (17.96%), other 91 (27.24%). Patients with cognitive impairment 122 (36.52%), mechanical containment 58 (17.36%). Average duration of treatment: 13 days. Discharge destination: patient home 160 (14.02%), Nursing home 62 (18.50%), Exitus 47 (14.02%), subacute unit 40 (11.94%), Convalescent Unit 11 (3.28%), Long Stay Unit 10 (2.98%), Acute Hospital 5 (1.98%).
Conclusions.– 1. Patients with respiratory disease have the greatest incidence of IV access changes, due to prolonged treatment. 2. Of the 122 patients with cognitive impairment, 58 needed mechanical restraint. 3. Most patients return to their habitual residence.

PC-173

Analysis of the follow-up of the institutionalized elderly in treatment with digoxin

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Objective.– To evaluate if in the geriatric centers a suitable follow-up of the treatments with digoxin is done.
Method.– Retrospective observational study carried out in two geriatric residences with a total of 286 elderly people. There were checked the clinical histories of the 30 patients treated with digoxin, recording demographic data, the date of plasma digoxin levels after income and origin of the request, plasma levels of digoxin, creatinine clearance and pharmacotherapeutic profile of each resident.
Results.– 10.4% of the residents were treated with digoxin, 87% were women. 93.3% were older than 75 years, emphasizing that 63.3% were overcoming 86 years old. 87% of the residents with digoxin were taking more than 6 medications per day, with an average of 8.3 drugs/patient/day. 23.3% showed creatinine clearance below 50 mL/min. We analyzed 34 plasma digoxin levels, of which only 26.5% were requested as a control from the own center, whereas 73.5% were requested during visits to the emergency service or hospital admissions. The percentage of treated residents, to whom they had never made a single control amounted to 36.6% and in 40% the frequency of monitoring was less than 1/year. 32.3% (11) of the plasma digoxin levels were out of range, 10 cases with plasma levels below 0.8 ng/mL and only 1 case of digitalis toxicity with digoxinemia of 3.6 ng/mL.
Conclusions.– In spite of the many risk factors that present this type of patients (very advanced ages, renal clearance diminished, electrolyte disorders, female sex predominant, risk for drug-drug interactions due to the high rate of polypharmacy), this study shows that the majority of the elderly, once entering the residence, are not performed a regular control of attained. The high percentage of levels of digoxin inappropriate and the numerous risk factors involved, would justify the establishment, at the geriatric residence, of a protocol of periodic monitoring of plasma levels of digoxin.

PC-174

Profile of admitted patients to a psychogeriatrics unit and their drug handling

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Objectives.– To describe the patients' profile admitted to the unit: comorbidity, demographics, geriatric syndroms, functional status, type of dementia, type of behavioral and psychological symptoms (BPSD) and drugs used.
Patient and methods.– Cross-sectional study including patients admitted from November'10 to April'11, with dementia diagnose.
Results.– n = 18. Average age 79.7 years ($\pm$2.09 SD). 72.2% were men. The most prevalent diseases were: both BPH and hypertension, 50%, COPD and previous surgeries, both 44%, cerebrovascular disease 39%, and dyslipidemia and smoking, both 33%. Among the geriatric syndromes highlights polypharmacy 94%, the sensory deprivation and sphincter incontinence, both 67%, and sleep disorders and falls, both also 61%. The average Barthel was 54.72 ($\pm$6.19 SD). The most prevalent types of dementia were: 55.56% cortical degenerative, vascular 27.78%, secondary 11.11% and subcortical 5.56%. The average MMSE was 8.53 ($\pm$2.11 SD) and average of GDS was 5.67 ($\pm$0.69 SD). In qualifying for states, 50% were severe, 38.9% moderate and 11.1% mild. Within the BPSD, 61.1% were behavioral type, and psychological symptoms such as mixed type were presented both with 16.7%. The average number of drugs used per patient was 7.61 ($\pm$3.68 SD). Among the psychotropic drugs used, 89% were antipsychotics, hypnotics 72%, 44% antidepressants and 28% mood stabilizers. In addition, 44% of patients received ACE inhibitors/Memantine.
Conclusions.– Our population has an important cardiovascular comorbidity and polypharmacy. The major type of dementia is degenerative in a severe stage, with a prevalence rate of behavioral symptoms. Antypsychotics were the most commonly types of psychoactive drugs used.

PC-175

Inappropriate prescription on patients admitted to an acute geriatric unit

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Introduction.– STOPP criteria (Screening Tool of Older Person's Potentially Prescriptions) are a tool to detect potentially inadequate pharmacological prescription, and START criteria (Screening Tool to Alert doctors to Right i.e. appropriate, indicated Treatment) detect the omission of well indicated drugs.
Objectives.– To evaluate the quality of the previous medications prescribed on admission in an Acute Geriatric Unit (AGU), using STOPP/START criteria, and determine the association between those and functional, mental and social status, comorbidity, mean stay, number of prescription drugs and discharge destination.
Methods.– STOPP/START criteria were applied on patients admitted in an AGU during 2010 by means of the revision of the hospital discharge reports. Demographic data, main diagnosis, number of prescription drugs, mean stay, Barthel Index, Red Cross Hospital Functional and Mental Scales, Charlson Index (CI) on admission were registered. We studied the correlations between the criteria and the variables included.
Results.– We reviewed 269 hospital discharge reports. The mean age was 86.15 $\pm$ 5.81 years and 63.6% were women. The mean of prescribed drugs was 7.24 $\pm$ 3.33. The mean of fullfilled criteria per patient were 0.82 $\pm$ 1.08 for STOPP and 1.20 $\pm$ 1.26 for START. Forty-eight per cent patient's fullfilled $\geq$1 STOPP criteria, being the most frequent item the prolonged use of neuroleptics like hypnotic for long time (10.4%). Sixty-three per cent patients presented $\geq$1 START

criteria, being the most frequent omission the prescription of ACE inhibitors on chronic congestive heart failure (17.5%). We found a positive correlation between the number of STOPP/START criteria and the number of prescription drugs (R: 0.198 and R: 0.286, respectively, $P < 0.001$ both) and a positive correlation between START criteria and CI score (R: 0.440, $P < 0.001$). The number of inappropriate prescription by STOPP criteria was lower in patients who lived with their family or died. The number of START criteria was greater in those who were taking more drugs and had higher scores in the CI.
Conclusions.– Admitted patients in an AGU presented high polypharmacy. STOPP and START criteria showed a high number of inadequate prescriptions or omissions of well indicated drugs, and both were associated with different characteristics of the patients.

PC-176

Pharmacist' detection of potentially inappropriate medications in older inpatients: A comparison study of french beers' criteria and improved prescribing in the elderly tool

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Introduction.– The Potentially Inappropriate Medications (PIMs) are highly prevalent in elderly and are associated with an increase in mortality, adverse drug reactions and healthcare costs. Various tools including Beers' criteria and Improved Prescribing in the Elderly Tool (IPET) allow PIMs detection. In France, clinical pharmacy activities are developing but hospital pharmacists have not enough time to these activities. The aim of this study was to assess the efficacy of French Beers' criteria (= tool adapted by Laroche and al at French medical practice) and IPET for PIMs detection by hospital pharmacists among older inpatients.
Method.– All patients aged over 75 years and admitted in January and February 2011 at Charpennes hospital (a 230-bed geriatric university teaching hospital) were included. For each patient, PIMs were detected at hospital admission by pharmacists using French Beers' criteria and IPET. Data about patients (age, gender) and PIMs (type, number, time required for tools use) were collected and analysed.
Results.– The mean age of 150 patients (96/150 females) included was 85.9 ± 5.6 years. Among 1140 medications prescribed, 40 PIMs (3.5%) were detected with French Beers' criteria and 15 (1.3%) with IPET ($P < 0.001$). These tools allowed to identify 50 patients (33.3%) with PIMs including 36 patients (24%) with French Beers' criteria and 14 (9.3%) with IPET ($P < 0.001$). The most common class of PIMs detected was psychotropic drugs. Average time per patient required for PIMs detection was 3 ± 3.3 minutes with French Beers' criteria and 2.9 ± 3.2 minutes with IPET ($P = 0.4$). However, global time required for clinical data collection in wards was 62.7 min (8/150 patients) for French Beers' criteria and 250.7 min (46/150 patients) for IPET.
Conclusions.– Considering these results, French Beers' criteria detected more PIMs than IPET. Although IPET seems attractive by its low number of criteria, the time required for its use by pharmacists is as high as that of French Beer's criteria because of more frequent need of clinical data collection in wards. In a French context of clinical pharmacy development, pharmacists need to find the best tool suitable daily practice to gain efficiency, save time and decrease healthcare costs.

PC-177

Analysis of the use of antipsychotics in institutionalized elderly

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Objective.– To determine which types of antipsychotics are used in admitted patients, depending on their most prevalent symptoms and pathologies.
Method.– A descriptive cross-sectional study was carried out, where the pharmacological plans of the patients admitted to 5 SAR centers during a 30-day period were revised. The sample comprises 668 admitted patients (average age = 78.9 years and 62.88% women). The pathology, type of antipsychotic, age and gender were registered for each patient.
Results.– Two hundred and ninety one out of 668 admitted patients (43.56%) were prescribed some type of antipsychotic, of whom 29.55% took typical ones (alone or combined between them), 48.79% took atypical ones (alone or combined between them) and 21.64% took an association between them (typical and atypical). 69.75% of patients were prescribed one antipsychotic, 25.09% took two of them, 4.47% took three and 0.69% of patients took 4 antipsychotics. 73.19% of patients presented agitation (20.96% Alzheimer, 22.68% a dementia different from Alzheimer and 29.55% a non-typified disease), 10.65% presented schizophrenia and 16.12% other psychiatric diseases.

Table 1. Treatment of patients with agitation.

	Alzheimer (%)	Dementia different from Alzheimer (%)	Non-typified agitation (%)
Atypical	67.21	45.46	41.86
Typical	18.04	28.78	40.69
Combined	14.75	25.76	17.45

Table 2 Prescribed antipsychotics for agitation in Alzheimer.

Quetiapine (alone or combined)	40.58%
Risperidone (alone or combined)	39.14%
Haloperidol (alone or combined)	20.28%

Haloperidol was the most used typical antipsychotic (37.80%) and risperidone was the most used atypical antipsychotic (41.92%).
Conclusions.– There is a very high percentage of patients with agitation who take atypical antipsychotics. Quetiapine is widely prescribed to treat Alzheimer, although some clinical trials show that it is less effective compared to other atypical antipsychotics for Alzheimer's disease. The use of antipsychotics for agitation needs to be formalized, since it is the most prevalent symptom in our centers.

PC-178

Factors associated with inappropriate prescription in patients over 65 years in a nursing home

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Objectives.– Study demographic, clinical and functional variables associated with inappropriate prescription in institutionalized patients.
Methods.– We designed a transversal study that included patients older than 65, institutionalized in "ERA El Cristo" nursing home (Oviedo). We collected demographic, clinical, cognitive and functional variables. Defining inappropriate prescription according to STOPP/START criteria.
Results.– A sample of 108 patients were obtained (84.47 ± 7.48 years old, 66.70% female, Barthel Index 60.89 ± 37.76, Mini-Mental State Examination 14.82 ± 11.47). In the analysis of demographic variables, the inappropriate prescribing subgroup was older (84.72 ± 6.65), women 72% and widow 55.6%. We found association between inappropriate prescription and number of diagnoses: the subgroup with inappropriate prescription had 4.17 ± 1.81 diagnosed pathologies, compared to 3.31 ± 1.92 in the

properly treated group ($P < 0.05$). The patients with inappropriate prescription were treated with a greater number of drugs (6.47 ± 3.18 vs. 4.39 ± 3.12; $P < 0.05$). Patients without antecedents of cerebrovascular disease or heart disease receive inappropriate prescription more frequently (inappropriate prescription in patients without antecedents of cerebrovascular disease 68.5% vs. 31.5%; $P < 0.05$), inappropriate prescription in patients without heart disease 80.6% vs. 19.4%; $P < 0.05$).

Conclusions.– Inappropriate prescribing in our sample, is related with the number of diagnoses that presents the subject, the total number of prescribed drugs and the presence of cerebrovascular disease and heart disease of any kind.

PC-179

A public health and budget impact analysis of vaccinating at-risks and elderly adults with polysaccharide pneumococcal vaccine (ppv23) compared to pneumococcal conjugate vaccine (pcv13) in Germany

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Introduction.– *Streptococcus pneumoniae* is a leading cause of potentially life-threatening pneumococcal diseases (PDs). PPV23 has been recommended in Germany since 1982 in high-risk individuals and since 1998 in the elderly (aged 60 and over). It provides broad protection against invasive pneumococcal diseases (IPD), by covering 80–90% of all serotypes causing IPD, including strains associated with high antibiotic resistance and mortality. With the expected approval of PCV13 in the elderly in Germany, policymakers will have to decide on its use based on the implications for public health and healthcare budget. Objectives of the study were to assess the public health and budget impact of pneumococcal vaccination using PPV23 and/or PCV13 in Germany.

Method.– A multi-cohort, population-based model using the generally accepted Markov approach was developed to estimate the impact of several vaccination strategies to prevent PDs, accounting for IPD, non-bacteraemic pneumococcal pneumonia (NBPP) and post-meningitis sequelae. IPD incidence reduction in adults, induced by PCV vaccination of children was modelled using epidemiological trends observed in the US and data collected in Germany before and after PCV introduction in children. While awaiting estimates of the clinical effectiveness of PCV13 in adults, identical vaccine effectiveness against the vaccine-serotypes was assumed for the two vaccines. Several scenarios were analysed to assess the sensitivity of the results to epidemiological trends, vaccine effectiveness and costs. Between 2012 and 2016, cumulative epidemiological results and net budget impact (NBI) assuming vaccination of at-risk adults and elderly with PCV13 were compared to vaccination with PPV23.

Results.– Under different scenarios, the impact of PCV13, compared to vaccination with PPV23 ranged from 96 fewer IPD cases (−1%) to 370 additional IPD cases (+5%), and ranged from no impact to 27,000 fewer NBPP cases (−7%). Vaccinating with PCV13 resulted in an undiscounted NBI of 172 M€ (+13%) to 239 M€ (+22%). Results were sensitive to vaccination coverage rate, vaccine price and epidemiological trends.

Conclusion.– According to this analysis, PPV23 vaccination programmes targeting at-risk adults and the elderly provide good value for money while potential use of PCV13 is likely to impose a significant impact on the healthcare budgets and bring limited additional public health value.

Sarcopenia, falls and related aspects 1/*Sarcopenia, caídas y aspectos relacionados 1*

PC-180

The influences of the lower-extremity function in the aged person's quality of life – an analysis of correlation between SPPB and EQ-5D –

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Background.– If association between the decline in physical performance and the subjective quality of life is confirmed, the SPPB could be used as a predictor for decline in quality of life in aged people.

Objective.– This study aimed to elucidate the association of the short physical performance battery (SPPB) with the quality of life (EQ-5D) to determine the usefulness of the SPPB as a predictor of decline in quality of life.

Methods.– TheSPPB and EQ-5D were performed on random sample nested in the KLoSA panel. Comparisons of adjusted means of EQ-5D index between normal and abnormal SPPB groups were performed using a *t*-test. The association between EQ-5D and SPPB abnormality was examined using logistic regression analysis. Additionally, the associations of gait speed and chair stand time with EQ-5D index were examined using logistic regression analysis.

Results.– Four hundred and twenty two subjects were included in the analysis. Adjusted means of EQ-5D index were significantly lower when SPPB score was abnormal ($P = 0.022$ for men, $P = 0.047$ for women). Abnormal SPPB score was significantly associated with abnormal EQ-5D especially for men (adjusted OR 2.46, 95% CI 1.03–5.87 for men, adjusted OR 1.76, 95% CI 0.94–3.33 for women). Gait speed was significantly associated with EQ-5D index in participants regardless of sex.

Conclusions.– Abnormal SPPB score was associated with decline in quality of life. Thus, the SPPB has the potential to be used as an early predictor of decline in quality of life in clinical settings and epidemiological study.

PC-181

Correlation of serum 25(OH)D and HDL-cholesterol to aPWV and AIx and the influence to the fall risk

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Introduction.– Premature and increased arterial wave reflections and higher arterial stiffness are responsible for increased blood pressure, especially isolated systolic hypertension in the elderly. Aortic Pulse Wave Velocity (aPWV) and Augmentation-Index [AIx = Pressure Augmentation/Pulse Pressure (AP/PP)] are important markers of arterial stiffness. Aim of the study was to analyze the correlation of Serum 25(OH)D and HDL-Cholesterol to aPWV and AIx and the influence of these parameters to the fall risk.

Methods.– Forty-four consecutive patients, median age 85, (80–95) 93% female, with treated hypertension were included. aPWV and AIx were measured by Sphygmo Cor®. Furthermore Serum 25(OH)

D, HDL-Cholesterol and the fall risk were tested (recommended assessment scale). Kolmogorov-Smirnov, Anova and Pearson correlation-test were applied.
Results.– aPWV, median 12.27 m/sec (6.95–24.95). and AIx, median 34.50% (9–64) were high. 25(OH)D-Serum level, median 16.90 ng/mL (4–54.30) were low, significant correlated with increasing age ($P = 0.024$). HDL-Cholesterol median 48.50 mg/dL (28–80) and 25(OH)D were not significant statistically correlated to aPWV. There was no significant association between AIx and HDL-Cholesterol, furthermore no significant correlation between fall risk and 25(OH)D, HDL-Cholesterol and AIx.
Conclusion.– aPWV > 10 m/sec is associated with arterial hypertensive endorgan damage and with a higher cardiovascular risk. High velocity can be an additional argument to strengthen the therapeutic regime. Pulse Wave Analysis may give further information about quality of hypertension treatment. Measurement of 25(OH)D is recommended to detect Vit. D-Deficiency, which is common in the elderly. The role of the measured parameters, concerning the fall risk is unclear, maybe not least of the small number of included subjects.

PC-182
Results from a geriatric fall clinic

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Introduction.– Multifactorial fall assessment and intervention has been found effective in prevention of falls in elderly people. We report data from a geriatric outpatient fall clinic in Copenhagen.
Method.– All patients went through a multidisciplinary assessment program, i.e. vision, vestibular function, sensibility, orthostatic blood pressure, cognitive and emotional function, nutritional status, medicine use and functional ability measured with Berg Balance Scale (BBS), Dynamic Gait Index (DGI), Timed Up and Go (TUG) and 30 seconds Chair Stand (CS). Fear of falling was assessed with Falls Efficacy Scale-International (FES-I) at baseline and after 3 months. Further individualized work-up was done depending on symptoms and signs. Individualized interventions were offered.
Results.– A total of 156 patients were referred and had fulfilled the program (69% females, mean age: 79 years). 117 (75%) completed the full programme. Risk factors identified: 93 (59.6%) had impaired vision; 55 (35.3%) vestibular dysfunction; 115 (73.7%)impaired sensibility; 35 (22.4%) cognitive dysfunction; 43 (27.6%) depression; 24 (15.4%) malnutrition and 49 (31.4%) use of psychotropics. The work-up diagnosed cardiovascular disease (cardiac arrhythmia, orthostatic hypotension, autonome failure, sinus carotic hypersensitivity) in 57 (36.5%); central cerebral disease (i.e. stroke, Parkinson's disease) in 24 (15.4%) and peripheral neurological disease (spinal stenosis, peripheral neuropathy) in 11 (7.1%). 113 (72.4%) had impaired balance and 114 (73.1%) impaired muscle strength. Eighty-one (51.9%) were offered physical training in the fall clinic, and 39 (25%) were referred to physical training in the community. Fifty-three of the 81 patients who had physical training in the fall clinic fulfilled the training program. Mean number of training sessions was 10 and each session 1 hour. A significant improvement was found in BBS ($P < 0.01$), DGI ($P < 0.001$), CS ($P < 0.093$) and TUG ($P < 0.001$). No reduction in FES-I was found ($P = 0.227$).
Conclusions.– Multifactorial fall clinic assessment and intervention was feasible and a variety of fall risk factors and diseases was identified. Physical training improved balance and muscle strength. The geriatric fall clinic patients are frail and 35% did not fullfill the training program.

PC-183
Falls characteristics in a geriatric institution: Comparison between intermediate care and long term care units

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Patients and methods.– Patients admitted to an intermediate and long-term care center, who had fallen in the unit during 2010, were prospectively registered. Age, sex, Barthel index, Norton scale, diagnostics with risk of falling, risk of falling drugs intake at the moment of the fall, place of the falls, characteristics of floor, use of physical restrictions, use of walk aids, activity at the moment of the fall and the usual mobility of the patients were registered.
Results.– One hundred and fifty-nine falls [109 (68.5%) in long-term care unit (165 beds) and 50 (31.4%) in intermediate care unit (40 beds)] were registered. Differences between both units: age (74.6 ± 16.2 versus 78.9 ± 10.6) ($P = 0.08$); percentage of women (38.5% versus 48%) ($P = 0.26$); Barthel index (33.2 ± 20.3 versus 36.1 ± 22.4) ($P = 0.43$); Norton scale (15.1 ± 2.8 versus 16.7 ± 2.3) ($P < 0.001$); diagnostics with risk of falling (96.3% versus 83.3%) ($0 < 0.01$); risk of falling drugs intake at the moment of the fall (86.1% versus 86.5%) ($P = 0.95$): neuroleptics (50% versus 8.8%) ($P < 0.001$); place: falls in the bedroom (47.6% versus 70.2%), falls in dining-room (32.4% versus 10.6%) ($P < 0.001$); characteristics of floor: dry (98.1% versus 89.6%) ($P < 0.001$); use of physical restrictions (29.6% versus 77.5%) ($P < 0.001$); activity at the moment of the fall: move from bed to chair (32.4% versus 26.1%), walking (39.8% versus 39.1%) ($P = 0.26$); use of walk aids (68.5% versus 87.2%) ($P < 0.05$) and the usual mobility: alone (50% versus 20.8%); with someone (21.3% versus 41.7%); don't walk (28.7% versus 37.5%) ($P < 0.01$).
Conclusions.– 1. Neuroleptics were significantly more prescribed in patients in a long-term care unit, related to the characteristics of psicogeriatric patients. 2. Patients in the long-term care unit usually fall in the dining room, on a dry floor and need less physical restriction. 3. Patients in an intermediate care unit usually fall in the bedroom, use more walk aids and walk with someone because of the recent acute illness.
Aim.– To compare characteristics of falls in older patients admitted to an intermediate and long term care units during one year.

PC-184
Metabolic profile of healthy community-dwelling older people: The correlation with sarcopenia

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Introduction.– A possible etiologic factor in the development of sarcopenia is subclinical inflammation. EPA (Eicosapentaenoic Acid, Ω-3-FA) inhibits the synthesis of inflammatory agents. Unlike the omega-3-fatty acids (Ω-3-FA), poly unsaturated omega-6-fatty acids (Ω6-FA) promote inflammation. AA (Arachidonic Acid, Ω6-FA) and EPA are important molecules of both classes and their ratio is a measure for the inflammatory status of an individual.
Methods.– Healthy community-dwelling subjects above 60 years of age are included. Exclusion criteria are recent surgery, change of medication and active disease. The Lean Mass Index (LMI), a measure of muscle mass, is measured through Bio-electric Impedance Analysis (BIA). Fatty acids of the Ω3- and Ω-6-series, cholesterol, high sensitive C-reactive protein (hsCRP), insulin-like growth factor 1 (IGF-1) are measured in plasma. Sarcopenia is defined as 2 standard deviations under the mean LMI of a young,

healthy reference population (n = 71, mean age = 22.8 ± 2.8 years), adjusted for sex. All statistical analysis is done with PASW Statistics 18 (SPSS Inc, Chicago, IL, USA).
Results.– Sixty-six elderly (41 ♀and 25 ♂) are included, of whom 16.6% meet the criteria of sarcopenia. The ratio AA/EPA was significantly higher in older people with sarcopenia compared to those without sarcopenia (9.7 ± 3.9 vs. 7.3 ± 2.9, $P < 0.01$). There was no correlation in the study group between AA/EPA and age, nor a significant difference in AA/EPA between sexes. No significant differences were found for hsCRP, IGF-1 and cholesterol.
Conclusion.– Older people with sarcopenia have a higher AA/EPA ratio suggesting that sarcopenia is associated with a pro-inflammatory status.

PC-185

Ortho-geriatric patient transfer between departments and hospitals prolongs hospital stay and effects survival

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Objective.– To assess the impact of transferring orthogeriatric patients between departments and hospitals on the length of hospitalization and the death rate. An observational correlation study.
Background.– Transfer of the orthogeriatric patients was a routine in the Region hospital of Horsens, Denmark until 01-01-2009. Postoperative patients with hip fracture were transferred to two nearby hospitals for geriatric medical care and rehabilitation purposes. Due to structural changes in the hospital this praxis was terminated in 2009. The patients were then operated and rehabilitated in the orthopedic department with daily geriatric care and supervision.
Methods.– All patients with hip fracture admitted to the hospital during the period of 01-01-2007 and 12-31-2010 were included. The total length of stay from admission to discharge was calculated by adding all intrahospital and interhospital transfers. The differences between the periods of 2007–2008 (period.1) and 2009–2010 (period.2) were compared by t-test statistic. Dates of death were collected from the national population register and data were assessed in a similar manner.
Results.– During a 4 years period 833 patients (mean age 79.8, female 69.2%) were admitted with hip fracture to the orthopedic department. While in period.1 38% of the patients were transferred, only 5% were transferred in period.2 (mostly due to complications). The mean total length of hospital stay in period.1 was 18.1 days while in period.2 10.5 days ($P < 0.001$, mean diff. 7.7, 95CI 5.94-9.40). The mean 30 days death rate in period.1 was 6.1% and in period.2 2.9% ($P = 0.026$ mean diff. 3.2, 95CI 0.39–6.00). The mean 3 months death rate in period.1 was 11.1% and in period.2 6.9% ($P = 0.033$ mean diff. 4.2, 95CI 0.34–8.13).
Conclusion.– The study shows a correlation between the transfer of orthogeriatric patients, the prolongation of hospitalization and the increase of death rates. Although no causal conclusion can be made, the differences in death rates is unmistakable. Three to four percent of the patients survived longer in period 2. Also the economical issue is remarkable. By avoiding transfer the hospital-stay was reduced by 7.7 days for each patient and saved the hospital about 1600 bed-days a year.

PC-186

Hip fracture and functional outcome after geriatric rehabilitation

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Method.– Longitudinal prospective cohort study. Study participants were all patients 65 years or older hospitalized for rehabilitation following surgical treatment repair after hip fracture during 2009 and 2010. Collected data included age, sex, functional status measured for basic activities of daily living using the Functional Independence Measure (FIM) (pre-fracture, at inpatient admission for rehabilitation and at discharge functional status), diagnosis of dementia or depression according to DSM-IV criteria, medical co-morbidity measured by Charlson Index, frailty according to Barber questionnaire and presence of delirium and systemic or local complications after surgery.
Results.– One hundred and seventeen patients were included in the study. Mean age was 83.9 (0.6) years and 99 (84.6%) were women. Pertrocanteric fracture was the most common type of fracture in 75 (64.1%) patients.
Descriptive statistics are shown in Table 1.

Variable	Mean	SD
Prefracture FIM score	103.2	2.4
Charlson score	5.0	0.2
Length of stay at Trauma ward	23.2	1.6
FIM socre at admission	53.6	2.4
Length of stay at Rehabilitation ward	53.1	2.5
FIM score at discharge	85.0	3.0
Motor FIM gain	31.6	2.0

Variable	n	%
Dementia	41	35.0
Depression	24	20.5
Social Frailty (Barber)	102	87.2
Systemic complications	51	43.6
Local complications	12	10.3
Delirium	34	29.1

Five variables were significantly associated with positive functional outcome: prefracture FIM score ($P < 0.0001$), FIM score at admission ($P < 0.0001$), serum albumin level at admission ($P = 0.0001$), low Charlson Comorbidity Index ($P = 0.0005$) and immediate weight-bearing ($P = 0.0031$). In the other hand there was a negative association between functional outcome and five variables: age ($P = 0.015$), diagnosis of dementia ($P < 0.001$), presence of complications after surgery ($P = 0.0191$) and systemic complications ($P = 0.0370$) or delirium ($P = 0.0018$). After stepwise regression only 4 variables were significantly and independently associated with functional recovery: prefracture FIM score, FIM score at hospital admission, serum albumin level at admission and diagnosis of dementia.
Conclusions.– Functional status, dementia and serum albumin levels are the main factors associated to functional recovery after rehabilitation in older hospitalized patients following hip fracture surgical treatment.

PC-187

Is there a relationship between falls and functional ambulation classification (FAC)?

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Background.– To study the relationship between falls and Functional Ambulation Classification, FAC (also known as Holden Scale). Method: A study in a health center from 1 July 2010 to June 31, 2011. We present preliminary results for the period from 1 July to 31 December 2010. We designed a collection sheet in which included the following data: patient identification (name, sex, age),

date of the fall, and assessment of the patient at the time of the fall: functional assessment using the Barthel Index, level cognitive assessment by Mini-Mental State Examination (MEC) of Lobo and assessment of gait using the scale of Holden.
Results.– Number of falls from July to December 2010: 33. Number of patients who fall: 22. Twelve were women. Mean age 81.8 ± 9.6 years. Barthel Index: 45.2 ± 24.3. MEC 18.2 ± 7. According to Holden rating: -Holden-0: 11 falls, 7 men, 4 women. Mean age 77.9 ± 11.7 years. Barthel Index 28.2 ± 16.2. MEC 18.9 ± 7.7. -Holden 1: 9 falls, 4 men, 5 women. Mean age 83.1 ± 8.6 years. Barthel Index 51.7 ± 19.7. MEC 17.6 ± 4.6. -Holden-2: 5 falls. One man, 4 women. Mean age 84.4 ± 5.9 years. Barthel Index 50 ± 8.7. MEC 17 ± 3.7. Holden 3: 5 falls, 5 men. Mean age 82.2 ± 1.8 years. Barthel Index 64 ± 8.2. MEC 13 ± 0. Holden 4: 3 falls, 3 women. Mean age 82.3 ± 5.5 years. Barthel Index 85 ± 13.2. MEC 20 ± 10.5. Holden 5: 0 falls.
Conclusions.– We found that patients with a major limitation of ambulation, Holden level 0 and 1, have an increased risk of falling. Therefore, it should take more preventive measures in these patients.

PC-188

Looking for an objective method to measure fear of falling: Pilot anglo-spanish study to measure fear of falling through the activity in old people by 24 hours monitor device

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Objectives.– Fear of falling (FoF) is a subjective feeling about the possibility of falling when doing different activities. It is usually measured by self completed scale or direct question, never in an objective way. This research looks for associations between the physical activity of a person measured by a 24 hours monitor device Numact and FoF.
Methods.– Twenty participants were accepted with FoF and 20 controls without it, all over 60 years old. Those with FoF had Modified Falls Efficacy Scale from a total of 0–10, score < 6.7 = yes; > = 6.7 = no. Exclusion criteria were age under 60, dementia, not able to fill the questionnaire, walking or holding Numact. Collected data were demographics, falls, use of stick, diseases, medication, dizziness, depression and anxiety, SF36, functional situation by Health Assessment Questionnaire (HAQ), pain and fatigue Visual Analogue Scale (VAS) and data from 24 hours monitoring with Numact: Number of steps (steps), amplitude, energy, step interval (stint), that is a measure of limping, and seconds standing. Statistical analysis: for bivariate analyses, Chi-square, the *t*-test (or Mann-Whitney U) and Spearman correlations were used. Logistic regression models were used for multivariate analyses.
Results.– Most of study population was women (87.5%), 60% were aged 60–79 years. Female sex, more than 4 medications, use of stick, cardiac disease, diabetes mellitus, urinary incontinence, depression, higher HAQ, VAS pain and fatigue and data from 24 hours record from Numact: seconds standing, steps, energy and stint are associated with FoF. However this association disappears if age is introduced in multivariate analysis. A different pattern was identified on the relationship between FoF and Numact parameters comparing the youngest with the very old patients. Among participants aged 60–79 years, FoF was significantly correlated to seconds standing (r_s = -0.39; P = 0.0591), steps (r_s = −0.55; P = 0.0054), and stint (r_s = 0.52; P = 0.0087). No significant correlations were found among patients age 80+ years. In separated logistic regression analyses, and adjusting for age and the interaction term (either with seconds standing, steps or stint), seconds standing (P = 0.0394), steps (P = 0.0235) and stint (P = 0.0279) were significantly associated with FoF.
Conclusions.– These measurements made by Numact seem to be useful to determine the risk for FoF in participants under 80 and its confirmation is needed in further studies.

PC-189

Hip fracture multidisciplinary unit: 150 days in operation

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Objectives.– One of the main challenges of health policy in elderly patients is to maintain the highest level of autonomy delaying dependency, disease and prolonging the disability-free life expectancy. Taking into account our previous experience and on the basis of specific needs of the group of than 65 years detected by professionals of Hospital Althaia, a Hip Fracture Multidisciplinary Unit has been proposed in order to optimize care patient decreasing morbidity, complications and hospital-acquired mortality.
Method.– Implementation of a Hip Fracture Multidisciplinary Unit (24 May 30–October 2010), human equipment made up of: manager of cases, internist doctor with knowledge of clinical gerontology, traumatology and anesthesist. Used method and resources: 1. Integral geriatrical evaluation pre- and post-surgical in patients with osteophorotic hip fracture (evaluation of co-morbidity, functional, cognition and nutritional state). 2. Optimization in the detection of problems by means of systematic collection in a data base. 3. Dowry of own operating room with a specific equipment of traumatology. 4. Directed treatment of the pain. 5. Increase of human resources for the functional rehabilitation.
Results.– Total of 109 patients > 65 years old; (65–75) 10%; (76–85) 46.8%; (86–90) 21%; (> 90) 22.2%. Type of fracture: 109 proximal hip (50% pertrocantherea, 43.5% subcapital). Comorbidity (Charlson Index): (1–3) 51.4%, (> 4) 43%. Polimedication: (> 5 drugs) 46%. Days of surgical delay: (53% during the first 24 hours, 11% after 4 days). Days of hospitable entrance: (42.7% between 9 and 12 days). Complications: 12% urinary infections (most excellent). Global mortality: 5.5%. Hospitable average stay: 14.7 days.
Conclusions.– The most excellent results observed thanks to the implementation of a multidisciplinary equipment have been the practical disappearance of complaints of users and families, reduction of the surgical delay, diminution of hospitable mortality, average stay and its complications.

PC-190

Repeat prescription of strontium ranelate started during hospital admission: A survey of GP practices

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Introduction.– National Institute of Health and Clinical Excellence osteoporosis guidelines recommend strontium ranelate where there is intolerance, contraindication or unsatisfactory response to bisphosphonates, resulting in further fragility fracture or loss of bone mineral density (BMD). Strontium ranelate started in hospital requires repeat prescribing by a patient's GP after discharge. This is key to successful treatment of osteoporosis since BMD changes are often only detectable after two years. This survey aims to

determine the proportion of patients still prescribed strontium ranelate after hospital discharge.
Methods.– A telephone survey of the GP practices of all hospitalised patients discharged on strontium ranelate therapy for secondary prevention of osteoporosis, between January and July 2009, was conducted in February 2010. Data was gathered on whether patients were still receiving strontium ranelate on their latest repeat prescription.
Results.– Thirty patients (6 male, 24 female) were identified. 24 patients had sustained fragility fractures (11 neck of femur fractures) while 6 had alternative evidence of osteoporosis. Seven patients were excluded (5 deceased, 2 changed practice). Of the 23 patients, 13 patients (57%) were still receiving strontium ranelate indicated by their latest repeat prescription, while 10 patients (43%) were not.
Conclusion.– Six months to a year after discharge just over half of patients started on strontium ranelate were still receiving repeat prescriptions. Our results are limited by the absence of data on reasons for drug cessation, such as patient intolerance, cost implications or lack of awareness of the strong indications for strontium ranelate therapy, which our survey was not set up to identify. Further identification of correctible factors is warranted to ensure patients at high risk of fragility fractures receive appropriate treatment after discharge to prevent any further fragility fractures.

PC-191

Selection of clinical indicators to construct inclusion criteria with reference to frailty in the home sweet home (HSH) project

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Introduction.– Ambient Assisted Living (AAL) technologies have the potential for extending the independent living of older people. HSH, a European Commission co-funded AAL project, investigates the effect of an economically sustainable home assistance AAL platform (http://www.homesweethome-project.be).
Aim.– To specify clinical indicators for a practical and valid evaluation of functional status of older people participating in HSH in four different European trial sites.
Methods.– Clinical outcomes were chosen with respect of the following criteria: use of identical indicators at all sites, relevance for an older population, relevance for prevalent pathologies and conditions in older people, usefulness also for economical evaluation, reliability and ease of measurement. For language specific measurement tools and surveys, availability in all four trial site languages (Dutch, English, Italian, Spanish) is mandatory. A complete geriatric assessment may not be necessary. However, a short evaluation would describe participants, classify them according to frailty level, and could even be an outcome of the trial.
Results.– The screening items in several functional domains are chosen in a way that they can make up a composite resulting in the Edmonton Frail Scale (EFS), a validated scoring for frailty. So, evaluation in the domains of physical function, mobility, and polypharmacy is possible. A unique characteristic of the EFS as a clinical frailty instrument is its inclusion of the domain of social support, suggesting an endorsement of the dynamic model of frailty. According to the screening recommendation for sarcopenia (European Working Group for Sarcopenia in Older Persons) handgrip strength and gait speed are included. Furthermore, the Mini-Cog (3-word recall and clock drawing test) for cognition is included and height, weight, unintentional weight loss, and MNA-Short form for nutritional assessment. Finally the Clinical Global Impression rating scales for status severity, treatment response and the efficacy of the intervention.
Conclusion.– Based on items from the Comprehensive Geriatric Assessment a composite of indicators is used to construct a valid measure of function for the HSH project that can be used by non-specialists who had only a basic formal training in geriatric care.

PC-192

A multidisciplinary program for preventing falls "identify, prevent and get up": Impact on falls in elderly inpatients

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Introduction.– Falls among elderly inpatients are common, multifactorial and associated with a significant increase of complications and morbidity. According to a recent Cochrane review, the effectiveness of fall prevention program has been assessed in community dwelling and in long stay wards but not in rehabilitation wards (RW) and geriatric acute wards (GAW). Our purpose is to present the methodology and expected results of the "*Identify, Prevent and Get up*" program which is a multifaceted fall prevention program in elderly inpatients in RW and GAW.
Methods.– The study design is a stepped wedge cluster randomized trial conducted in the RW and the GAW of 12 French hospitals. All patients aged 65 and over with MMSE test > 10 will be included. The prevention program will be implemented by a geriatrician and a nurse within each hospital. The "*Identify, Prevent and Get up*" program includes 3 interventions: 1. Identification of patient's fall risk, 2. Multifactorial fall prevention program (integrated actions targeted on risk factors, exercise programs and review of the hospital environment) and 3. "Get up" workshop and morbidity and mortality case conferences. This program will be implemented along four successive time periods. The order of program implementation within each cluster (4 hospitals) will be randomly assigned, in order that each cluster will be successively affected to the control and the intervention arm. In order to obtain a statistical power of 95% (ICC = 0.9, $\alpha = 5\%$), 1680 patients should be included.
Results.– The implementation of the prevention program may decrease the incidence of falls. It should decrease fall-related mortality and complications and increase quality and security in healthcare in elderly inpatients. If the program has an impact on fall prevention in elderly inpatients, it could be extended to geriatric acute or rehabilitation wards in other hospitals.
Conclusions.– The "*Identify, Prevent and Get up*" program is composed of three complementary interventions which focus on several stages of elderly inpatient management. The stepped wedge design is an original methodology that has ethical, logistical and statistical advantages. With this design, the contamination biases are decreased and the time effects on the effectiveness of the intervention can be measured.

PC-193

Functional evolution and need for resources in geriatric patients with hip fracture

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Objective.– To detect risk factors for low functional recovery, and mortality and analyze the need of social-health resources in elderly patients with hip fracture.

Patient and methods.– Prospective and cross sectional descriptive study of patients hospitalized for hip fracture in S.°Traumatology from March to August 2010. The variables: demographic, clinical (kind of fracture, Charlson comorbidity index, surgical complications), functional (modified Barthel Index), cognitive (ECRM and Pfeiffer), social (residence before and after hospitalization, social resources). Later it was done a telephonic monitoring (one, three and six months after) valuing: functional status, cognitive, complications, social resources and death.
Results.– We studied 65 patients, mean age 85.5 years, 85.7% women. After the analysis were detected as factors related to low functional recovery: I. Barthel < 60 before admission, habitual residence in nursing home, medical history of Parkinson disease, high comorbidity (Charlson Index > 3), postoperative complication urinary tract infection. As predicting factors of mortality (20%): I. Barthel < 60, previous cognitive impairment, pneumonia and acute confusional syndrome for hospital admission, not to weight on affected limb at hospital discharge, live in nursing home. About social resources: increasing institutionalization and social resources essentially private.
Conclusions.– 1. Patients with previous functional impairment and high comorbidity have a worse functional prognosis after hip fracture. 2. The presence of cognitive impairment, acute confusional state and not to weight on affected limb at hospital discharge, associated with previous factors, conditions high mortality. 3. The hip fracture leads to increased social-health resource and economic and personal burden of the family, so the detection and action on the factors of low functional recovery, helps us to intervene for improve the situation at hospital discharge and get the return of the elderly to their previous social environment.

PC-194

Physical activity in older adults with intellectual disabilities

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Introduction.– Although physical activity often declines with ageing, older adults can still obtain several health benefits from physical activity. In young adults with intellectual disabilities (ID), low levels of physical activity have been shown, but no research has yet investigated the levels of physical activity in the rapidly increasing ageing population with ID. This study was part of the study 'Healthy ageing with ID' in 1050 older clients with ID in three care providers in the Netherlands and aims to measure levels of physical activity in a large sample of older adults (50 years and over) with intellectual disabilities (ID).
Method.– Physical activity was measured with a pedometer (NL-1000), which is able to measure reliably at speeds of 3.2 km/h or higher. All participants with a comfortable walking speed of minimal 3.2 km/h wore a pedometer for 14 days. These measurements were used to investigate reactivity, the minimal necessary monitoring frame, patterns in physical activity across the week and the actual physical activity levels of this population.
Results.– Largely due to physical limitations, low walking speed or limited understanding, only 268 out of 1050 older adults were able to participate in the measurement with the pedometer. Reactivity was not present, and a monitoring frame of four days was sufficient to measure the level of physical activity reliably. On Sundays, steps/day were lower than on any other day. Physical activity levels were low: 83.3% (95% CI 78.7–87.8) of the participants did not comply with the guideline of 10.000 steps/day, 63.8% (95% CI 57.9–69.7) had 7500 steps/day or less and 39% (95% CI 32.6–44.5) was sedentary (< 5000 steps/day).
Conclusion.– Physical activity levels in older adults with ID are very low. Because the actual sample was the more functionally able part of the total sample of 1050 older adults with ID, this result is likely to be even an overestimation of the actual physical activity levels in this population.

PC-195

Under treatment of osteoarthritis in geriatric outpatients

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Objectives.– Osteoarthritis is a very common condition in older people that commonly causes pain and may lead to physical disability. However, it may be overlooked in geriatric clinics, where other comorbidities may be prioritized in the problem list of complex patients. We aimed to know the prevalence, consequences and treatment of osteoarthritis referred to a geriatric outpatient clinic.
Methods.– Observational study of 168 consecutive new patients referred by their primary care physicians to a geriatric outpatient clinic in a university hospital.
Results.– Mean age 82.5 years, 94% women. Most patients (87.5%) had a previous diagnosis of osteoarthritis, being the knee the most frequent localization (22%), although in many cases it was not well documented. 10% where unable to walk (needing a wheelchair), 84% walked independently. Near half of them (46%) had some disability for at least one basic ADL. 43% reported at least one fall in the last six months. Only 61% of the patients with osteoarthritis used an analgesic drug, being acetaminophen the most prescribed. However, 48% of them used the pain drug only on demand.
Conclusions.– Osteoarthritis is a very common diagnosis in patients referred to a geriatric clinic, although it is usually bad documented. Analgesic drugs may be under prescribed and used only on demand, disregarding the disabling prognosis of this condition.

PC-196

Impact of preoperative anaemia on functional decline secondary to osteoporotic hip fracture surgery in elderly

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Background.– The aim of this study is to analyze the evolution of the old patients admitted in an Ortogeriatric Unit of the Department of Geriatric Medicine (OU) coming from Hospital Municipal de Badalona (HMB), suffering from osteoporotic hip fracture and over 65 years of age. We analyze the importance of Haemoglobin at hospital admission as a predictive factor in their evolution.
Patients and methods.– We performed a prospective study of admitted to HMB with diagnosis of hip fracture and discharged throughout the years 2009–2010. We analyzed: age, sex, haemoglobin at admission and discharge from HMB and OU. The patient's functional status using the Barthel Index at admission and discharge from HMB and OU. The pathologic background prior to the Charlson comorbidity index, and length of stay (LOS).
Results.– The study included 52 patients hospitalized for hip fracture. The male/female ratio was 11/41, age mean 82.62 years.

At the time of admission of HMB, the average haemoglobin was12.60 g/l, showing mild anaemia (Hb11-10) 23.1%, moderate anaemia (Hb: 9–8) in 7.7%, and no anaemia in 69.2%. At the time of admission to the OU, the average haemoglobin was 10.27 g/L, showed a mild anaemia 36.5%, moderate in 46.2% and severe in 1.9%. No anaemia 15.4%. And at the time of discharge of OU, the average haemoglobin was 11: 43 g/L, showing a mild anaemia 36.5%, moderate 11.5% and severe in 3.8%. No anaemia in 42.3%. The Barthel Index was 86.79/100 in half of the patients before the fall, 48.90/100 at admission of OU (reaching 31.25/100 in moderate anaemia subgroup), and 74.62/100 at OU discharge (reaching 43.5/100 in moderate anaemia subgroup). Patients with moderate anaemia at admission are older (mean of 88.5 years old), have a lower Barthel at HMB admission (72.25/100), at HMB discharge (31.25/100) and at OU discharge (43.5/100). They also show higher Charlson Index (1.75) and higher LOS (198.5 days, while mean LOS is 64.22 days).

Conclusion.– The low haemoglobin at admission is a bad prognostic factor in the evolution of patients with osteoporotic hip fracture.

PC-197

How can we prevent falls in a gerontologic center? A one year analysis

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Objective.– Falls description and analysis in a gerontologic centre during one year. Key issues.

Method.– During 2010, data related to falls were collected. The number of falls, when they occurred throughout the day, where (bathroom, dining room, bedroom, corridor, outdoor) and how they took place were reviewed. The average and type of psychotropic drugs used were analysed as well as risk factors related to the resident who suffered falls and the use of physical restraints.

Results.– During 2010, 368 falls were collected in a population of 190 residents. The patient profile were women, average age of 85, 59% with Barthel below 40, 70% with MEC below 20. 30% suffered from behavior disorders. The average number of falls per month was about 30. 43% of the residents fell at least once during this year and 9% people from this group suffered more than 5 falls for the last twelve months. The average number of drugs per person in the center was 7 and 23% took more than 9 drugs. Among people falling half of them were taking at least one psychotropic drug and 9 persons had physical restraint (belt restraint).

Conclusion.– The problem of falling is an increasing problem in our centers as people are becoming older and more dependent and disabled. When we review the literature the correct management of risk factors become the first step to prevent falls. Interdisciplinary evaluation and approach are essential to enhance the risk of falls.

PC-198

Understanding the triad of frailty, fatigue and polypharmacy; A systems biology approach

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Introduction.– The objective of this paper is to propose a systems biology approach to explain the frequently seen clinical triad of polypharmacy, frailty, and fatigue frequently seen in the geriatric population.

Methods.– Multisystem disorders and chronic diseases such as altered thyroid states and cancers are associated with frailty; presumably because of the high energy demands of a deregulated cellular environment. It is associated with the specific biomarkers of inflammation, such as acute phase proteins, tumor necrosis factor (TNF) and cytokines. Frailty is often experienced as fatigue and reduced physical function. Fatigue is a sensation of "low" energy that suggests a disorder of energy balance. Molecular studies suggest that there is a decline in the number and function of mitochondria in the aging cell. This leads to an increased work burden on the remaining mitochondrial energy apparatus. It is widely accepted that age related changes in mitochondrial DNA are caused by oxidative stress. Increased mitochondrial oxidative stress releases reactive oxygen species/free radicals causing cell injury and inflammation. Fatigue and frailty are also associated with certain groups of medications e.g. beta-blockers, psychotropic agents, statins and chemotherapeutic agents. We propose that the group of medications most likely associated with the clinical picture of frailty and fatigue share the following characteristics; (1) Interactions with multiple biological systems (i.e. central nervous, digestive and musculoskeletal), (2) Impact on cellular metabolism of glucose /fat, (3) Energy dependent transport (i.e. active vs. passive absorption), (4) Phase III metabolism, (5) Ability to induce hepatic microsomal enzymes. Theoretically, these medications can alter the energy homeostasis by requiring extra energy for their activation and metabolism. This extra demand of energy is met by increasing ATP generated from mitochondrial oxidative phosphorylation.

Conclusion.– Polypharmacy is capable of causing mitochondrial oxidative stress by requiring significant energy for drug transport and metabolism. Alteration of mitochondrial function in the aging cell creates an energy deficit or catabolic state in the face of chronic illness in the elderly biological system. Polypharmacy in the elderly can compound fatigue and frailty.

PC-199

Association between mobility and physical performance in elderly

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Background.– Age-associated mobility is now of major public health importance due to higher risk of falls, injury, chronic disease, dependency, institutionalization and mortality. However, there were few studies investigating the relationship between mobility and physical performance. The purpose of this study is to examine the relationship between LSA and SPPB.

Methods.– The LSA and SPPB were performed on random sample nested in the KLoSA panel. Subjects aged over than 65 years who performed LSA and SPPB in the KLoSA was included. The association between LSA and SPPB was examined using linear regression analysis by sex, after adjusting for age and IPAQ (international physical activity questionnaire). Additionally, the associations of each domain of SPPB (balance, gait speed, and chair stand up) and LSA were examined using linear regression analysis.

Results.– A total of 334 subjects was included in the study. Of those, 149 (44.61%) were men, and 185 (55.39%) were men. The mean (±SD) age was 69.60 (±7.11) years in men, and 70.57 (±7.08) years in women. LSA was significantly related to total score of SPPB (b = 3.25, 95% confidence interval [CI] 1.41, 5.10) after adjusting for age, sex, and IPAQ. LSA was significantly associated with gait speed (b = 3.61, 95% CI 1.21, 6.03) and chair stand up (b = 3.26, 95% CI 1.41, 5.11). But

the relationship between LSA and balance was not statistically significant (b = 1.63, 95% CI −0.84, 4.10).
Conclusions.– This study suggests the notion that LSA is related to SPPB score, gait speed, and chair stand up, but not to balance, independently of age and IPAQ.

PC-200

Strategies to prevent falls and fractures in care homeless and effect of cognitive impairment and sarcopenia

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Objectives.– To identify risk factors associated with recurrent falls in institutionalized. The use of complex strategies for the prevention of falls in institutionalized patients reduce the frequency of falls. Synthesize and evaluate information on the prevention and consequences of recurrent falls in order to inform prevention strategies. Investigate their impact on dementia and sarcopenia.
Patient and methods.– Observational cohort study. Fall registration filled directly from the time of the event (fall) and subsequent follow-up in history. Baseline variables were studied anthropometric, clinical, pharmacological, functional and mental in a group of patients with recurrent falls and another group without falls in a residential facility. We performed a descriptive analysis and inferential analysis.
Results.– For 14 months, followed 279 individuals, of a residential facility, of which 138 formed the final sample. 37 patients met the criteria for sarcopenia (none of them was being treated, nor was he brought oral supplementation) The variables associated with recurrent falls, presence of caregiver ($P < 0.011$), female gender ($P < 0.02$), I. Barthel ($P < 0.001$), technical assistance ($P = 0.049$), speed ($P < 0.03$), grip strength ($P = 0.049$), risk screening test fall [''up and go''] ($P < 0.005$), dementia ($P < 0.033$), hospital income in the previous year ($P < 0.047$), fracture previous hip ($P < 0.001$). In these cases, insufficient consumption of vitamin D, together with certain altered nutritional parameters (prealbumin, transferrin, cholesterol, vitamin A, D and C) and anthropometric parameters (calf circumference, BMI, abdominal skinfold) act as fitness factors enhance and predispose to further falls. Thirty-seven patients met the criteria for sarcopenia were sampled.
Conclusions.– 1. Factors inherent in the status of the elderly we can develop strategies to prevent falls. 2. Frailty and dementia are directly related to recurrent falls. 3. Models that predict falls are: women-dementia-hospitalization in the previous year, hip fracture-detection test droPC-technical, I. Barthel pressure-force-presence of a caregiver.

PC-201

Frailty prevalence and associated factors among community-dwelling people aged over 75 years old

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Aim.– Estimate frailty prevalence and possible associated factors among older community-dwelling population.
Method.– It is a cross-sectional study, whose population is composed by 75 years old or more individuals, non-institutionalized, with sanitary card and living in single-family tenements at the city of Lleida. It was performed a stratified sampling according to the seven basic areas of health in the city, selecting one probabilistic sample in each strata. Data was collected from the ''Frailty among Lleida old population survey'' (FRALLE survey). Frailty was measured by Fried index. Other socio-demographic, psychological and social variables were also collected.
All variables were previously dichotomized for the application of OR and 95% CI. Bivariate analysis was obtained by Chi^2 and t of Student tests, according if they are qualitative or quantitative. Subsequently multivariate analysis was performed.
Results.– Total sample was 640 individuals with an average age of 81.3 ± 5. 39.7% were men and 60.3% women.
Frailty prevalence was 9.6% (22% men and 78% women) and pre-frailty was 47% (33.3% men and 66.7% women). After introducing at the logistic regression those factors associated with frailty into the bivariate analysis, factors independently associated with frailty were age (OR 2.4), comorbidity (OR 2.4), cognitive impairment (OR 4), depressive symptoms (OR 2.3), basic disability (OR 5.5), malnutrition (OR 3.8), low network diversity (OR 0.65) and health status limitation (OR 0.98) (Last two factors are quantitative variables).
Conclusions.– There are big differences on frailty and pre-frailty ciphers among elderly on the consulted studies, which had used the same criteria for its definition; even though, most of them are similar to the ones introduced here. Women are more likely to be affected by frailty than men.
Frailty is influenced by diverse physical, psychical and social factors. The longitudinal study through FRALLE survey will contribute with valuable information about possible noxious effects for health on the frailty of elderly people.

PC-202

Relation between falls, fear-to-fall and restriction of associated activities among community-dwelling elderly people

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Aim.– To analyse the relationship between falls and fear-to-fall and restriction on associated activities among community-dwelling population, aged over 75.
Method.– Data was collected from the ''Frailty among Lleida old population survey'' (FRALLE survey). Falls and fear-to-fall is assessed with the question *''had you fall in the last year?''* and *''are you afraid of falling?''* respectively. Activity restriction due to fear-to-fall was assessed by Albarade scale.
Results.– Total sample was 640 individuals with an average age of 81.3 ± 5. 39.7% were men and 60.3% women.
Falls prevalence over the last year was 25%, of fear-to-fall was 63.4%. Of those who had fallen, the average of activity restriction scale due to fear-to-fall was 41.6 ± 19.2 (16 to 80 punctuation).
People who had fallen during the past year had more risk of presenting fear-to-fall (36.6%) than those who had not fallen (14.6%), resulting on OR 3.8 with a significance of $P < 0.01$.
Who had fallen over the past year presented more restriction of activities due to fear-to-fall (41.6 ± 19.1) than those that had not fallen (33.5 ± 15.5).
Expression of fear-to-fall after the fall was associated with female gender (OR 3.9), frailty (OR 15.9), basic dependence (OR 4.7) instrumental dependence (OR 2.4), vision issues (OR 4.1), not walking at least once a week (OR 3.6) and worst self-expressed health status (OR 2.2).
Conclusions.– Fear-to-fall may lead into a weakening spiral characterized by the loss of self-confidence and activity reduction,

which results on an increase of vulnerability and a loss of independence.
The longitudinal study through FRALLE survey will contribute with valuable information about those individuals without falls antecedents and those with fear-to-fall on the basic study and the most fall risk or not during following.

PC-203

Development of a population-based programme to reduce the number of osteoporotic fractures

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Introduction.– Due to the increasing number of old and very old persons in Germany within the next decade a considerable increase in the number of osteoporotic fractures is expected. To achieve a significant reduction in the number of osteoporotic fractures there is a need to target those with high and low risk of falling. Consequently, there is a need for population-based measures. The aim of the project is to develop a population-based approach to reduce the number of osteoporotic fractures.
Methods.– The programme is targeting non-institutionalized persons older than 64 years. A pilot city (120,000 inhabitants) serves as a model region for the development of a programme. After review of literature two sub-goals were defined: (A) prevention of falls and (B) increase of physical activity. Nine possible fields of action were identified. For each field local representatives of organisations, institutions and services were invited into focus groups and asked about their ideas how to achieve these goals in the context of their activities. A steering committee of local stakeholders was asked to prioritize realisation of ideas.
Results.– Nine possible fields of action were identified: (1) Exercise classes, (2) co-operation within the health care system, (3) co-operation with community nursing services, (4) housing, (5) infrastructure and transportation, (6) social marketing, (7) targeting migrants, (8) co-operation with traders, (9) measures within a districts. To cover all these fields representatives of a large number of organisations, institutions and services were invited e.g. local sports clubs, services for older persons, primary care physicians, the local geriatric hospital department, health insurances, newspapers, etc. Theses focus groups developed a great number of ideas that were sorted into categories. The local steering committee prioritized (i) ideas to improve the quality of exercise classes, (ii) the development of a central registry for exercise classes and (iii) co-operations with physicians and local hospitals as the first clusters of ideas.
Conclusions.– To develop a population-based programme for prevention of osteoporotic fractures networking with a great number of organisations, institutions and services outside the health care system is needed. Nevertheless, hospitals and physicians are regarded as important partners.

PC-204

Association between plasma homocysteine and bone density and quality parameters in the elderly

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Introduction.– Mildly elevated plasma homocysteine (hcy) levels have been positively associated with osteoporotic fractures. The underlying mechanism is still unknown. In general, no associations between hcy levels and bone mineral density (BMD) have been observed. Therefore, it has been hypothesized that hcy might influence bone structure instead of BMD.
The B-PROOF-study is designed to investigate whether the hcy-lowering vitamins B_{12} and folic acid are able to lower fracture risk in people aged 65 y or over. Inclusion of subjects ($n = 3000$) has been completed by March 2011. Baseline cross-sectional data are used to determine associations between hcy levels and BMD and other bone quality parameters.
Methods.– At baseline, BMD in the femoral neck (FN) and lumbar spine (LS) was obtained using DEXA ($n = 800$, hcy > 12.0 μmol/L). Bone ultrasound attenuation (BUA), speed of sound (SOS) and BMD were measured in 348 of these subjects using a heel ultrasound device. Continuous analyses were done using linear regression, adjusting for possible confounders (age, gender and BMI).
Results.– Continuous hcy levels did not significantly contribute to the prediction of BMD in the FN and LS, obtained using DEXA ($P > 0.7$). BUA, SOS and BMD obtained from the ultrasound device neither were significantly predicted by hcy ($P > 0.5$ for hcy in all models).
Conclusions.– After adjusting for confounders, these preliminary data did not show associations between hcy and bone parameters. For BMD, this has also been observed in some other studies. For BUA, two studies found associations with BMD, however, in these studies a different ultrasound device was used and the effect was only seen in women. All subjects in this study had a hcy level > 12.0 μmol/L, so associations might have been missed. It might be interesting to focus on other endpoints as well, such as bone turnover markers, to discover more about the link between hcy and osteoporotic fractures.

PC-205

Pain control in hip fracture patients. Are we doing things well?

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Background.– Hip fracture patients are at risk for receiving suboptimal analgesic therapy and a poor pain control has been related with worse clinical and functional outcomes. Analgesic treatment with paracetamol and metamizol is usual in the Mediterranean area but this scheme has not been evaluated so far on these patients.
Objective.– To evaluate the prescription and administration of scheduled analgesic therapy and their efficacy on pain control in hip fracture patients in order to plan improvement strategies, if needed.
Method.– Computerized daily records of drug prescription from 51 consecutive hip fracture patients admitted to a tertiary hospital were studied. The unit of record was the "day-of-treatment" and 2 days per week (Sunday and Thursday) were analyzed. Demographic data, type of fracture, cognitive status, and prescribed and administered analgesic drugs were recorded. The highest intensity of pain was scored with a five points verbal rating scale (0–1: mild pain, 2–3: moderate pain, 4–5: severe pain). Relations among prescription, compliance, level of pain and patients characteristics were analyzed.
Results.– The mean age of patients was 85 years and 75% were women. One hundred and sixty-three days-of-treatment were analyzed. The most usual analgesic schedule was a combination of paracetamol in 159 (97.5%) records (oral in 89 [65.6%] and intravenous in 70 [42.9%]) and metamizol in 154 (94.4%) records (oral in 88 [53.9%] and intravenous in 66 [40.5%]). Only 21 patients

had a prescription of tramadol. There was a significant non-compliance, since only 66.3% of prescribed doses of paracetamol and 55.9% of metamizol were administered. Two or more doses were omitted on 34.5% of the days-of-treatment in the case of paracetamol and on 59% in the case of metamizol. Patients had a peak of moderate to intense pain in 77.4% of the preoperative and 74.0% of the postoperative days. There were not differences in compliance based on patient characteristics and there were not differences in pain intensity based on compliance level.
Conclusions.– Policies to improve pain control in hip fracture patients must be implemented. Specifically, it must be considered the suitability of both to use more powerful analgesics and to enhance the compliance.

PC-206

Ace I/D polymorphisms, muscle functions, and body composition of older Koreans

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The purpose of this study was to investigate the associations between angiotensin-converting enzyme (ACE) polymorphism and muscle fatigability by electromyogram in 65-year-old Koreans.
Thirty-nine Korean people aged 65 years participated in the study. Angiotensin-converting enzyme (ACE) I/D polymorphism was determined by a polymerase chain reaction and serum ACE activity using spectrophotometry. Body mass index (BMI) was assessed and body fat mass (BFM) and lean body mass (LBM) were checked by Bioimpedence analysis.
For evaluating the muscle fatigability according to ACE genotype, participants performed an experimental fatigue test. In this test, participants were evaluated maximal voluntary isometric contractions (MVIC) of ankle plantarflexor using dynamic electromyogramin in the sitting position in a chair with hips 90 degrees flexed, knees fully extended, and ankles at the 0 degrees position. Then we instructed continuous submaximal isometric voluntary contraction (40% MVC level), which was an experimental fatigue test. We checked the duration of submaximal isometric contraction and changes to EMG frequency during the initial 2 min. A self-report physical activity questionnaire was used to measure activity level to evaluate its effect on muscle fatigability.
Among the 39 volunteers, 12 subjects had the II genotype, 18 had the ID genotype, and nine the DD genotype. Serum ACE activity level was significantly higher in the DD genotype than the II genotype ($P < 0.05$). Also, duration of submaximal isometric contractions showed the longer duration in II and ID than in the DD genotype ($P < 0.05$). Mean frequency changes in dynamic EMG also revealed significant lower changes in II than the DD genotype ($P < 0.05$). But LBM, BFM, BMI, and the self-reported physical activity questionnaire were independent of the ACE genotype.
In conclusion, the ACE II genotype had significant fatigue resistance compared to the DD genotype. But body composition and BMI were not correlated with ACE I/D polymorphism.

PC-207

Fall in a health center. Comparative study in 5 years after the establishment of an interdisciplinary commission fall

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Objective.– To evaluate the characteristics of falls and study the effective functioning of an interdisciplinary committee of falls.
Methods.– Retrospective study based on data collected on a sample of 82 patients in a Healthcare Centre and 30 patients in a Day Hospital, from January 2006 to December 2010. We designed a log sheet with the following information: patient identification (name, age, sex, location), characteristic of the fall (date, time, place, motive, activity, cause, accompanied or not, pathologies, and consequences).
Results.– Number of falls per year from 2006 to 2010: 77, 50, 50, 43, 60. Number of patients who fall: 56, 36, 35, 36, 38. Sex distribution (men/women): 2006: 37/40, 2007: 25/25, 2008: 18/32, 2009: 22/21, 2010: 23/15.
Prevalent months: 2006: March (11) 2007 May (9) 2008 December (8), 2009: September (9) 2010: July (9). Timetabling, morning (7–15 hrs), afternoon (15–21 pm), night (21–7 hrs): 2006: 26, 44, 7, 2007: 24, 20, 6, 2008: 22, 20, 8, 2009: 19, 16, 8, 2010: 30, 24, 6.
For units, area A (dementia), zone B (MCI), Area C (autonomous), day hospital: 2006: 26, 21, 26, 4; 2007: 13, 10, 23, 4; 2008: 8, 22, 15, 5; 2009: 15, 14, 10, 4; 2010: 25, 22, 12, 1.
Instead of falling (common areas, room, bathroom, gym, others): 2006: 34, 18, 21, 1, 2; 2007: 30, 12, 5, 1, 0; 2008: 20, 16, 13, 1, 0; 2009: 18, 12, 12, 2, 0; 2010: 30, 24, 4, 0, 2. At the time of the fall (patient alone, with family-caregiver, accompanied by professional): 2006: 51, 6, 20; 2007: 34, 4, 11; 2008: 37, 3, 10; 2009: 33, 6, 4; 2010: 42, 5, 13.
Consequences of the fall (without consequences, bruising, injury, dislocation, fracture): 2006: 46, 20, 6, 2, 3; 2007: 34, 8, 6, 0, 2; 2008: 24, 15, 10, 1, 0; 2009: 16, 18, 7, 0, 2; 2010: 33, 16, 8, 1, 2.
Conclusions.– Since the launch of the interdisciplinarity commission has been a significant decrease in the number of patient falls and falling. Team training and monitoring of falls is key to prevention. Noted that in 2010 there are two patients with severe behavioral problems, that despite all the measures implemented added a total of 18 falls, all without consequences.

PC-208

Factors associated with recovery of gait and recovery functional status 2 months after a hip fracture

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Aim.– To assess the factors associated with recovery of gait and activities daily living after a hip fracture in elderly evaluated in an Orthopaedics and Trauma Unit.
Patients and methods.– We conducted an on-going descriptive, prospective, longitudinal, observational case series. In a period of 8 months (May to December, 2010), we have collected data of older than 64 years patients who were hospitalized for hip fracture, present in a regional hospital that received surgical treatment. Participants in the study were selected on the first day of his admission to the Trauma ward. Demographic, clinical, mental and functional and gait status were standardized (age, gender, Charlson Index comorbidity, Barthel Index, Functional Ambulation Classification – FAC –, Pfeiffer and Clinical Dementia Rating – CDR –) Period of monitoring gait and function after hip fracture was collected at the second month. Statistical analyses considered a 95% confidence interval for significance.
Main results.– Of the 159 elderly patients admitted for hip fracture, 129 (81%) met the inclusion criteria to participate in the study. Of these, – mean age 84.8 years old, 77.9% women –, a 2.3% mortality rate was observed during the hospitalization period. At the follow-up time, a 34.4% and a 44.3% of patients had got an optimal recovery or gait and functional status respectively. The only variable associated with recovery of gait, was the FAC at discharge ($P = 0.021$). The variables associated with functional recovery,

were the Barthel Index at discharge ($P = 0.02$), FAC at discharge ($P = 0.002$) and CDR ($P = 0.05$). No other significative relationship was observed with the rest of demographic or clinical variables.
Conclusions.– 1) In our sample, the recovery of gait and functionality of the second month of hip fracture was not a common condition in the elderly. 2) In this study, FAC at discharge showed the strongest association with recovery of gait and functional status 2 months after hip fracture. 3) Functional status at discharge and previous mental status were also important in determining functional recovery in the follow-up period.

Miscellaneous 1//*Miscelánea 1*

PC-209

Yesterday and today the elderly with pneumonia 1990 vs. 2011

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Objectives.– To analyze clinical and epidemiological differences between pneumonia in elderly patients in a geriatric unit in 1990 and 2011.
Methodology.– We compared data from a historical cohort (descriptive study of 1990) with a prospective study of September 2010 to February 2011 which records the patients over 80 years was diagnosed with pneumonia.
Results.– In 1990 there were 91 patients, mean age was 85 years with 53.84% of males. In 2011, 40 patients, mean age 87.3 years with 45% of males. The mortality rate in 1990 was 79.3% and 25% in 2011. There was no fever (38.4%) and leukocytosis (33.4%) two decades ago, while in 2011 remained afebrile (67.5%) and without leukocytosis (75%). Aspirate was 56.5% in 1990 against 17.5% in the current study. The use of antacids was 15.3% in 1990 and 67.5% (inhibitors of proton pump) in 2011. The presence of nasogastric tubes decreased from 28.5 to 5%. Radiological confirmation was a 51.64% 20 years ago in 2011 being 87.5%. Bacteriological confirmation by 5.49% in 1990 rising to 15% two decades later. Antibiotic in the association had 68.42%, with 35% today. The most commonly used antibiotics were the cephalosporins, 74.72%, currently the antibiotic of choice is the quinolones in 42.5% of cases, followed by 37.5% lactam. The combination was most commonly used second-generation cephalosporin/aminoglycoside in 1990, and in our day beta-lactams/quinolones.
Conclusions.– 1. Significant reduction in mortality that have influenced, among other factors, improved management of aspiration. 2. The antibiotics of choice have changed over the past 20 years. 3. The widespread use of antacids in the population is reflected in our work with a substantial increase in its use. 4. Today radiologic confirmation for the diagnosis of pneumonia, ''gold standard'' is more used than in 1990.

PC-210

Effects of knowing prognosis in palliative oncologic aged patients

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Objective.– Describing what patients admitted to a Palliative Care Unit need and receive regarding to diagnostic and prognostic information, and its relationship with the concurrence of psychological symptoms.
Methods.– Retrospective description of 100 patients admitted to the unit in the last year. Data received statistical analysis with SPSS-11.
Results.– There was a high prevalence of psychological symptoms like insomnia 42.2%, anxiety 42.1%, delirium 35.3% and depression 25.5%. Up to 29.7% needed psychological consultation, but only 2.3% were aggressive.
At admission most patients 52.3% had no prognostic information, but only 18.8% of patients didn't knew diagnosis and 6.9% of relatives didn't know prognosis. Only two patients had expressed some living will planning.
There is a statistically relevant relationship between:
– prognostic awareness and anxiety (OR: 3.55; CI 1.90–6.64)and with insomnia (OR: 2.39; CI: 1.29–4.29) but not with depression or delirium;
– diagnostic awareness and anxiety (OR 2.14; CI: 1.09–4.55) and insomnia (OR 2.21; CI: 1.04-4.07);
– age over 75 years and patient less frequent acknowledge of diagnosis and prognosis;
– unit who monitors the patient and prognostic awareness: most patients followed by Home Palliative Care Unit or Geriatric Unit know prognosis and most followed by general practitioners unknowns it.
Most patients who know prognosis need psychological consultation, but this was statistically irrelevant.
Sedation was unnecessary in 35.4% of patients. Most patients needed sedation in the agonic period 47.3% and only 6.7% for refractory physical symptoms, 1% refractory psychological symptoms and 9.9% both. There was no relationship between sedation and prognostic awareness.
Conclusions.– Although most patients' don't receive prognostic information, especially the elderly and those followed by general practitioners, those who receive it develop psychological symptoms of difficult control that need specialized consultation, not available at our Unit.

PC-211

Prevalence of pressure ulcers in a unit of multimorbidity from 2002 to 2010. Impact of a prevention campaign

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Introduction.– Since 2002, Health Management Mallorca (GESMA) devotes its attention to geriatric patients. The patient has a profile multimorbidity high level of dependence and risk of pressure ulcers. In 2008, a program geared GESMA prevention of pressure ulcers.
Objective.– Check the effectiveness of the program in place.
Methodology.– Longitudinal descriptive study, with three cuts: November 2008, May 2010, and an initial cut in June 2002 in which not all variables are studied. Population: all patients admitted to the unit of care for patients with multiple comorbidities at the time of study. Study variables: age of the patient, assessment of PU risk by the Braden scale, pressure ulcer on admission, the ulcer stage. The prevention campaign included: change in surface pressure management, training workshops on the use of prevention materials, health and skin care, nutrition, use of male collector, patient-centered health education and caregiver.
Results.– In 2002, studied 23 patients, in 2008 31 patients, 29 patients in 2011. Average age of ulcer patients: 79 years in 2002, 82.7 years in 2008, 79.2 in 2011. Prevalence of PU: 22% in 2002, 25% in 2008, 24% in 2011. Patients at risk according to Braden: 52% in

2002, 42% in 2008, 79% in 2011 prevalence of ulcers in relation to risk: 100% in 2008, 30% in 2011 UPP domestically: 23% of the total in 2008, 14% of the total in 2011 Distribution of ulcers by stage (there are patients with multiple ulcers):

Stage	2002 (%)	2008 (%)	2011 (%)
I	0	18.75	45.45
II	12.5	31.25	27.27
III	37.5	21.88	27.27
IV	50	18.75	0

Conclusions.– While we can not act on the ulcers of external origin, despite having raised the average age of patients admitted, we find the effectiveness of preventive measures, given the decline in the incidence and stage of existing ulcers.

PC-212

Pneumococcal and legionella urinary antigen tests for elderly patients

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Objective.– To evaluate the use of pneumococcal and legionella urinary antigen tests (UAT) in patients over 65 years.
Patients and methods.– Retrospective review of clinical records and radiographs of patients over 65 years who underwent UAT when attended at the emergency department between December 2009 and May 2010. UAT was performed using immunographic techniques (BinaxNOW®). Urine samples that had previously tested negative for pneumococcal UAT were concentrated 25-fold by selective ultrafiltration (Minicon®) for legionella UAT detection. The presence of radiological infiltrates, diagnosis and factors associated with severe immunodeficiency were evaluated. Ten patients derived from other acute hospitals were not included.
Results.– During the study period UAT were performed in 476 patients: 357 (75%) were over 65 years. Clinical presentation was: lower respiratory tract infections (LRTI) with a radiologic consolidation in 126 patients (35.3%), LRTI with a poorly defined infiltrate in 22 (6.2%), LRTI without any radiologic infiltrate in 138 (38.7%), heart failure in 49 (13%) (30 cases with concomitant LRTI), other respiratory diseases in four (1.1%), other infections in 11 (3.08%) (one patient with meningitis), and suspected infections in patients with a severe immunodeficiency in six (1.6%).
The pneumococcal UAT was positive in 21/357 patients (5.9%) with the following diagnosis: LRTI with a radiologic consolidation in 16/126 (12.7%), LRTI without any radiologic infiltrate in 3/138 (2.2%), heart failure with concomitant LRTI 1/30 (3.3%) and 1/1 meningitis. The pneumococcal UAT was uninterpretable in 8/357 patients (2.2%) with the following diagnosis: LRTI with radiologic consolidation in 4/126 (3.2%), LRTI with a poorly defined infiltrate in 1/22 (4.5%) and LRTI without any radiologic infiltrate in 3/138 (2.1%). All patients with positive or uninterpretable pneumococcal UAT and no radiologic consolidation had chronic pneumopathy.
Legionella UAT was tested in 336 patients, and it was positive in 2/105 patients with LRTI who had radiologic consolidation (1.9%).
Conclusions.– Most patients tested for UAT were over 65 years old and radiologic consolidation was present in one third only. UAT showed a low performance in patients with LRTI who did not have radiologic consolidation.

PC-213

Anal incontinence in the elderly: main clinical and functional data from a sample of older inpatients

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Background.– Anal incontinence is considered one of the major Geriatric Syndrome, but its recognition is low among health professionals, as well as among the elderly themselves. The outcome is that many times, the care given to the elderly, may not be the most appropriate.
Objectives.– To describe the main characteristics of an older inpatients sample with anal incontinence.
Methods.– Cross-sectional descriptive study based on a health questionnaire (140 items) addressed to know the prevalence as well as the main clinical and functional characteristics of the older inpatients with chronic anal incontinence admitted in the Acute Unit Care of the Geriatric Department during 6 months. The questionnaire application and the physical examination were done by the same physician. Clinical variables: demographic data, comorbidity based on the Charlson Index, prior pelvic surgery, pharmacologic history, physical examination, previous diagnostic procedures and medical treatments for anal incontinence. Functional variables: ADL index, mobility, cognitive impairment.
Results.– Sample: 80 patients (mean age 80.5; range 69–103 years; 55% females). Subgroup of incontinent patients: 48 (mean age 86.5; range 69–99; females 29 cases: 36.2%); mean comorbidity based on Charlson Index was 4.9; 29 cases (60%) previously had some kind of anal surgery; and four cases (8.3%) had defecatory urge. In more than half subgroup, the Wexner score exceeded 10 and 30 cases (62.5%) reached the maximum score. Seventy-seven percent of the incontinent patients (37 cases) had cognitive impairment in different stages and 43.5% (21 cases) had functional dependency on ADL. 39.5% (19 cases) were setting in a nursing home. Only three cases (6.2%) asked for this condition, although all patients underwent a study. To 36 cases (75%) were offered some kind of treatment, mainly conservative therapies such as hygienic and dietary recommendations, but no patient proposed other specific type or surgical treatments.
Conclusions.
1) The assessment of older patients who suffer chronic anal incontinence is limited, as well the medical recommendations.
2) We suggest a Comprehensive Geriatric Assessment to acknowledge all the medical and functional characteristics of older patients with chronic anal incontinence in order to offer the best way to evaluate and treat this important health problem.

PC-214

The status of urinary incontinence among women living in a residential care centre and the quality of life of the women suffering from urinary incontinence

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Introduction.– Aging, which is physiologically inevitable, begins with birth, and it is a process ending with death. Demographers predict that geriatric population will consist of approximately 20% of the total population of the world in 2050. One of the most frequent and important problems of geriatric population is urinary incontinence that brings about both individual and social problems. The aim of our study is to determine the prevalence

of urinary incontinence among the population who live in residential care centers and the effect of this significant problem on their quality of life.
Method.– The sample of this cross-sectional research consisted of 211 elderly women who live in a residential care centre in Izmir. Two forms : Information Form for the Elderly and Incontinence Quality of Life Questionnaire (I-QOL) were used to gather the data related to this research.
Result.– The mean age of the elderly women who took part in the research was 77.46 ± 6.36. It was also determined that 91.5% of these elderly women had a vaginal delivery and 17.5% had a urogynecological operation. It was found that 46.9% of the women included in the study suffered from frequent urination. Urinary incontinence was determined among 23.2% of the women included in the research. It was determined that 46.9% were experiencing mixed-type incontinence. The rate of such women who sought medical advice was found to be 12.2%. The mean I-QOL score was found to be 72.80 ± 18.97.
Conclusion.– Despite the fact that urinary incontinence is a frequently encountered geriatric syndrome in the elderly, it has a low diagnosis rate. This problem affects the quality of life of the individual negatively in physical, economic, and psychosocial terms. The complaint of urinary incontinence should not be perceived as a sign of elderliness, and the underlying cause should be treated. The elderly women may not talk to healthcare providers about this problem for various reasons. Therefore, healthcare providers should routinely ask such women about the complaint of urinary incontinence. As a consequence, the awareness of both women and healthcare workers would be raised about the importance of the complaint of urinary incontinence.

PC-215

Urinary tract infections in elderly people institutionalized in Caser Residencial A Zapateira, A Coruña, Spain

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Objective.– The aim of this study was to describe and register the number of urinary tract infections (UTI) in elderly institutionalized patients at Caser Residencial A Zapateira nursery home in A Coruña, to know prevalence, more common pathogens and antibiotics used.
Methods.– Non experimental transverse- retrospective study of the clinical records of elderly patients in Caser A Zapateira, between January 2010 and April 2011 considering the following determinants most commonly controlled for in epidemiological studies: age, sex or gender, clinical diagnosis and antibiotics used. A descriptive and comparative analysis was performed to collected data.
Results.– One hundred and eighty-nine clinical records residents were reviewed, 76.71% were female, and 23.28% male, minimum age 60 years old. 77.77% were between 75 and 95 years old. The diagnosis of urinary tract infection was found in 11.03% female and 15.9% male. 18.46% have permanent urinary indwelling catheter, 91.30% use adult diapers for urinary incontinence or double incontinence. 81.25% female and 42.85% male have a diagnosis of demence. Sixty-nine percent both gender. In urine culture the most common pathogens were *E. coli* (44.44%), *Proteus mirabilis* (22.22%) and *E. coli* BLEE-producer (11.11%). The most used antibiotics were ciprofloxacino (66.15%), sulfametoxazol/trimetropin (24.61%) and fosfomicina (16.92%). Resistance to ciprofloxacino was 62.96%.
Conclusions.– Urinary tract infection (UTI) is a common pathology in elderly institutionalized patients. We found predisposing factors like demence in a half of the incontinence cases that require to use the adult diapers in most of the patients. Those patients who have a permanent urinary indwelling catheter show an urinary tract infection in their totality. The most common pathogen is *E. coli* with a high resistence to ciprofloxacino.

PC-216

Is it the same respiratory infection in elderly patients with and without dementia?

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Objectives.– To compare clinical and epidemiological aspects of respiratory infection in elderly hospitalized patients with and without dementia.
Methodology.– Descriptive and prospective study from September 2010 to February 2011 which included all patients with diagnosis of respiratory infection. We assessed sociodemographic, clinical, laboratory, radiology, treatment, functional status (Barthel), cognitive (Pfeiffer) and comorbidity (Charlson).
Results.– One hundred and twenty-three patients with respiratory infection. Fifty-two percent with dementia (35% female with a mean age of 84.8 years and average stay of 14.8 days). No statistically significant difference with the group without dementia (30.9% female, mean age 87.5, stay 13.6 days) The group with dementia had a higher incidence of aspiration ($P = 0.002$), malnutrition ($P < 0.001$), delirium ($P < 0.001$), use of neuroleptics ($P = 0.003$), dysphagia ($P < 0.001$), thickeners ($P < 0.001$), adjusted for dysphagia diet ($P < 0.001$), and origin in residence ($P = 0.005$). The group without dementia had better functional index both at admission and at discharge ($P < 0.001$). There were no significant differences between treatment groups received the same duration and onset, comorbidity, use of other drugs, analytical data, and indicators of sepsis, radiological confirmation and mortality.
Conclusions.– 1. Older people with dementia and respiratory infection have worse functional index and come residence more often. 2. Increased incidence of dysphagia, aspiration and malnutrition in patients with dementia who require proactive preventive measures. 3. Patients with dementia and respiratory infection have significant risk of delirium during hospitalization. 4. In our sample we did not find differences in mortality between patients from both groups unlike other studies.

PC-217

Associations between dysfunctional pain in younger elderly and physical loads through life. Results from baseline examination in a longitudinal study

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Introduction.– Pain is one of the most common reasons for seeking primary health care services. There are associations between pain, sleeping disorders and depression, hence pain easily develops into a chronic condition. Pain increases with age, but few studies are made on the older, non-working population and possible associations between pain and physical load in previous life are largely undefined. The aim of this study was to estimate the associations between dysfunctional pain (DFP) in a sample of younger elderly, and different physical loads through life.
Method.– The sample ($n = 548$) derives from a national longitudinal study; the Swedish National Study on ageing and care. DFP at the baseline examination from four age cohorts (60, 66, 72 and 78 years) were correlated to different physical loads earlier in life. DFP

was defined as positive scoring on both the SF12 and EQ5D surveys. Standard variables were: grow up environment, BMI > 25, smoking, physical loads and risk factors at work, sports competition, education, age and gender. Logistic regression was used, and Odds ratios (OR) were calculated with 95% CI.
The study has been approved by the Ethics Committee of Lund University (LU 605-00, LU 744-00).
Results.– DFP was reported by 47%. Pain in the leg, knee and foot was the most common complaint (73%), followed by back/pelvis (60%) and shoulder/arm (53%). OR for BMI > 25 was 1.79 (95% CI; 1.14–2.82), smoking 1.90 (95% CI; 1.26–2.88), physical work load 1.60 (95% CI; 1.01–2.55), risk factors at work 3.44 (95% CI; 2.11–-5.59), age 1.05 (95% CI; 1.02–1.08) and gender 2.25 (95% CI; 1.47–3.43).
Conclusion.– Associations between DFP in younger elderly, and physical loads through life were shown by the independent associations to risk factors at work, gender, smoking, over weight and heavy physical work load.

PC-218

An assessment of the educational needs of general practitioners caring for older people

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Introduction.– Most regular care for older people is provided in the community by general practitioners (GPs). It is not known how much training or education in geriatric medicine this group has received, or whether they find certain aspects of this work challenging. This project aimed to perform a needs assessment in advance of an e-learning intervention.
Methods.– The needs assessment was posted to all 214 GPs in the region (Mid-West of Ireland). It involved a quantitative survey questionnaire. Participants were invited to partake in an additional focus group to explore the area in more detail. Ethics approval was obtained from the Irish College of General Practitioners.
Results.– Fifty-seven GPs (26.6%) responded to the needs assessment. Most respondents practiced in urban, group practices and estimated a mean of 27.8% (range 5–65, SD 11.8) of patients to be over 65 years of age. Seven percent had a postgraduate qualification in geriatric medicine and 52.6% had previously received formal training in geriatric medicine (mean amount of time was 3 months [range 0–24 months; SD 4.32]). Almost all respondents had a practice computer, electronic records and access to broadband Internet. Fifty-eight percent of respondents found dealing with older patients difficult, and 3.5% very difficult. The three most requested areas for further education were: safe prescribing; assessment of falls, syncope and mobility impairment; and dealing with legal and ethical issues. Relevant challenging areas identified in the focus group included polypharmacy, stopping inappropriate medication and difficulty finding information about how to manage older patients. Focus group participants expressed a strong desire for more education in this area.
Conclusion.– GPs care for a significant proportion of older people, and most find aspects of the role a challenge. Few GPs hold a qualification in geriatric medicine and less than half had received formal training. GPs highlighted a need for further education in several areas, particularly prescribing, falls and legal issues. This study establishes a need for closer educational links with GPs and indicates the areas that should form the focus of this support.

PC-219

A comparative study of interventions to help general practitioners answer clinical questions on geriatric medicine

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Introduction.– Previous research has indicated general practitioners (GPs) have an educational need in geriatric medicine and may find it difficult to access relevant, up-to-date, comprehensible and timely information to help answer their clinical questions. This project aimed to compare two methods of education in geriatric medicine: a traditional subject-specific course, and an intervention, which additionally aimed to help GPs improve their information seeking skills.
Methods.– Using data from a previous needs assessment of GPs' educational requirements in geriatric medicine, an e-learning course was designed to meet key relevant learning objectives. Another intervention, which taught GPs how to find the information to answer the questions themselves was also designed. Both interventions were made available without charge to GPs who had registered their interest and delivered through a secure online virtual learning environment. Both delivery formats were compared in terms of rates of uptake and effect on a pre and post-course test of knowledge in geriatric medicine. Ethics approval was obtained from the Irish College of General Practitioners.
Results.– Of 214 GPs in the area, 57 registered for the study. During a two-month period 23 people (40.4%) completed the traditional intervention and 15 (26%) completed the information skills intervention. Of the 19 participants who completed the pre-course test, only six went on to do the post-course test. Two of the six had completed both interventions. The mean increase in score was 18.3%. Two evaluations were completed, giving positive feedback.
Conclusion.– An e-learning intervention to teach geriatric medicine was feasible and resulted in increased knowledge, although participation was low. There was also a low uptake of post-intervention knowledge tests. It was not possible to assess if the novel intervention conferred additional benefit. Further studies are needed to identify barriers and to increase engagement so that education in geriatric medicine can be tailored to GPs' needs.

PC-220

Clostridium difficile infection in elderly patients: prognostic factors of recurrence

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Introduction.– Recurrence rate of Clostridium difficile infection (CDI) is about 20% and occurs generally in the 60 days following index infection. In elderly people, recurrence rate is two times more common than in younger population, and has more severe consequences because of an underlying frailty state. The aim of the study was to identify independent factors of recurrence of CDI.
Method.– Retrospective cross-sectional study set up between January 1st, 2007 and September 30th, 2009 in four medical wards of the University Hospitals of Reims (France). Patients included had all CDI, in accordance with The French National Sanitary Surveillance Institute and European guidelines. Recurrence of CDI was defined as recurrence of symptoms after clinical recovery within the 8 weeks following index infection. Measurements included socio-demographic data (age, gender, marital status…), administrative information (mode of admission, ward of hospitalisation, length of stay, outcome…) and clinical characteristics (functional and cognitive statuses, presence of pressure sores, type

of antibiotic treatment...). Independent prognostic factors were identified with a logistic regression model.
Results.– The 85 included patients were 69 ± 19 years, with a majority of women (67%). White cells count was 11,700 ± 7797 per mL, with 26% of patients over 15,000 cells/mL. Serum albumin rate was on average 29 ± 7 g/L (33% under 25 g/L). Mortality rate was 11% (mean time to death: 20 ± 14 days). Main reasons for hospitalisation were infection (47%) and digestive diseases (45%). The more common sites of infection were pulmonary and digestive (29% each). CDI recurrence rate was 16.5% (n = 14); 50% of them were the first recurrence. The mean length of antibiotherapy was 10 ± 2 days. Independent prognostic factors of CDI recurrence were admission for urinary infection (OR = 9.7, 95% CI: 1.3–74.6) and treatment with pristinamycin within the 4 weeks preceding the index infection (OR = 17.9, 95% CI: 1.4–224.0).
Conclusion.– Early identification of prognostic factors of CDI recurrence allows targeting and management of patients at higher risk. Indeed, elderly people especially at risk of recurrence and severe forms of CDI infection need to be well managed to avoid or to decrease negative outcome (loss of autonomy, morbidity, and mortality).

PC-221

Belt restraint reduction. a real possibility in a Gerontologic Center

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Objective.– Belt restraint reduction and alternative measures development.
Method.– During 2010 literature review, external educational intervention and policy change about restraints was made in our organization. Families and staffs agreement was asked. Data regarding residents use of belt restraints in bed and chairs, bed rails, residents health problems, functional abilities, psychoactive drugs, falls and cognitive impairment were collected and the main reason for the use of the restraint was reported. Each case was analysed individually in order to remove de restraint.
Results.– From January 2010 to April 2011 the percentage of restraints decreased from 33% (41/121) to 15% (18/119). The patient profile were women, average age of 85, 59% with Barthel below 40, 70% with MEC below 20, 70% with urinary incontinence. The falls rate didn't increase from the beginning of the intervention and the number of falls remained about the same though almost one out of two suffered from a fall over the last 12 months (43%). The main reason for using the restraint was the risk of fall among people with high balance and gait impairment added to a moderate or severe cognitive impairment. One by one the different risk factors were reviewed and modified if necessary and alternative intervention was implemented. We tried to avoid using belt restraints in the new income.
Conclusion.– Belt restraint was common practice in our Gerontologic Center and our first concern for using them was patient's safety. We had a protocol we applied before indicating the measure and family consent was required.
Educational approach and a real change in attitudes and opinions regarding restraint use among all the staff has been essential to reduce the number of them. The development of alternatives measures and interventions represent a real challenge for the future.
The support and agreement from management are crucial for the success of these programs.

PC-222

Frequency of thyroid pathology in acute geriatric unit

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Objectives.– To describe the frequency of thyroid disease in patients admitted to the Acute Unit of Hospital Virgen del Puerto of Plasencia and correlate with factors such as age, sex and functional status (independent for basic activities of daily living, partially dependent and dependent total).
Patients and methods.– This is a descriptive study on patients admitted to our unit in 2009. We collected data from medical records: age, sex, clinical situation and diagnosis of thyroid disease (hypothyroidism established, subclinical hypothyroidism, hyperthyroidism and subclinical hyperthyroidism).
Results.– In 2009 admitted to our hospital for acute cases, 484 patients, of whom 52 were diagnosed with thyroid disease with a mean age of 85.46 years (age range: 80–94). Of the sample, 34 were women (65.38%) and 18 were men (34.61%). Functional independence had 33 of the 52 patients (63.46%), partial dependence 5 (9.6%) and were dependent total 14 (26.92%). If we correlate the type of pathology and gender, we note that 22.22% of men had hyperthyroidism and hypothyroidism by the same percentage (22.22%).
Subclinical hypothyroidism was diagnosed in 27.78% and subclinical hyperthyroidism in the same percentage (27.78%).
In women, the predominant pathology was observed hypothyroidism, for various reasons (35.29%), followed by subclinical hypothyroidism (23.53%), hyperthyroidism equal percentage (23.53%) and finally, subclinical hyperthyroidism (17.64%). Relating functional status and thyroid pathology observed that the most common conditions in total dependent patients was subclinical hypothyroidism (42.88%), followed by hypothyroidism (28.57%) and subclinical hyperthyroidism by 21.43%. In the partial dependent hyperthyroidism was observed in 60% and subclinical hypothyroidism in 40%. Patients independent from the functional point of view presented as hypothyroidism predominant pathology in 36.36%, subclinical hyperthyroidism and hyperthyroidism in the same proportion (24.24%) and subclinical hypothyroidism in 15.15%.
Conclusions.– We conclude that 10.74% of patients admitted in our unit have different causes thyroid disease and most frequently seen among men is subclinical hypothyroidism in the same proportion as subclinical hyperthyroidism (27.78%) and among women with subclinical hypothyroidism followed hypothyroidism and hyperthyroidism in the same proportion, subclinical hypothyroidism, being the most frequent among the total dependent patients, hyperthyroidism, between partial dependent, and hypothyroidism among independent patients.

PC-223

Clinical presentation, predisposing factors and functional status of very elderly patients hospitalised with venous thromboembolism

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Introduction.– Despite increasing incidence, prevalence and morbidity with age, little information is available regarding diagnosis and management of venous thromboembolic disease (VTE) in the older old.

Methods.– Registry of all individuals over the age of 75 admitted to a tertiary hospital with a diagnosis of Pulmonary Embolism (PE) or Deep Vein Thrombosis (DVT) between January 1st 2006 and January 1st 2009. Individuals admitted to our Acute Geriatric Unit (AGU) underwent comprehensive geriatric assessment and targeted intervention and all patients received care in accordance with contemporary European Society of Cardiology guidelines on the diagnosis and treatment of pulmonary embolism.
Results.– We included 289 patients (142 admitted to our AGU and 147 hospitalised under the care of other specialists) with a mean age of 83.8 years; 67.4% females and 11.3% nursing home residents. Moderate to severe functional or cognitive impairment was recorded in 36.9% and 25.2% of cases respectively. VTE was the main reason for admission in 8305% of cases and diagnosed as a complication during hospitalisation in the remaining 16.5%. Mean Charlson comorbidity index was 1.66 and individuals endured on average three comorbidities, particularly hypertension (57.4%), malignancy (23.3%), atrial fibrillation (20.9%), diabetes (19.9%) and dementia (14.4%). The most frequent predisposing factors for VTE were immobility (30.5%), COPD or heart failure (23.6%), malignancy (21.6%), previous VTE (18.9%), and paralytic stroke (17.8%). The main presenting complaints included dyspnoea (61.3%), chest pain (31.8%), cough (14%), syncope (2.7%) and haemoptysis (2.4%). Anticoagulation was prescribed in 83.9% of subjects, 7.8% received antiplatelet drugs, and a venous filter was used in five cases. Mean length of stay was 16.2 days, 46 individuals died in hospital (15.9%) and survival rates at 6, 24 and 30 months were 79.6, 64.9 and 45.2% respectively.
Conclusions.– Despite higher prevalence of cognitive and functional impairment demonstrated in our cohort of very elderly patients treated for VTE whilst in hospital, the predisposing and presenting factors appear similar to those previously reported for younger individuals.

PC-224

Evolution of renal function in patients older than 80 years-old

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Aim of study.– To study the evolution of renal function in patients older than 80 years-old referred to a Nephrology unit.
Patients and methods.– This is a retrospective study designed to analyse the evolution of renal function in 80-years-old or older patients referred to our Nephrology unit. All patients attended with a follow-up longer than 6 months were included in the study. Basal and final creatinine levels were obtained, renal function was evaluated according to Cockcroft-Gault formula. Evolution of renal function was calculated as the difference between basal and final Cockcroft-Gault clearance divided by the follow-up period in years.
Results.– One hundred and forty-five patients were included with a mean age of 86.3 ± 3, 57.2% were women, and a 3.02 years mean follow-up. Mean serum creatinine levels at basal and final moments were 1.7 and 1.59 mg/dL, and basal and final Cockcroft-Gault clearance were 26.2 and 33.9 mL/min, respectively. Evolution of renal function was a mean recovery of 0.74 mL/min/year. Fifty-five percent of patients achieved a recovery of renal function, 25% showed a stable renal function with a loss lower than 2 mL/min/year, 17% developed a renal function impairment of 2-5 mL/min/year, and only 3% developed a renal function impairment greater than 5 mL/min/year.
Conclusion.– Mostly very old patients referred to our Nephrology unit with a long follow-up period recovery renal function. Only one to five patients deteriorates renal function. Nephrology care in these patients contributes to avoid renal failure progression.

PC-225

Rethinking the use of physical restraints: an observational and interventional study in hospitalized elderly patients

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Introduction.– Physical restraints are defined as any means of restricting another's freedom of movement. Restraints are considered a form of medical treatment and their use is often justified to prevent falls, control disruptive behavior and allow medical procedures. An effort must always be made to use the least restrictive available method of restraint, and to restore the maximum level of independence. Most studies focus in nursing homes but studies on inpatients in geriatric acute care are lacking.
Objectives.– To assess the incidence rate of physical restraints, the type and period of introduction. In a second phase, to identify strategies for the implementation of an educational program to reduce the use of restraints and to promote methods for achieving safety.
Methods.– Observational study of routinely collected data over a 15-month period, between January 2010 and Mars 2011, in the Rehabilitation and Geriatric Hospital (300 beds), Geneva University. Proportions were compared using a Chi^2 test.
Results.– Five hundred and thirty-six episodes of physical restraints were registered in 243 patients (mean age 84.5 ± 7.7; 54% women); 68.7% of these episodes justified to prevent fall. The total incidence rate was 6.5%. We compared rates in our specialized dementia unit receiving patients with behavior disturbances due to acute somatic disease to the other general geriatric units. In the dementia unit, the total rate (42.8 vs. 5.0%, $P < 0.001$) and the use of belts (42.6 vs. 25.6%, $P < 0.001$) were significantly higher and more restraints were introduced in the acute phase of hospitalization (63.9 vs. 49.9%, $P = 0.004$). A higher use of bedrails occurred in general units (89.5 vs. 80.6%, $P = 0.006$).
Conclusion.– Physical restraints are prevalent in geriatrics acute care, especially in dementia unit because of the characteristics displayed by the patients in this unit. Reducing the use of physical restraints is an important challenge, which is being promoted by care givers from all segments of the health care team. The implementation of a special program to reduce physical restraints with alternative safety measures, especially in demented patients, remains our next goal.

PC-226

Percentage of vestibular dysfunction in 361 elderly citizens responding to a newspaper advertisement

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Introduction.– Elderly patients with vestibular dysfunction have an eight-fold increased risk of falling compared to other fall patients. We believe that elderly patients with vestibular dysfunction either don't consult their GP or have been abandoned by their GP. The aim of this study was to identify the percentage of vestibular dysfunction among elderly citizens with complaints of dizziness responding to a newspaper advertisement.
Method.– To recruit elderly citizens with dizziness we advertised in a local newspaper. A telephone interview with the respondents was done by a physiotherapist (PT). If the PT concluded that the reason for the dizziness could be vestibular dysfunction the citizen

was invited to further examinations. The citizen was tested by the PT and a nurse in the Fall Clinic, Department of Geriatrics, Aarhus University Hospital. If the patient was still under suspicion of vestibular dysfunction he/she was examined by a geriatrician and eventually by a specially trained otoneurologist on the ENT Department, Aarhus University Hospital.
Results.– Three hundred and sixty-one elderly citizens responded to the advertisement. Eight patients had alcohol problems, 14 had significantly impaired vision, 42 had evidence of orthostatic hypotension, 49 didn't want to participate, 50 had evidence of Benign Paroxysmal Positional Vertigo (BPPV), and 74 had disequilibrium without dizziness. One hundred and twenty-four patients were suspected of vestibular dysfunction and further tested in the Fall Clinic. Seventy-one of these patients have been seen until now and in 37 (52%) vestibular dysfunction were diagnosed. BPPV was diagnosed in 21 (30%) of the patients having vestibular dysfunction. Of 37 patients having vestibular dysfunction, 16 needed further testing in the ENT Department. BPPV was diagnosed in further four patients.
Conclusions.– Vestibular dysfunction among the elderly is an overlooked problem and may be relatively simply diagnosed by vestibular bedside tests. In this study surprisingly many citizens had BPPV, which can be diagnosed by the Epley maneuver or the Roll test.

PC-227

Experiences of older non-institutionalized cancer patients and informal caregivers during a treatment with chemotherapy and/or radiotherapy and the need for support in view of the (after) care period

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Introduction.– Little is known about older cancer patients and their needs for support, often they are excluded from studies because of their age and/or comorbidities. Additionally, the influence of specific gerontological or geriatric factors on the consequences of the oncological treatment is not enough known to use as a base for coordinated care. The present study aims to use a contextual approach to get a better understanding of the lived experiences of older patients and their caregivers when confronted with cancer and the oncological treatment.
Method.– Semi-structured interviews were separately conducted with 31 patients and 19 informal caregivers. All the patients, recruited within a university hospital, underwent an ambulant oncological treatment. Interviews were transcribed and analysed according to the constant comparative method.
Results.– The various topics obtained from interviews with patients and their caregivers were grouped together in major themes: experiences with professional caregivers, strengths, stressors, coping strategies, needs for support, tasks in life because of the disease, relationships with their environment and living with the disease at home. These major themes could always be framed within the life story and the relationship history of the patient and his/her caregiver. Consequently, the lived experiences of these elderly and their caregivers interact. Both life stories and the relationship history, influence the way they both deal with the disease and the treatment.
Conclusions.– The life stories and the relationship history of the patient and his/her caregiver, instruct the nurse about the needs and wishes that are paramount. Listening to the stories and integrating these data in the delivered care, makes sure that 'tailored care' and 'integrated care' between the hospital and the home situation is made possible.

PC-228

Hemodialysis in patients older than 70 years. Predictors of mortality within the first one year of renal replacement therapy

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Objectives.– To describe the characteristics of the patients $>$ 70 years old who required renal replacement therapy at an hemodialysis unit.
To analyze the factors associated to death in the first year of hemodialysis.
Methods.– Observational study. Inclusion: patients $>$ 70 years old included at hemodialysis unit since 1996 until March 2006. Demographic, laboratory data, degree of autonomy, comorbidity, nephrology follow-up time, time on dialysis, renal disease diagnosis, causes of death and exclusion of dialysis. Comparison of proportions (Chi^2) and mean (*t*-Student), binary logistic regression.
Results.– N = 104 (40.6% of all hemodialysis patients). Men 66.3%. Age: 76.4 $\pm$ 3.9 years, $>$ 80 years old 16.3%. **Family Structure**: live alone 6.2%. **Functional status**: independent 84.2%. **Comorbidity:** Abbreviated Charlson Index. 3.4 $\pm$ 1.2; hypertension 88%; DM 27%; ischemic heart disease 16.5%; heart failure 28%; cerebrovascular disease 15.5%; peripheral vascular disease 21.4%; cancer 17.6%. **Nephrology follow-up before dialysis:** 29.2 $\pm$ 41.2 months; No previous follow-up 27.2%. Time on dialysis 1.98 $\pm$ 1.4 years. **Primary renal disease:** vascular: 27.2%, DM 20.4%, interstitial 11.7%; glomerular 10.7%. **Diagnosis:** clinical suspicion 69%, biopsy 12%. **Reason to start hemodialysis:** normal evolution of primary renal disease 77.7%, acute presentation 22.4%. **Creatinine at first dialysis** 8.07 $\pm$ 2.4. Creatinine clearance: CKD-EPI equation $<$ 5 (41%). **Others:** hemoglobin 10.04 $\pm$ 3.9, albumin 3.21 $\pm$ 0.45. **Hemodialysis exclusion:** death 97.4% transplant 2.6%. **Cause of death:** cardiac 26.2%, cancer 21.5%, vascular 15.4%, digestive 12.4%. **Survival:** $>$ 1 year 78.8%. **Comparison of patients with survival $>$ 1 year vs. $\leq$ 1 year** ($P < 0.05$): independent 91.1% vs. 59.1%; months of regular monitoring by nephrology 33.48 $\pm$ 44.50 vs. 12.62 $\pm$ 17.45; Presence of HBV antibodies 7% vs. 0%; Hemoglobin 10.52 $\pm$ 4.37 vs. 8.40 $\pm$ 1.39, albumin 3.36 $\pm$ 0.38 vs. 2.74 $\pm$ 0.32, ESR 64.45 $\pm$ 45.50 vs. 109.14 $\pm$ 21.48. In logistic regression analysis, factors associated with survival $<$ 1 year were: hemoglobin and abbreviated Charlson index (R2Cox-Snell 0.212).
Conclusions.
– It is not uncommon to include in hemodialysis patients over 70 years old. They are usually patients with preserved functional status but with comorbidity.
– At the beginning of hemodialysis almost half of patients have creatinine clearance less than 5.
– The main cause of kidney disease is vascular. Death is the most common reason to stop dialysis and the first cause of mortality is cardiac death.
– Over 75% survive more than 1 year.
– Greater comorbidity and fewer hemoglobin levels were significantly associated with survival $\leq$ 1 year.

PC-229

The efficacy of patient education programme and exercise on health-related quality of life and function

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Introduction.– Decline in function is common among older people after hospitalization. Geriatric day-hospital (GDH) is

regarded as an attractive setting for older patients who experience functional decline. Older people can benefit from strength and balance training but low adherence has been reported after discharge. Knowledge of the benefits of physical activity together with home-exercises is suggested to increase participation in physical activity. The purpose of the study was to evaluate the efficiency of an exercise- and education based programme on health-related quality of life, balance-self-confidence, functional performance for patients admitted at a Geriatric Day-Hospital (GDH).

Methods.– The sample was recruited from a GDH in Norway. The design of the study was a randomized controlled trial with one Intervention group (IT) and one Control group (CT). The intervention was 2-phased: 1) Both groups got 3 weeks of education consisting of exercise and education while admitted at the GDH and 4 follow-up visits after discharge; 2) The IT-group got a 9 weeks progressive home exercise intervention after discharge.

The primary outcome was Short Form Health Status (SF-36). Secondary outcomes: Activity Balance Confidence scale (ABC), Berg Balance Scale (BBS), Timed Up and Go (TUG), as well as compliance and self-reported physical activity.

Results.– One hundred and eight participants randomized, 53 in IT-group, 55 in the CT-group. Seventy-seven were tested after 3 months. Intention to treat analysis showed that at 3 months the IT-group had statistically better result compared to the CT-group, regarding SF-36 pain, mean difference between groups 10 (95% CI = 0.45, 19.7 $P = 0.04$) and SF-36 vitality mean difference 9.5 (95% CI = 3.4, 15.6 $P = 0.002$). Both groups significantly increased their scores on SF-36 physical function, BBS, TUG, 6 MWT compared with baseline.

Conclusions.– A 3-week exercise and education programme at the GDH together with 9 weeks progressive home-exercises after discharge from GDH significantly increased vitality and reduced pain more than 3 weeks exercise and education programme. However, both programmes improved physical performance in older people discharge from a GHD.

PC-230

General health status, education, marital status and cognitive disorders in older people

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Introduction.– Cognitive function is influenced by many factors, some of them being considered risk factors for dementia in later life, others being viewed as somehow protective. Aim of this study was to evaluate influence of some of these factors upon cognitive disorders in older people.

Patients and methods.– A total of 873 older patients consecutively admitted to National Institute of Gerontology and Geriatrics between 2008 and 2010 were investigated. Gender distribution was 69% women and 31% men, and age range 65 to 95, mean age 80 years. Three age groups were considered: young-old (65–74 years), old-old (75–84 years) and very old (85–95 years). The following parameters have been followed up: gender, age, level of education, place of residence (urban/rural), household income, marital status, comorbidity, present cognitive function. Cognitive function in all our patients was assessed by three tests: Mini Mental Status Examination (MMSE), Clock Drawing Test and Five Words Test. We evaluated the risk of developing cognitive disorder in our sample.

Results.– We considered two types of cognitive disorders: mild cognitive disorder (MCI) and dementia. As regards MCI we noticed a gender difference (as expected) higher risk in men as compared to women: Odds Ratio 1.47. Adjusting for age and level of education Odds Ratio was higher 1.67, and adjusting for marital status Odds Ratio was 1.71 in favor of men. Adjusting for disease burden we obtained 1.54 in favor of men. Analyzing the risk of developing dementia we noticed higher values for women, Odds Ratio 1.61. Adjusting for age and level of education Odds Ratio increased to 2.2 in favor of women, and adjusting for marital status the value decreased to 1.3. After adjusting for comorbidity the risk of developing dementia in women as compared to men was 1.9. Odds of having dementia was higher in rural as compared to urban patients 1.3.

Conclusions.– The risk of developing MCI was higher in men, with low education and in the absence of spouse. Risk of developing dementia was higher in women, especially in those with lower education and with a higher comorbidity and from rural area.

PC-231

Thyroid nodules in patients with adrenal incidentaloma

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Introduction.– Adrenal incidentalomas (AI) are clinically inapparent adrenal masses. Patients present hormone excess or mass effect, but part of them is clinically silent. They are discovered inadvertently in the course of diagnostic testing or treatment for other clinical conditions. And also, the prevalence of AI and thyroid diseases tend to increase with aging. However, there are no sufficient studies showing the relationship between AI and thyroid nodules in the elderly. Therefore the aim of this study was to evaluate the association of thyroid nodules with AI between age groups.

Methods.– The patients who applied to internal medicine outpatient clinic and had diagnosis of AI between January 1st, 2009 to January 2011 were taken into study. Thyroid nodules' features, results of laboratory tests, patients' characteristics were taken from hospital records, retrospectively. Blood glucose, urea, creatinine, sodium, potassium, dehydroepiandrosterone, cortisol, vanil mandelic acid, aldosterone, 17-hydroxyprogesterone, thyroid-stimulating hormone levels were noted. Patients were classified into age groups of ≤ 50 and > 50.

Results.– The study population included 34 patients with AI. Mean age of the patients were 54.88 ± 12.18 years whose ages were between 17 and 74 years. 32.4% (N = 11) of the patients were ≤ 50 and 67.6% (N = 23) of the patients were over 50 age. The patients who had thyroid nodules were 44.1% (N = 15). In 26.5% (N = 9) of the patients thyroid nodule size was < 1 cm, in 17.6% (N = 6) of them > 1 cm. There was no relation between the age groups and the presence of thyroid nodules with AI. And also, there was no relation between age groups and thyroid nodule size.

Conclusions.– Thyroid nodules were common in patients with AI. Thyroid nodules should be looked for in patients with AI. To show the affect of age, large-scaled studies are needed.

PC-232

Predictors of mortality in a 5-years follow-up of elderly on renal replacement therapy

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Objectives.– To analyze the clinical characteristics and predictors of death in patients > 70 years old who required renal replacement therapy at an hemodialysis (HD) unit in a 5 year follow-up.

Methods.– Observational study of patients > 70 years who started HD between 1996–2006. We analyzed data from the Renal Patients Registry of Catalonia, at the time of inclusion and discharge of HD: demographic variables (age, sex, family situation and education level), functional, comorbidity, renal disease, previous nephrology follow-up, date and reason of discharge from HD, cause of death and laboratory data performed the month before inclusion in HD. Descriptive analysis, comparison of proportions (Chi^2) and means (*t*-Student), binary logistic regression.
Results.– *n* = 104 (40.61% of total haemodialysis patients), 66.3% men, age 76.4 ± 3.99 years; > 80 years 17 (16.3%), 91 (91.8%) lived with someone, 81 (77.9%) primary education. **Primary renal disease**: diabetic nephropathy 21 (20.4%), vascular (27.2%), glomerular 11 (10.7%), interstitial 12 (11.7%), unknown 20 (19.4%). **Diagnosis**: biopsy 10 (11.9%), clinical diagnosis 58 (69%). **Nephrology follow-up** prior to HD 29.22 ± 41.27 months, without follow-up 28 (27.2%). HD after natural development of chronic renal failure 80 (77.7%), acute presentation 23 (22.3%). **Functional status**: self-sufficient 85 (84.2%). **Medical history**: myocardial ischemia 17 (16.5%), heart failure 29 (28.2%), cerebrovascular disease 16 (15.5%), peripheral vascular disease 22 (21.4%), chronic respiratory disease 15 (14.6%), diabetes 28 (27.2%), malignant tumors 18 (17.6%), cirrhosis, 5 (4.8%), gastrointestinal disease 42 (40.8%), hypertension 89 (88.1%). **Discharged from HD**: death 75 (72%), transplant 2 (1.9%). Cause of death: cardiac death 17 (26.2%), cancer 14 (21.5%), dementia 5 (7.7%), vascular 10 (15.4%). **Survival > 5 years**: 39 (37.5%). Charlson index 3.37 ± 1.2, hemoglobin 10 ± 3.9; cholesterol 167.1 ± 48.9, albumin 3.2 ± 0.45; ESR 81.83 ± 43.4; Creat 8 ± 2.45, CKD-EPI 6.3 mL/min ± 2.1; MDRD 7 mL/min ± 2.33, time of HD 1.98 ± 1.39 years. **Comparison of survival < 5 vs. > 5 years** ($P < 0.05$): cirrhosis (8 vs. 0%), upper digestive tract disease (17 vs. 37%), Hemoglobin (9.33 ± 2.1 vs. 11.27 ± 5.8); albumin (3 ± 0.45 vs. 3.45 ± 0.35), ESR (94.8 ± 34.3 vs. 48 ± 49.9), Charlson index (3.59 ± 1.3 vs. 3.03 ± 0.97), functional status: almost normal activity (11.1 vs. 34. 2%). Significant variables in multivariate analysis: albumin and nephrology follow-up months (R2 Cox-Snell 0.384).
Conclusions.– The mean survival time in > 70 years old patients on HD is close to two years. The etiology of chronic renal failure does not influence survival in 5 years' time. Greater functional dependence, greater comorbidity, anemia and worse nutritional status are associated to less than 5 years survival.

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What do the sanitary professionals of the abuse think in the oldness? Are we prepared?

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Purpose.– To promote the reflection of the sanitary professionals on the knowledge of the abuse and negligence in the oldness (in the elder), and that we can do for the detection, prevention and intervention in this underestimated problem.
Subjects and methods.– Transverse study, for anonymous and voluntary survey (21 questions) directed the sanitary personnel of a community hospital. The questions were stratified by sex, age and profession.
Results.– One hundred and fifty-seven persons took part in the study, but only there were accepted 148 surveys (23 doctors, 63 nurses, 62 other professionals).
Of these, 58.1% (*n* = 86) thinks that the situation of abuse is frequent towards the elder and, in addition, 68.9% suspected this in some occasion. It thought that the most frequent forms of abuse were: psychological: (60.8%), the negligence (35.8%), physical abuse (35.1%) and, in minor proportion, economic or sexual. To the institutional level they are the threats of punishment or abandon and the physical or pharmacological restrictions without justification.
50.6% of the polled persons know the signs of alert or indicators of elder abuse, emphasizing the dehydration or malnutrition without motive followed of the bad hygiene or dirty clothes and the attitude of fear or restlessness in the elder.
81.1% differs very well between negligence and abuse, and 89.8%, thinks that the abuse already takes place from the same moment in which the only act appears.
Before the suspicion of abuse, 80.4% has tried to verify the circumstances, 50.6% has commented on it to a colleague and only 19.6% informed the social worker. 15.5% of the healthcare workers, for different reasons, does not know that to do.
Conclusions.– This study has helped to the reflection of a major need of detection of abuse and negligence in the oldness, but there is needed continued formation and application of the protocol of existing action.

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Differences in familiarity as a function of cognitive reserve in healthy elderly people

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Episodic memory decreases with age as opposed to more automatic types of plasticity like implicit memory, which remains stable or decreases slightly. A good experimental paradigm to study changes in episodic memory is a recognition task. In this task, participants are usually exposed to a two-stage design. Recollection is the process by which we recognize one item reinstating its original context, whereas familiarity denotes the feeling of ''déjà-vu'' without any reference to place and time. The concept of cognitive reserve refers to the capacity of delaying the observable behavioral effects of brain pathology, keeping the best possible level of performance. People with high CR are able to activate alternative brain areas or use behavioral strategies to compensate for brain deterioration. The definition of CR is complex, some researchers have used premorbid intelligence, educational or/and occupational attainment or leisure activity. The aim of this research is to provide empirical evidence on the relationship between CR in healthy elderly people and familiarity processes. Forty-five participants completed the experiment. Scores in the vocabulary subtest WAIS-III were used to establish two groups differing: high CR = 23; low CR = 22. The two groups differed in years of education, occupation, MMSE, but were similar in age, gender, marital status and self-perceived health. These differences between groups are a by-product of the definition of cognitive reserve. The analysis of recognition performance showed that the effect of experimental condition was significant. The analysis on false alarms indicated that the non-overlapping manipulation decreased false alarms, the interaction was not significant, but the group effect was marginal. In this experiment, people with HCR show indications of also being superior to those with LCR across both tasks in discrimination. In the case of the overlapping list (greater level of difficulty), there was a clear group effect, but it was only marginal in the case of the non-overlapping one, despite a lower variability. According to this model of the cognitive processes involved, the recognition data indicate that participants with HCR perform better due to improved familiarity and very probably due to improved recollection too, although we did not directly measure recollection in this experiment.

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New formula to estimate the glomolecular filtration in elderly patients

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Patients and methods.– One thousand four hundred and eight patients (Pts) are examined. They belong to a basic health area in Granada with an average age of 50.4 ± 19.9. Five hundred and forty-eight of them are men (38.9%, average age of 51.5 ± 19.2) and 860 women (61.1%, average age of 49.7 ± 20.4).
We determine in them the values of serum creatinine, and, in accordance with the criteria of the SEH and SEC, we distribute the Pts into two groups depending on whether they have kidney failure or not. In the patients without kidney failure, we apply the formulas MDRD and CKD-EPI and evaluate the hidden kidney disease according to sex and age.
Analysis of patients diagnosed with E.R.O. with MDRD.– **By sex**: 31 men (34.1%) and 60 women (65.9%).
Categorized by age groups: The highest incidence would be in the ranges of 61–70 were found in 19.8% of the patients, between 71–80 there are 39.6% of the pts, between 81–90 there are 22.0%, and in people over 90 there are 9.9%.
Age groups depending on sex.– **Men.-** The ranges with the highest incidence are: between 61–70 there are 19.4%, between 71–80 there are 41.9%, between 81–90 there are 22.6% and in men over 90 there are 9.7%.
Women.- The ranges with the highest incidence are: between 61–70 there are 20.0%, between 71–80 there are 38.3%, between 81–90 there are 21.7% and in men over 90 there are 10.0%.
Analysis of patients diagnosed with E.R.O. with CKD-EPI.– **By sex:** 18 men (24.3%) and 56 women (75.7%).
Categorized by age groups: The highest incidence would be in the ranges of 61–70 were found in 25.7% of the patients, between 71–80 there are 41.9% of the Pts, and in people over 81 there are 17.6%.
Age groups depending on sex.– **Men.**- The ranges with the highest incidence are: between 61–70 there are 33.3%, between 71–80 there are 44.4%, and in men over 81 there are 22.2%.
Women.- The ranges with the highest incidence are: between 61–70 there are 23.2%, between 71–80 there are 41.1%, and in women over 81 there are 16.1%.

PC-236

Fasting hyperglycemia and in-hospital mortality in elderly population

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Background.– Fasting hyperglycemia has been related to in-hospital mortality mainly in Intensive Care Units.
Objectives.– Our aims were (1) to assess the prevalence of admission fasting hyperglucemia in aged patients admitted for acute illness and (2) to study the relationship between fasting blood glucose levels and in-hospital mortality in this population.
Patients and methods.– A group of 808 elderly patients [median age (interquartilic range) 84 years (78–89), 458 women (56.7%)] with acute illness were classified according to serum glucose concentrations into group I (< 126 mg/dL), II (126–180 mg/dL) and III (> 180 mg/dL). In-hospital survival time and number of deaths during hospitalization were registered.
Results.– After excluding diabetic patients (n = 206, 25.5%), the distribution of patients (n = 602, 74.5%) according to the glucose group was as follows: group I (n = 452, 55.9%), group II (n = 122, 15.1%) and group III (n = 28, 3.5%). The total prevalence of NRFH was 18.6%. In the whole cohort median fasting glucose was lower in patients who survived [105 mg/dL (88–135)] than in those who died [127 mg/dL (93-–159), $P < 0.001$]. This significant difference was maintained only when non-diabetic patients were considered. In-hospital mortality rate in groups I, II, and III was 8.5, 14.1, and 22.9%, respectively ($P < 0.001$). When patients were classified according the presence or absence of diabetes, mortality rate was 8.4, 18.0, and 32.1% ($P < 0.001$) in groups I, II and III, respectively in non-diabetic group and 8.6, 7.2, and 18.2% (NS) in diabetic group. Mean hospital survival time in groups I, II and III was 38.5, 41.3 and 36.4 days, respectively, for all-cause mortality. When considering only non-diabetic patients mean hospital survival time was 40.5, 40.3 and 28.5 days for groups I, II and III, respectively. Low serum albumin was the only independent risk factor for in-hospital all-cause mortality in the whole group, whereas both low albumin and high glucose serum concentrations were the only ones for in-hospital all-cause mortality in non-diabetic patients.
Conclusion.– In non-diabetic elderly patients admitted for acute disease, serum glucose concentration is an important, simple and independent predictor of hospital mortality and is associated to mean in-hospital survival time.

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Urinary tract infections in a health center. Correlation between clinical suspicion and diagnostics (dipstick and urine culture)

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Background.– To study the correlation between the suspected urinary tract infection (UTI) with the result of the test strip and with the results of laboratory study. Also, as a secondary objective, it proposed to study the population distribution, the prevalence of various germs and antibiotic treatment used.
Method.– Prospective study in a Healthcare Center with 82 inpatient and 30 in day hospital regime, from January 1 to December 31, 2011. We designed a collection sheet with the following information: patient identification (name, age, sex, urinary continence or incontinence), clinical suspicion, the result of test urine, urine culture result, germ found and antibiotic therapy. Preliminary results are displayed until March 31, 2011.
Results.– Sixty-one cases of UTI were reviewed between January and March. Thirty-seven (60.7%) in women. The mean age was 87.5 ± 12.02. The most common reason for suspicion was the psychomotor impairment (disorientation, agitation, depressed level of consciousness) with 27 (44.3%), followed by urinary symptoms (dysuria, polaciuria, oliguria) with 16 (26.2%). Sixty-five percent of urine samples analyzed by dipstick tested positive. In continent patients was 61.5 and 65.7% incontinent. Of placing the urine in 58.9% of cases. Confirm the diagnosis by positive urine culture was 69.6%. For continent patients was 85.7%, and 69.2% for patients with urinary incontinence. The most common causative microorganisms for UTI were *Escherichia coli* with 62.5% of cases. The antibiotic fosfomycin were most often employed in 48.3% of cases, followed by cefuroxime in 31%.
Conclusions.– We observed a good correlation between the clinical suspicion of UTI and positive urine strip, with no differences between the patient continents or urinary incontinence. Also, the urine culture confirmed this positivity in about 70% of cases. UTI in

our center is more common in women. The most frequent germ is *E. coli*, like in general population, and it is sensitive to antibiotics most commonly used.

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Predictors for successful ageing in Swedish men. A 35-year follow-up of the Uppsala longitudinal Study on Adult Men (ULSAM)

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Introduction.– We investigated possible midlife predictors of survival and successful ageing in a Swedish cohort of men born in 1920–1924.
Method.– A total of 2322 (82%) 50-year-old men were included in the Uppsala Longitudinal Study of Adult Men (ULSAM) in 1970–1974. Since then, the cohort has been followed-up at five occasions with focus on cardiovascular disease, diabetes, osteoporosis and dementia. At the last examination, 472 of 770 men still alive and living in Uppsala County took part. We defined successful ageing as survival to the age of 85 years, not living in an institution, free from dementia, MMSE $\geq$ = 25 p, independency in basic activities of daily living and able to walk outdoors without help from another person. Regression analyses was performed to study the relations between vascular and lifestyle factors at midlife, with survival to age 85 and successful ageing as main outcomes.
Results.– More than one third of the cohort (n = 866, 37%) reached the age of 85 years. The following baseline factors were significantly related to survival: non-smoking, being married, high education, high leisure time physical activity, body mass index $<$ 25 kg/m^2, absence of hypertension and diabetes.
Our criteria of successful ageing was fulfilled by 74% (348/472 men). Successful ageing was significantly related to baseline non-smoking, OR = 1.82 (95% CI 1.20–2.75), medium to high educational level, OR = 1.56 (95% CI 1.03–2.38), and absence of exposure to heavy physical work load, OR = 1.78 (95% CI 1.02–3.12). Traditional vascular risk factors were not associated with successful ageing in this subgroup of participants.
Conclusions.– In this cohort, followed since the early 1970s, absence of traditional cardiovascular risk factors predicted, as expected, survival to age 85 years. However, among surviving participants, only non-smoking and measurements of early and midlife socio-economic conditions remained as statistically significant determinants of successful ageing.

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Glomerular filtration in institutionalized geriatric patients

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Objective.– To evaluate the glomerular filtration rate through different formulas to determine the prevalence of chronic kidney disease (CKD) in institutionalized elderly patients.
Methods.– Descriptive study conducted in six centers in San Sebastian Gerontological Matia Group. Creatinine is derived from the Jaffe method, and glomerular filtration rate is evaluated through the formula of Cockroft and Gault and MDRD 4. To determine the prevalence of chronic kidney disease follow the guidelines of the National Kidney Foundation 2002; stage I Cl cr $>$ 90 mL/min, II: 60-89, IIIa: 45–59, IIIb 30-44, IV $<$ 30, V $<$ 15. Subjects were excluded using a BMI $>$ 35, $<$ 19 or amputations. Anemia in men is considered values? $<$ 13.5 g/dL and in women $<$ 11.5 g/dL of hemoglobin. Statistical analysis was performed using the software SPSS 15.0, setting a significance level $P < 0.05$.
Results.– Sample size of 515 residents, 83.13 $\pm$ 8.32 years, 72% are women, 57% had severe dependence (Barthel $<$ 40), 59% a Lobo MEC $<$ 20. Fifty-one percent of the population has a history of hypertension, diabetes mellitus 22% of the average drug is 6.98 $\pm$ 3.14. Creatinine greater than 1.5 mg/dL in 6.6% of the sample. The glomerular filtration through the MDRD4 formula gives an average of 82.07 $\pm$ 25.66, 23% stage $>$ III, with Cockroft and Gault formula, the average is 55.40 mL/min $\pm$ 23.66, with a 59.7% $>$ stage III (11% $<$ 30 mL/min). Sodium alterations observed by 4.2 and 2.7% potassium. The stage IV is higher in older than 85 years, hypertensive, women with no change in the number of drugs. The prevalence of anemia in males is 55.4% (52.4% Cl cr $<$ 60 mL/min) and in women 21.8% (86.9% Cl cr $<$ 60 mL/min), mainly normocytic. The Pearson correlation coefficient between MDRD 4 and CG is r: 0.767, $P < 0.001$.
Conclusions.– The CG formula estimates a higher prevalence of residents with CKD, is of great clinical relevance for the detection of renal complications and pharmacological adjustment to avoid an increase of adverse drug reactions and to treat patients with CKD.

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Sepsis in geriatric patients: process-oriented knowledge management

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Introduction.– Within the demographic shift elderly people are increasingly part of the intensive care patient clientele. Sepsis has a high rate of mortality in this patient collective. Guidelines and recommendations on treating sepsis exist, but the group of geriatric patients has not yet been observed in an isolated manner.
The investigation's objective was to apply initial sepsis treatment with geriatric patients and identify the positive effects.
Methods.– Patients over the age of 70 diagnosed with sepsis were included in a retrospective analysis of 2000 patient cases at a medical intensive care unit and the periods of treatment prior to and after the introduction of the standard operation procedure (SOP) were compared.
Results.– Two hundred and twenty-one patients aged 70 and over who were diagnosed with sepsis were identified during the period of observation. The age distribution was similar in both comparison groups (average age of 80.3 prior to the SOP; 79.7 after the SOP). Sepsis was diagnosed in 22% of the cases prior to the SOP's introduction and in 57% of the cases after its introduction. The diagnosis of severe sepsis declined from 42 to 17%. The initial volume therapy was conducted in 64% (11% prior to the SOP); samples of blood cultures were taken prior to the initial administration of antibiotics in 67% (in 5% prior to the SOP). The lactate measurement was documented to evaluate tissue perfusion in 77% (11% prior to the SOP). A central venous catheter was inserted for volume management and measuring the central venous saturation in 89% (68% prior to the SOP) and the target central venous pressure was achieved in 64% (47% prior to the SOP). The initial administration of antibiotics was applied within the first hour as of admission in 73% (32% prior to the SOP).
Conclusion.– The application of the standard operation procedure (SOP sepsis) exhibited positive results in implementation in

critically ill geriatric patients. Under differentiated observation, the guidelines of acute medicine are quite transferable to geriatric patients. The matrix is suitable for accompanying structural and process quality as well as the overall constructive change in culture in the treatment of geriatric patients.

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Testing for respiratory viruses in the elderly,– does it really matter?

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Introduction.– Respiratory viral infections are an important cause of morbidity and mortality in the elderly population. Successful diagnosis depends on viral types and extent of shedding as well as the patient's age and total medical condition. Real-time PCR (RT-PCR) represents an opportunity to efficiently obtain an etiological diagnosis. The objectives of this study were to investigate whether rapid viral diagnosis by RT-PCR would reduce length of stay and prescription of antibiotics in elderly patients reporting symptoms of a respiratory tract infection.
Method.– Twice a week for one year patients above 60 year of age and admitted to the medical ward the previous day were interviewed for symptoms of a respiratory tract infection. Two nasopharyngeal and two oropharyngeal swabs were harvested from each patient. The swabs were analysed by RT-PCR for ten different respiratory viruses.
Results.– A total of 922 patients were interviewed. One hundred and forty-five out of 172 symptomatic patients agreed to participate as well as 77 non-symptomatic patients.
A respiratory virus was found in 19 (13%) of the symptomatic patients, and 0 (0%) of the non-symptomatic patients. For analytic purposes the patients were divided into three cohorts, as described in Table 1.

Table 1. Characteristics of the study cohorts.

	NS/PCR-	S/PCR-	S/PCR+	*PC*-value
Number of patients	77	126	19	
Age, mean (SD) years	72 (9)	76 (9)	79 (8)	0.002
Length of stay, median (range), days	2.3 (10.2)	3.8 (20.9)	3.9 (36.7)	0.003*
Antibiotic prescription (%)	23.4	77.0	84.2	0.000

NS/PCR: non symptomatic/PCR negative; S/PCR: symptomatic/PCR; S/PCR+: symptomatic/PCR positive.
*Kruskal-Wallis test.

Both symptomatic cohorts had a significantly longer hospital stay than the NS/PCR- cohort, and the S/PCR+ cohort had the longest hospitalization. A significant difference in antibiotic prescription was found within the three groups. Antibiotics were discontinued in only two patients in the S/PCR+ group after viral diagnosis. The groups did not differ with regards to mortality or co-morbidity.
Conclusion.– Although real-time PCR diagnosis of viral infections in the elderly is a useful tool, we were not able to find any impact of this test with regard to length of hospital stay or in-hospital antibiotic prescription.

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Age differences in invasive pneumococcal disease (IPD) among Belgian adults of at least 50 years old

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Introduction.– The incidence of Invasive pneumococcal disease (IPD) is highest at the extremes of age i.e. in infants and elderly. The IPD surveillance of 2009 in Belgium included patients $\geq$ 50 years of age and this analysis aims to describe the types of infection, outcome and serotypes of IPD in different age groups.
Methods.– Prospective, active surveillance of IPD in hospitalized adults $\geq$ 50 years of age. Isolation of *S. pneumoniae* from a normally sterile site by hospital microbiological laboratories. Fifty hospitals (44% of acute hospitals) participated in the surveillance network. The clinical presentation, complications and death caused by an IPD were evaluated and documented during hospital stay, at discharge and at 1 month thereafter.
Results.– A total of 551 patients $\geq$ 50 years (mean age 71.7 range 50–98) with IPD were identified in 1 year. Of these, 442 patients were evaluable and classified according to age: 144 (32.3%) in the 50–64 years group, 94 (21.3%) in the 65–74 years group and 204 (46.2) in the 75–100 years group. IPD mostly presented as pneumonia with bacteremia (74%). There was a significantly higher prevalence of pneumonia with bacteremia (80 vs. 72%) and primary bacteremia (6 vs. 3%) in the oldest age group than in the youngest age group. Meningitis (7 vs. 4%) and emphysema (12 vs. 5%) were more prevalent in the youngest age group compared to the oldest. ICU admission was required for 31% of patients and was less frequent in the oldest age group. The mortality rate was 22.2% in the 75–100 group compared to 9.1% in the 50–64 group.
Serotypes 3, 19A, 22F, 12F were causing more frequently IPD in the oldest age group whereas serotypes 1 and 7F were more prevalent in the youngest age group.
Conclusion.– This study shows that IPD is already frequent in the preretirement age and that IPD prevalence increases with age. The oldest age group shows distinct features in type of IPD, outcome and serotype involvement.

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Adenovirus conjunctivitis outbreak in a gerontologic centre

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Objective.– Analysis of an adenovirus type virus conjunctivitis outbreak in a Nursing Home.
Method.– Outbreak description, clinical symptoms, treatment and follow-up. Microbiological study of infection was carried out collecting viral and bacterial swaps. Adenovirus was detected in all cases with symptoms and co-infection with methicillin-resistant staphylococcus in one case.
Results.– From February to March 2011 an outbreak of conjunctivitis was detected. Twenty-six percent (32/123) residents were affected and 11% (9/80) workers. The clinical symptoms were watery, red eye, pain, severe palpebral edema mainly in one eye with follicular reaction and, crusting on the lashes. The process lasted from 10 to 40 days. Co or super-infection was suspected and antibiotic was used in nearly all the cases. In four cases antivirial drops were prescripted. The temporal association cases were related with the transmission from person to person. Sanitary measures were established and only one person was isolated.

Conclusion.– Adenovirus infection is a highly contagious severe conjunctivitis. Appropriate control measures are essential to prevent extensive spread of the disease. Rapid detection is crucial to reduce the impact of the outbreak.

PC-244

Doctors knowledge about herbal medicines needs to be better

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Introduction.– Older people are increasingly taking herbal supplements for a variety of reasons; treatment of chronic ailments and memory impairment, prevention of illness and to aid longevity. This has brought into question doctors knowledge about herbal medicines.
Method.– A cross-sectional web-based survey of 84 doctors working within the department of medicine at a district general hospital was carried out looking at doctor's knowledge about herbal medicines (62% response rate).
Results.– Fifty-three doctors took part in this survey. Of these 21% (11) were Consultant physicians, 11% (6) were Specialist registrars whilst 50% (26) were junior trainees in medicine. Only 29% (15) routinely ask patients about herbal medicine use when taking a drug history and the commonest reasons for not asking were "don't remember to ask" (38%) (20) and lack of knowledge about herbal medicines (30%) (16). The commonest herbal medicines that doctors had come across were Gingko Biloba, Garlic and Ginseng. Fifty-eight percent (30) were aware that Gingko improves memory whilst 47% (25) were aware that St John's Wort could cause transplant rejection in patients on cyclosporine. Only a third of doctors recognised the potential drug interaction between garlic and warfarin and Gingko and clopidogrel whilst only 25% (13) recognised that Gingko had antiplatelet activity. Forty-six percent (24) and 40% (21) rated their knowledge about herbal medicines as poor and very poor respectively. Only one doctor rated their knowledge as good whilst no doctor rated their knowledge as very good or excellent.
Conclusion.– Our findings suggest that doctor's knowledge about herbal medicines is poor. There is a necessity to re-examine our current teaching programmes to ensure that education about common herbal medicines to doctors of all grades is provided so that patients are not put at risk due to lack of knowledge about herbal medicines.

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Comorbidity, functional status and acute respiratory infection in elderly living at home and nursing homes

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Objectives.– To compare clinical and epidemiological aspects of acute respiratory infection (ARI) in elderly hospitalized who living at home or in nursing homes.
Methodology.– Descriptive and prospective study from September 2010 to February 2011 which included all patients with diagnosis of ARI. We examined sociodemographic, clinical, analytical, radiographic, therapeutic characteristic, functional (Barthel Index) and cognitive (Pfeiffer) status and comorbidity (Charlson).
Results.– One hundred and twenty-three patients with ARI; upper respiratory tract infections: 1.6%, lower respiratory tract infections: 60.9%, pneumonia: 34.1% (25 cases from nursing homes and 17 from home) and COPD exacerbation: 3.3%. Forty-seven percent (58) of the patients came from nursing homes, with a mean age of 86 years in both groups. Sixty-five percent female and 35% males in the group from home and 67% and 33% respectively in the nursing home's group. Median of adjusted Charlson Index was 6. In those from nursing homes was found that the most frequent associated pathologies were dementia ($P = 0.005$) and delirium ($P = 0.018$), 22% of these patients had a Pfeiffer test < 3 compared to 47% of the other group ($P = 0.012$) and also had worse functional status, with a Barthel index < 20 in 60% versus 26% ($P < 0.0001$). Significant differences were found in the presence of leukocytosis ($P = 0.018$) and hypoalbuminemia ($P = 0.009$) in those from nursing homes. There were no differences in treatment, radiology, or mortality between both groups.
Conclusions.– 1. Worse functional and nutritional status of patients with acute respiratory infection from nursing homes. 2. More prevalence of dementia and delirium in patients from nursing home. 3. In our sample we did not find differences in mortality between patients from both groups.

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Association of sleep duration with physical performance among Korean old people

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Introduction.– The elderly population is currently increasing. Subjective and objective measures demonstrate an increase in sleep and wake disturbances with advancing age. When older patients have sleep disorders, they often present with excessive daytime sleepiness, insomnia, or abnormal motor activity. The purpose of this study is to evaluate the correlation between the self-rated questionnaire for the duration and quality of sleep with physical performance.
Methods.– The short physical performance battery (SPPB) and sleep questionnaire were performed on random sample nested in the KLoSA panel. A total of 425 subjects aged over than 65 years who performed sleep questionnaire and SPPB in the KLoSA was included. The association between sleep quality and SPPB abnormality was examined using logistic regression analysis. Additionally, the associations of sleep duration with SPPB were examined using logistic regression analysis.
Results.– Four hundred and twenty-five subjects were included in the analysis. Compared to well sleep group, fair sleep group had a higher adjusted odds ratio (OR) for abnormal SPPB (OR = 1.91, 95% confidence interval 0.85 to 4.31). Good sleep group (OR = 2.12, 95% CI 0.86 to 5.15) and bad sleep group also had higher ORs for abnormal SPPB (OR = 14.44, 95% CI 2.08 to 100.06) sleep quality shows significantly positive association with Abnormal SPPB score (P for trends = 0.017). But the relationship between sleep duration and abnormal SPPB score was not significant (adjusted OR 0.86, 95% CI 0.54 to 1.36).
Conclusions.– Sleep quality is associated with abnormal SPPB score, especially in bad sleep group. Our study shows that the poorer sleep quality is associated with the lower physical performance among the old people.

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Clinical and prognostic implications of glomerular filtration in very old hospitalized patients

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Objective.– Description of glomerular filtration rate (GFR) in very old hospitalized patients. Analysis of factors related to the presence of low GFR, and see if there are differences between

grades 3A and 3B. Assess whether there are prognostic implications in these differences.
Patients and methods.– FG descriptive analysis of patients admitted (April 2008–April 2010) and released in this period. (1) Sociodemographic and clinical data: primary diagnosis, length of stay, destination on discharge, and Geriatric Assessment. (2) FG at admission: analysis of patients with FG 3A and 3B and see regarding the average length of stay, mortality, dependency and the presence of geriatric syndromes. Statistical analysis: bivariate: Chi^2 (qualitative variables), Student *t* (quantitative variables).
Results.– Four hundred and ninety-nine patients, median age 85 years (min 40-–max 104), 54% women. Diagnostics: 33% infections, 22% heart failure, 13% delirium, 13% COPD. Length of stay: 11.7 days. For discharge: 43% home, 24% nursing home, 16% residential home, and 14.8% exitus. Geriatric assessment: IB (pre 55.3 ± 33.4, 28.4 ± 32 income, and high 46.5 ± 33), functional gain 10 points (min 0–max 85), OARS 2.57 ± 3.87. Pfeiffer income 3.6 ± 3, Charlson 2.5 ± 1.7. FG at entry stage I-II: 143 (28.7%), stage IIIA: 151 (30%), IIIB: 135 (27%) and stage IV-V: 70 (14%). Statistical analysis: we found no differences between patients with GFR in stage 3A and 3B in terms of length of stay and number of readmissions. No differences in prior comorbidity, functional gain, the OARS, and presence of geriatric syndromes or nosocomial infection. FG patients with stage 3B are significantly more dependent on admission than patients with stage 3A FG (moderate–severe unit 78% 3A vs. 90%3B, $P = 0.01$). Patients with stage 3B FG have a higher mortality than patients in stage 3A (23% 3B vs. 2.6% 3A, $P < 0.0001$), and these differences remained when adjusted for patient age groups.
Conclusions.
– 71% very elderly hospitalized patients with GFR < 60 mL/min. Of these, 80% are in stage 3A.
– Patients with stage 3B FG associated with greater functional dependence on admission and increased hospital mortality for patients with stage 3A.

PC-248
Admission for urinary infection in institutionalized elderly in nursing homes: Micro-organisms, complications and outcomes
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Objectives.– Describe the features of the urinary tract infection (UTI) in institutionalized elderly people. Determine the microorganism most frequently involved. Describe the complications and to analyze the evolution.
Method.– Retrospective descriptive study. Assessment of institutionalized elderly in nursing homes who were admitted for urinary tract infection/sepsis to an Acute Care Hospital in Internal Medicine and Geriatrics for a period of 17 months (January 09–May 10). Assessment the clinical outcomes (complications, average stay and readmission) and functional. Microbiological and analytical data are collected.
Results.– N = 38. 60.53% were women. Mean age 82.53.
42.10% of the elderly had fever at onset. 58% met criteria for sepsis, requiring Intensive Care Unit admission the 5.26% of these.
Developed acute renal failure almost half of patients (44.74%). Presented acute retention of urine 18.42%, indicating urinary catheter al discharge 10%.
The most frequent complication was the *delirium* that appeared in 34.21% of cases.
The microorganism most frequently asylum was *E. coli* (43.33% of the cultures). In 45% of positive urine cultures multiresistant microorganism was isolated.
Died 10.52% of the patients; 36.84% were readmitted on a new UI. The average stay was 10.47 days.
In terms of functional status at discharge showed a slight decline, most evident in patients who already had some degree of dependence.
Conclusions.
– Most of the institutionalized elderly in nursing homes admitted to our hospital for UTI do it with criteria of sepsis.
– The micro-organism most frequently implicated in our sample was *E. coli* multi-resistant.
– The most common complications were acute renal failure, urinary retention and *delirium*.
– The UTI in institutionalized elderly generates a large number of clinical complications, average stay high percentage of readmissions, impaired functional status and high mortality. Therefore the UTI in the institutionalized elderly may be considered one of the geriatric syndromes.

Clinical case 1/*Casos clínicos 1*

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Evaluation of a moistened super-absorbent wound dressing pad in the treatment of a gluteus pressure sore
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Treatment of pressure sores is one of the activities that spend more nursing time. The advances in the research and development of new products for the attention of these wounds, provides us a wide range of possibilities to reduce both, the professional caring time and the suffering of the patients. One of these products is the dressing TenderWet® Active.
Objective.– Evaluate the efficacy of a new dressing in the treatment of pressure sores.
Patient and method.– 85-year-old bed-ridden man diagnosed of cardiac arrhythmia, hypothyroidism and chronic renal insufficiency. After a long staying in hospital, when he comes back he has a pressure sore (stage IV) in the right gluteus with dry eschar. After cutting desbridement applied in several sessions to eliminate the dry eschar, it is started a daily therapy with TenderWet Active. A follow-up takes place by written and photographic record for 14 weeks (13/2/2010 to 18/5/2010), evaluating the evolution of the wound in its size and characteristics.
Results.– In the beginning of the treatment, the wound is 9 cm × 6.5 cm. The wound bed is composed of fibrin in more than 25% and granulation tissue in more than 50%, being the rest tendon. It is a quite clean wound after the desbridement. It is appreciated serous kind exuded from scantily to moderate.
At the final evaluation (14 weeks), the wound is 3.5 cm × 2.5 cm. The wound bed is totally granulation and healing tissue, without exuded.
The wound edges first softened and eroded were treated with barrier ointment, improving considerably and presenting a healthy and free of injuries aspect.
Conclusions.– After the utilization of the dressing TenderWet Active we have verified the efficacy of this product in the treatment of this pressure sore. Despite the dressing must be removed every 24 hours (what increases the habitual frequency with other products), its easy application and removal, absence of pain in the patient during the process, as well as the progress observed day after day, it is encouraged the continuity of using this kind of dressing, being a very effective option in the treatment of this type of wounds.

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Tophaceous gout and bone destruction as the first symptom of hyperuricemia in an elderly woman. A case report

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Introduction.– A 74 year old female patient with history of hypothyroidism was admitted to the Geriatrics ward for diarrhoea, functional impairment and stupor. Clinical exam showed a soft tumour of the second and third phalange of the right index (figure 1). An exact history of the tumour's onset and progression were impossible to obtain from the patient, due to reduced vigilance and memory impairment. Her treating physician didn't report any gouty arthritis episodes in the past.
Method.– A clinical case is described in order to demonstrate a rare and atypical presentation of complicated gout in an elderly woman.
Results.– Blood tests showed severe hypothyroidism (TSH: 101 nmol/L), moderately high uric acid levels (386 μmol/L) and severe chronic renal failure (creatinin clearance: 25 ml/min, according to the Cockroft formula). X-rays showed a complete osteolysis of most of the third and the distal portion of the second phalange (figure 2). Fine needle aspiration of the tumour brought a white viscous liquid. Polarized light microscopy on the aspirate identified numerous urate crystals, after five dilutions because of very high concentration (figure 3). Bacteriological exams were negative. Abdominal CT found no uric acid stones.
Conclusion.– In our patient, tophus formation with severe bone destruction (figure 2), were the only manifestations of chronic hyperuricemia. Elevated serum uric acid levels were attributed to chronic renal failure and severe non-treated hypothyroidism.
Allopurinol was prescribed in order to lower serum uric acid below 350 μmol/L. Osteolysis of most of the third and the distal portion of the second phalange was treated surgically.
Gout is related to chronic hyperuricemia. Its most frequent initial presentation is an acute monoarthritis, mostly of the first metatarsophalangeal joint widely known as podagra. We report a case of tophaceous gout as the first symptom of chronic hyperuricemia, at a stage of severe bone destruction.

PC-251

Mental status change and hallucinations in an elderly patient with Parkinson's disease as a result of proper medication supervision – the case for geriatric consultation in hospitalized frail elderly

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Background.– Medication non-compliance and errors are the leading cause for emergency room evaluation in frail elderly. We describe a case when paradoxically proper medication supervision and administration proved to be responsible for dramatic presentation and hospital admission in previously non-compliant patient.
Methods.– 73-year-old patient with known history of Parkinson's disease was admitted with a 3-weeks history of confusion, visual hallucinations and functional deterioration. Medical work up for the etiology of patient's symptoms including lab work and imaging studies was inconclusive. Geriatric inpatient consultation was requested by hospitalist team. After obtaining more detailed medication history geriatric consultant established that patient had had a fall 4-weeks prior to admission. Following his fall patient's daughter became concerned about his ability to handle his own medications. Patient was previously responsible for all of his medication administration. Consequently daughter took over medication supervision. Patient's medications included anti-hypertensive, cholesterol lowering agent and carbidopa/levodopa five times daily. Shortly there, after patients started experiencing visual hallucinations, increased confusion and jerking movements of his upper and to lesser extend lower extremities. During geriatric evaluation patient was assessed as having an acute delirium and atethotic movements characteristic of carbidopa/levodopa overdose.
Intervention.– After the medication dose and frequency was significantly lowered patient's mentation and concentration improved. His abnormal movements disappeared. He was able to walk with a walker and participate in activities of daily living. His repeated evaluation was consistent with moderate stages of Parkinsonian dementia. Patient was discharged from the hospital for short-term rehabilitation at nursing facility with ultimate goal of returning home.
Discussion.– Geriatric consultant was able to inquire about this patient's functional status at home and deduct that patient was non-compliant with his medications. This prompted increase of his Parkinson's disease medication dose and frequency. When supervision of medications was executed by patient's daughter it actually resulted in carbidopa/levodopa toxicity in a relatively drug-naïve patient. Quick medication adjustment after geriatric consultation resulted in favorable outcome for this patient and his family. Geriatric inpatient consultations can be very beneficial due to the depth and scope of geriatric assessment not usually covered by hospitalist physicians.

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Pituitary insufficiency: a cause of hypoglycemia in an elderly diabetic

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Hypoglycemia is more likely to occur in the elderly due to poor glucose tolerance. There are multiple factors associated with ageing that increase the risk of hypoglycemia, including the age related alteration of hepatic and renal functions that alter drug metabolism and excretion. In elderly diabetics, insulin and oral glucose-lowering drugs are the most common causes of hypoglycemia. Furthermore, hypophysis insufficiency might also be cause of the hypoglycemia in elderly patients.
Case: A 67-year-old woman admitted to our geriatric clinic with symptoms of confusion, decrease in appetite, nausea and vomiting. She suffered from these for 45 days. She has also suffered from fatigue and drowsiness for 1 year. She had been treated with gliclazide 30 mg/day and metformin 2000 mg/day due to diabetes for 2 years. In physical examination, her vital signs were 80/50 mmHg arterial blood pressure, 104/min of pulse rate, and 24/min of respiration. She also a thin and dry skin, dry mucosa, reduction in body hair, apathy, decreased urine volume and water intake, and 40% of Karnofsky performance scale. In laboratory examination, blood glucose, blood urea nitrogen, creatinine, sodium, potassium levels were 32 mg/mL, 60 mg/dL level 3.2 mg/dL, 132 mM/L and 5.01 mM/L, respectively. To stabilization the patient, she was firstly hospitalized in geriatric clinic. Firstly, it was considered prerenal acute renal failure and hypoglycemia due to gliclazide, so gliclazide and metformine were discontinued and both fluid-replacement and glucose-infusion were done. In the clinic setting, despite the therapy, the kidney functions improved. Unexplained recurrent hypoglycemia and hyponatremia and hyperkalemia together with hypotension were suggested the

possibility of hypocortisolemia. Morning cortisol level was 1.38 ug/dL. Others during the hypoglycemia were as follows:
– FBS: 32 mg/dL (60–100);
– C-peptide: 1.02 ng/mL (0.9–7.1);
– Insuline: 2.83 μg/mL (3–28);
– Cortisol: 1.38 ug/d (6.2–19.4);
– TSH: 0.055???/mL;
– FT4: 13.24 pmol/L;
– IGF-BP3: 1.00 mg/L (1.73–5.11);
– FSH: 2.02 mIU/mL (25.8–134.8);
– LH: 1.36 mIU/mL (7.7–58.5).
Her hypophysis MR imaging was normal. In that situation, she was diagnosed as pituitary insufficiency. The prednisolone 7.5 mg/day dramatically improved hypotension, hyponatremia and hypoglycemia. Hypoglycemia is an important problem in the geriatric patients.
When the refractory hypoglycemia accompanied by hypotension, hyponatremia and hyperkalemia, it should be taken into account of anterior hypophysis insufficiency and replacement treatment should be administered as soon as possible.

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Safe, effective use of a very low energy diet in an obese elderly inpatient

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A 68-year-old gentleman presented to hospital with infected venous ulcers on both lower legs. He had a Body Mass Index (BMI) of 43.4 kg/m^2, multiple obesity related comorbidities including type 2 diabetes, and a history of multiple weight loss attempts. Functionally, he required the maximal assistance of three people for mobility and personal hygiene. In hospital, he refused most physiotherapy interventions and continued to eat large quantities of junk food. After 3 weeks with no functional gains, he was informed that a nursing home would be the likely discharge destination. At that point his motivation improved and he was offered inpatient rehabilitation.
On transfer, the patient was commenced on a very low energy diet (VLED – Optifast®). This included a sachet of Optifast® for breakfast and lunch, and protein with leafy vegetables for dinner, with 9 g/day L-arginine and 500 mg vitamin C supplements. Over the subsequent 10 weeks, his weight decreased to 97 kg (BMI 33.6 kg/m^2). On discharge home, he was able to independently toilet, shower and walk 40 metres with a frame. His leg ulcer area decreased substantially, and his serum nutritional parameters remained unchanged.
Obesity in older inpatients with wounds presents a management challenge. Obesity is associated with increased rates of functional decline and may contribute to frailty, and intentional weight loss may reverse these phenomena. In the morbidly obese, wounds tend to be more severe, the patients have micronutrient deficiencies and recommendations to increase overall caloric intake may not be appropriate. Hence it may be appropriate to focus instead on nutrients important for wound healing. VLEDs are defined as formulated, nutritionally complete dietary regimens containing less than 800 kCal/day. There is extensive evidence for their use in younger adults, but due to lack of evidence for their use, they are relatively contraindicated in those aged over 65. There is evidence for the use of arginine supplementation in wound care. This case illustrates that closely supervised rapid weight loss achieved with the aid of a VLED and supplements is compatible with wound improvement. It also contributed to improvement in functional status, in this case, avoidance of nursing home admission.

PC-254

Effects of bird-assisted therapy on behavioral and emotional response in patients with Alzheimer disease

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Aim.– The objective of the present study was to evaluate the effects of the presence of a bird during cognitive stimulation therapy on activity attendance, task motivation, attention, communication and interactive response, names memory and disruptive behavior in Alzheimer's patients.
Methods.– We select a group of six nursing home residents with Alzheimer disease (aged 82–93 years old). We established two periods of six sessions of therapy each one. During the first one, we train three kinds of tasks (fitting, stringing and classification) in the absence of the bird. During the second time, we train the same tasks in the presence of the bird. We evaluated the behavioral and emotional responses in individuals before and after the experimental protocol. The estimation includes the following tests: the Neuropsychiatric Inventory (NPI), the Cornell Scale for Depression and a test developed by our team to measure the study parameters. The statistical data analyses are carried out using SPSS software for Windows.
Results.– We registered the possible reduction of disruptive behaviors and improvement of patient's attention. We also estimated the motivation and initiative of the individuals during the performance of the tasks and their ability of communication and interaction with other persons and with their environment.
Conclusions.– Our study demonstrated that the presence of an animal during the performance of a cognitive stimulation therapy is capable to reduce behavior disorders, improving certain cognitive skills during the execution of tasks as well as increasing the motivation and communication attitude in Alzheimer's patients.

PC-255

Clostridium difficile (CD)-associated diarrhoea. Study of cases (2009–2011) in a geriatric hospital

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Objective.– To characterize the profile of patients with CD-associated diarrhoea by evaluating epidemiological, clinical and analytic factors.
Method.– This is a descriptive-retrospective study. The clinical records of all cases of CD-associated diarrhoea (confirmed with a positive stool cytotoxine test) were reviewed. The study scope is limited to the patients of the Sant Andreu Hospital for the period January 2009 to April 2011.
Results.– There were 10 confirmed cases, 70% of which were females, and the average age was 81.2 years. Seventy-five percent of the patients came from acute hospitals. The mean stay in Sant Andreu was 109 days. The most common risk factors were identified as advanced age (all were older than 80 years) and malnutrition (reduced proteins and/or albumin in 100% of the cases). All patients received antibiotic treatment prior to the diarrhoea. Use of laxatives was found in 65% of the cases. Admission diagnoses were diverse and included hip fracture (20% of the cases), stroke, and pneumonia. Antiacids use, previous endoscopy and abdominal surgery doesn't appear in any patient.

The average Charlson's index score was 2.80. In terms of functional level, the baseline Barthel index (average) was 77%, heavily decreased to 22% at admission, and shown a slight increase to 25% at discharge.
The symptoms of Clostridium difficile infection were minor in most of the cases. All of them had diarrhea, and 60% presented mucosity. Digestive hemorrhage was only found in one case, while there were no identified cases of megacolon or fever. The average time before diagnosis was 9.42 days. All the patients were treated with metronidazol, taking special hygienic care, and were moved to individual rooms.
Evolution: four cases were resolved, one persisted in time, two relapsed (one considered asymptomatic carrier), and three died.
Conclusions.– CD-associated diarrhea is a reality in geriatric hospitals, particularly in vulnerable patients (with malnutrition, pluripatology or functional disability). Although the associated symptoms are usually minor, CD-associated diarrhea often derives to morbidity and mortality. Better strategies to prevent and control this infection should be developed.

PC-256

Hypothermia – an unusual iatrogenic cause

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Introduction.– In the UK hypothermia is usually seen in the winter especially in older people. The commonest causes are environmental and infection. We report on a case of hypothermia occurring on a warm ward with ambient temperatures of around 22 °C.
Case report.– An 84-year-old gentleman was admitted with new onset of absence seizures. His observations were within normal range and his temperature was 35.4 °C. Systemic examination was unremarkable; in particular there were no focal neurological signs. The patient had been started on 15 mg of mirtazapine 14 days prior to admission for possible depression. His past medical history included ischaemic heart disease, atrial fibrillation, Barrett's oesophagus, chronic kidney disease and benign prostatic hypertrophy. He had no history of seizures or cerebrovascular disease.
A CT brain demonstrated deep white matter ischaemia with no acute pathology. Blood tests including free T4, were unremarkable. Blood, urine and cerebrospinal fluid cultures were all negative. EEG showed diffuse slow activity of low amplitude and was not diagnostic of seizures.
A clinical diagnosis of absence seizures was made, thought to be secondary to mirtazapine, which was stopped. The patient was commenced on sodium valproate 300 mg BD. Within 48 hours of starting valproate the patient's temperature fell to 33.5 °C. Sodium valproate was withheld leading to a normalisation in his temperature and a similar trend was seen following unintentional re-introduction of the drug some days later. The patient was seizure free a week after the withdrawal of mirtazapine and required no long-term anti-epileptic therapy.
Discussion.– Studies have shown that mirtazapine increases cortical excitability and seizures are reported as a rare side effect of treatment. There have been several case reports of valproate induced hypothermia both at therapeutic dose and in overdose and it has been suggested that this is due to GABA agonism. This case demonstrates the importance of including side effects in the differential for otherwise unexplained symptoms. Since sodium valproate is a commonly prescribed as an anticonvulsant in older people it is important to be aware of this rare but potentially harmful adverse reaction.

PC-257

Percutaneous kyphoplasty in tumoral fractures of the axis

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Introduction.– Percutaneous kyphoplasty is a minimally invasive, radiologically guided procedure in which bone cement is injected into structurally weakened or destructed vertebrae. In addition to treating osteoporotic vertebral fractures, this technique gains popularity to relieve pain by stabilizing vertebrae compromised by, for example, metastases, aggressive hemangiomas or multiple myeloma that are at risk of pathologic fracture.
Patients and methods.– Retrospective study including 44 patients (67 fractures) who undergone percutaneous kyphoplasty from one or several tumoral fractures of the axis between January 2006 and February 2009. Seventy-seven percent were female. The mean age was 67. VAS scale and Karnofsky Index were both measured pre and postoperatively. The most frequent lesion found was metastases from a primary tumor followed by myeloma.
Results.– All patients were seated 24 hours after surgery. Partial or complete pain relief was obtained in 91% of patients (40/44); significant results were also obtained with regard to improvement in functional mobility and reduction of analgesic use. The mean value of the visual analogue scale (VAS) was 5.9 preoperatively, and significantly decreased to 3.3 one day after kyphoplasty. We reported four new vertebral fractures and no cases of cement extravasation during the follow-up. We didn't report any case of neurological dysfunction after surgery.
Discussion.– Most cases in our study show a significant improvement in pain and functionality with no associated complications. Kyphoplasty cement augmentation has been a safe and effective method in the treatment of symptomatic vertebral neoplasic compression fractures.

PC-258

Use of topical negative pressure therapy in chronic wounds in a Geriatric Rehabilitation Unit

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Introduction.– The high incidence of chronic wounds, its impact on quality of life for patients and caregivers, and healthcare costs force to use the best resources for its treatment. Negative pressure therapy (NPT) creates a controlled vacuum via a polyurethane foam, with a sealed drainage system applied to the wound surface and connected to a suction pump. Aspiration may be continuous or intermittent from 80 to 125 mmHg, with changes every 48 hrs. The system improves the removal of exudate, granulation and stimulate angiogenesis and reduces bacterial load.
Objective.– Verify the effectiveness of TPN in the treatment of chronic wounds in our Geriatric Rehabilitation Unit.
Patients and methods.– Four patients with chronic wounds: pressure ulcer, abdominal hernia, digital and transmetatarsial amputation. The NPT was started in Hospital until the first cure. Three cures are conducted weekly. Wound was on granulation phase at the time of starting treatment. Surface measurements were recorded, escales: VAS, Barthel, EuroQol-5D, microbiological cultures.
Results.– Case 1: 60 years old (y.o.). Initial measurement (IM) (cm): 10×11. End measurement (EM): 6×6. Sixty percent reduction in 72 days (0.93%/day). Case 2: 86 y.o. IM 4×15. EM: 2×10cc. Sixty-seven percent reduction in 28 days (2.38%/day). Case 3: 65 y.o. IM: 2.5×4, EM: 1.5×3. Fifty-five percent reduction in 30 days (1.83%/

day). Case 4: 77 y.o. IM: 9 × 6; EM: 5 × 4. Sixty-three percent reduction in 30 days (2.10%/day). Case 1 and 2 had bacterial infection at admission, colonization in case 3, case 4 showed no microorganisms. Cultures during therapy in all cases were negative [photos are attached with the evolution of the injuries].
Conclusions.– It shows a decrease of between 55 and 67% of the wound diameter, regardless of the therapy duration, mechanism, or device model, with improvement of the granulation ground and hygiene, lesser nursing workload without significant complications. In amputees the pain patients was successfully controlled early. As limitations, the NPT requires staff training, limited mobility due to the continuous connection to the vacuum pump and high daily cost. Experience with TPN is positive, being an alternative to traditional cure to consider.

PC-259

Clinical and functional characteristics of a sample of elderly patients with non-small cell lung cancer

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Background.– Non-small cell lung cancer is the leading cause of related cancer mortality worldwide and it may be considered typical of advanced age. Since most patients with this kind of neoplasm are at an advanced stage of the disease at diagnosis, chemotherapy is the mainstay of treatment.
Objectives.– To describe the main clinical and functional characteristics of a sample of elderly patients with non-small cell lung cancer.
Methods.– Descriptive study retrospective over patients older than 70 years, diagnosed of non-small cell lung cancer (stages III and IV) during a period of 6 months treated in a tertiary Hospital. Data collection was performed by reviewing medical records. Clinical variables analyzed: cough, dyspnea, hemoptysis, pain. Functional variables analyzed: the EORTC QLQ-L13 scale, Karnofsky Index and Barthel Index at baseline and at 6 months.
Results.– Sample 50 patients (mean age 83.1 years, ranged since 70 to 90 years). Main clinical presentations were cough in 48% (24 cases), dyspnea in 32% (16 cases), pain in 20% (10 cases) and hemoptysis in 16% (eight cases). Functional characteristics: mean baseline Karnofsky Index: 47 and 44.4 at 6 months; mean baseline Barthel index 43.9 and 41.9 at 6 months; survival rate at 6 months 84% (42 cases). Specific treatment: 20% (10 cases) received palliative radiotherapy; 16% of patients (8 cases) underwent chemotherapy schemes (cisplatin and vinorelbine).
Conclusions.
1. The main clinical manifestations of non-small cell lung neoplasm in the elderly are common symptoms of respiratory disease.
2. The EORTC QLQ-L13 scale allows the analysis of these clinical manifestations and may be a useful tool for clinical assessment of this malignancy in the elderly.
3. As a complement, the Karnofsky scale and Barthel Index can be very useful for decision making regarding the application of therapeutic measures.

PC-260

The old drug in a new therapeutic range

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Background.– Cardiac glycosides such as digoxin have been used for centuries. Its use has significantly decreased since newer therapies have been introduced, but for the elderly it is still commonly prescribed drug.
Case report.– An 85-year-old female with a history of hypothyroidism and hypertension was referred for geriatric consultation with complaints of ''seeing flowers on the carpet'' as well as a ''yellowish-green cast'' to her room for the past 2 years. She revealed lack of taste and appetite with a 30 lb weight loss. Her current daily medications include: levothyroxine, metoprolol, olmesartan/HCTZ, warfarin and digoxin. On physical exam generalized muscle weakness, weight of 135 lbs, BMI of 23 and an irregularly irregular heart rhythm at 80 beats per minute were noticed. Albumin level was 4.4 gm/dL, creatinine 1.6 mg/dL, estimated GFR 33 mL per minute, TSH 1.0 IU/mL, INR 2.76 and digoxin level 1.8 ng/mL. Serum electrolytes, including magnesium, were normal. ECG showed pacemaker spikes and an echocardiogram estimated left ventricular ejection fraction at 40%. After reducing the serum digoxin level to 0.9 ng/mL the patient's visual hallucinations, chromatopsia and ageusia resolved completely. Gradually she regained her appetite and her weight. She continues to do well.
Discussion.– Digoxin has a narrow therapeutic index. Blurred or yellowed vision, confusion and hallucinations are symptoms of serious CNS toxicity that mandate prompt treatment. The previously targeted therapeutic range of 0.8 to 2.0 ng/mL has been recently revised to 0.5 to 0.8 ng/mL, equally effective in managing symptoms without the increased risk of toxicity.
Conclusion.– As hallucinations in the elderly usually lead to a psychiatric rather than a medical evaluation, digoxin toxicity manifestations should be well known. The dosage and monitoring of the drug always needs to be managed carefully with adjustment, as the clinical condition of the patient requires.

PC-261

Prevalence of pressure ulcers (PU) in relation to nutritional status

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Objective.– To determine whether nutritional status influences the occurrence of pressure ulcers in geriatric patients admitted to the Red Cross Unit Almeria (Spain).
Methods.– Observational descriptive study in 12 patients admitted to the Red Cross unit of Almeria in the period from October 2010 until April 2011. The sample was selected by simple random sampling technique at admission underwent nutritional assessment, and excluded patients who refused to participate in research, patients with a stay less than 15 days and patients with pressure ulcers pre- income. Patients were classified into two groups, the first with acceptable nutritional status, and the second with improper nutrition.
Primary data were collected from daily observation and clinical history of the unit, which subsequently were treated with the statistical package ''SPSS v19''.
Results.– The first group of patients, included in the group of ''good nutritional status'', accounted for 64% of the sample, of which 15% had PU. And the second group of patients, ''inappropriate nutrition'', accounted for 36% of the sample, of which 85% had PU.
Conclusions.– Poor nutritional status influences the occurrence of pressure ulcers. Patients with inappropriate nutritional status have four times more likely to have pressure ulcers. The patient's gender did not influence the occurrence of the injury.

PC-262

Music therapy in patients with Alzheimer partially institutionalized

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Objective.– The main objective was to determine the benefits of music therapy on patients admitted to a day center and determine if you decrease their anxiety level.
Methods.– Descriptive study with a sample of eight subjects with Alzheimer disease. Patients were grouped in one room and a song was played to the liking of the patients, after assessing each patient. Once the application time of therapy, they returned to assess.
Results.– Seventy-five percent of patients noticed improvement with music therapy. Sixty-two percent saw increased fatigue and decreased physical well-being, and 87% of patients showed a decrease of anxiety.
Conclusions.– Music therapy is a health related discipline, which is increasingly used more in the treatment of people with dementia. However, it is scarcely used in the centers of institutionalization of the elderly. It is a therapy that will increase the quality of life of patients at low cost, thanks to the properties of music and socialized power he possesses.

PC-263

Knowledge assessment in medicines administration via enteral feeding tubes in social-health centers

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Purpose.– To evaluate the level of knowledge of the healthcare professionals regarding administration of medicines via enteral feeding tubes.
Methodology.– During the first phase of the evaluation (January 2011), a transversal pre-intervention study was carried out in the Pharmacy Department of nursing home, to look at the way drugs were being administered via enteral feeding tubes. Variables recorded were: type of resident (elderly, disabled), age, number of drugs administered, therapeutic main groups involved and type of pharmacist interventions. In the second phase (February 2011) an anonymous volunteer questionnaire was handed out to every healthcare professional that handled feeding tubes. The questionnaire, designed by the Pharmacy Department, consisted of 20 questions: two regarding the participant's professional details, seven focusing on preparation and administration of medication and time consumed and 11 about general knowledge in manipulating formulations, problems that come up when administering through tubes and evaluation of the need of training.
Results.– In the first phase of the evaluation 18 residents with tube feeding were identified (one disabled) average age 75. An average of five drugs were administered, mainly drugs from the Gastrointestinal and Central Nervous System groups. Forty-five percent of Pharmacist interventions targeted an incorrect manipulation of the formulations, 23% avoiding food-drug interactions and 32% advising alternative formulations. Fifty-seven professionals participated in the second phase of the study (42 were nurses, the rest nursing assistants) with an average of 6 years professional experience. On average, 100% of the administrations were prepared by the nurses 45 min before administration and 87% of the administrations were given by themselves dedicating 30 to 60 min. Only 30% of the participants dominated the technique for manipulating formulations (crushing, dispersing) and 50% were found not to have enough information available about medication not to be crushed. Sixty-five percent stated that they came up against problems when administering medicines via enteral feeding tubes and 91% demanded training.
Conclusion.– Results demonstrate the need for a training programme for healthcare professionals regarding manipulation and administration of drugs and individualized information regarding food-drug interactions. Furthermore, the Pharmacy Department considers the integration of the Pharmacist in the Nutrition Support Team essential.

PC-264

Kinesiotaping in geriatrics: its role as a new therapy for the management of pain and functional improvement

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Introduction.– The aim of our study was to evaluate the effect of kinesiotaping as an adjuvant therapy in the treatment of pain and functional improvement for geriatric patients after knee arthroplasty (KA) and stroke.
Method.– Prospective and descriptive study among 14 geriatric inpatients admitted in a rehabilitation unit from March 2010 to April 2011 and followed-up by 60 days. Postoperative pain was measured with the Visual Analogic Scale (VAS), functional improvement with the Barthel Index (BI), joint and muscular balance and spasticity with the Ashworth Scale.
Results.– Among all patients with KA ($n = 22$) and stroke ($n = 34$) we included those aged > 65 and those with no good functional results one month after surgery. Finally we got a sample with 14 patients (seven KA and seven strokes) to whom kinesiotaping was applied. In the stroke group the average age was 76 years and we used the tape during a mean of 41 days (SD 26.35), mainly in lower extremity (71.4%). Spasticity decreased in 57.1% and did not change in the 14.3%. Only in the 14.3% the pain was not reduced and BI improved in 71.4% of them. The 75% who enhanced their BI (OR 1.5; 95% CI 0.05–40) also bettered their score in Ashworth Scale; however, there was no statistical significance between these scores. Analgesic treatment was given to all patients improving spasticity. In the arthroplasty group, the average age was 77 years. The mean duration of treatment was 24 days (SD 7.46). All patients gained joint and muscular balance. The pain was reduced and BI improved in 71.4% each.
Conclusions.– Kinesiotaping in Geriatrics is a new and affordable treatment without adverse effects useful as an adjuvant therapy in post surgical pain, functional improvement and spasticity for all patients including in our sample. These results indicate the need for additional studies of taping effects on knee arthroplasty and stroke in geriatric patients.

PC-265

Frailty in olders of a day program outpatients centre

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The term "frailty" is described as "state characterized by the deterioration of the individual physiological reserves, making the elder vulnerable altering their responsiveness to stress".

Linda Fried's study described the syndrome based on a phenotype consisting of five criteria: unintentional weight loss, weakness, decreased walking speed, physical inactivity and fatigue.
Objectives.– To identify different groups of elderly people, one presenting a risk of frailty status and other whose members are already fragile, to take preventive action in the first group or treatment in the second, which consist of a combined program of strength, balance and aerobic exercises.
And to analyze the effectiveness of the treatment program and to verify the relationship between functionality in activities of daily living and mental status of these subjects.
Subjects and methods.– The sample has been 10 subjects in a day program outpatients resource in a nursing home.
All of them have been assessed using various tests pre and post treatment:
– hand grip test using a Jammar dynamometer;
– short physical performance battery (SPPB);
– Physical Activity Questionnaire (IPAQ);
– Barthel (basic activities of daily living);
– MEC (Mini-Mental State Examination).
Along 5 months, five sessions of 45 minutes per week with the following action.
During this time the users have performed the combined treatment program consisting of:
– aerobic exercises in group;
– active-resisted exercises of lower limbs with weights of 1 kg;
– circuit marks on the ground for walking and balance.
Results.– Fifty percent of subjects were found to have low scores on two of the criteria for the phenotype of fragile subject: grip strength and the physical performance, 20% of the total increased exercise tolerance and walking speed. Most of them improved in one of the basic activities of daily living.
Conclusions.– It is necessary to identify the frail elderly in order to do an early intervention.
This study has demonstrated the importance of aerobic and resistance exercises in elders with a previous frailty status to improve their functionality and fitness.

PC-266

Multiple bladder stones secondary to chronic urinary retention

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78-year-old man with a history of poorly controlled hypertension, non-smoker until 10 years ago, COPD with oxygen and repeated exacerbations; S. Parkinson. Following in urology for benign prostatic hyperplasia (PSA 3.24).
Go to casualty presyncope, nausea without vomiting, asthenia and anorexia of one month duration. On examination: large balloon bladder catheter after 1800 cc. Analytics: acute renal failure with creatinine of 7.2, urea 244, K 6.4. Urinalysis: pH 8, 15–20 leukocytes/c and common bacteria. Ultrasonography: wall severely thickened trabeculated bladder with countless stones inside. Prostatic growth was not classified by acoustic shadow of the stone. Computerized axial tomography shows thickened bladderwall completely filled with rounded stones. Enlarged prostate (53×37 mm).
With the diagnosis of acute renal failure secondary to post-renal chronic retention of urine due to benign prostatic hyperplasia, was the catheterization. After electrolyte replacement normalizes renal function, being involved in a suprapubic prostatectomy and deferred mining numerous bladder stones.
Conclusion.
-Benign prostatic hyperplasia with outflow tract obstruction can cause incomplete emptying of the bladder, chronic urinary retention and obstructive renal failure. Differential clinical expression is overflow incontinence. Stress incontinence accounts for 10% in elderly. The presentation is very rare paucisymptomatic.
– The wetting should alert us to find painless distended bladder or acute renal failure.
– The residual volume associated infection lead to the formation of bladder stones (3.4%), although the mass presentation, yet little is exceptional symptomatic.

PC-267

Determining factors of mortality in a geriatric rehabilitation unit after a hip fracture surgery

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Background.– Hip fractures are common in elderly people and that has been linked to high mortality.
Objective.– This study investigates the determining factors of mortality in patients with hip fracture admitted in our rehabilitation unit of a geriatric nursing home.
Methods.– This is a prospective study of elderly patients with hip fracture who died during their stay in our unit. We studied patients admitted in our unit since august 07 to December 10 to gait rehabilitation. We measured at admission the Charlson Index of morbidity, nutritional status by Mini Nutritional Assessment (MNA) and Body Mass Index (BMI), level of dependence by the Barthel index, Tinetti scale and the Functional Ambulation Classification of Holden to assess balance and gait, Braden Scale to assess the risk of pressure ulcers and cognitive impairment by the MMSE of Folstein.
Results.– During the study period a total of 128 patients admitted for gait rehabilitation after a femoral fracture, of these 13 patients (10.15%) died during their stay, three patients (2.34%) were referred to hospital. Finally, 112 patients were discharged, 77 at home (60.15%) and 35 to a nursing home (27.34%).

The following table shows the differences in the means obtained in the two groups.

Variables at admission	Patients died	Patients discharged
Average age	85.07	83.18
Sex (% women)	77	87.7
Charlson Index	4.64	1.91
MNA	16.42	19.35
BMI	22.67	25.14
Barthel index	28.57	33.17
Tinetti scale	4.46	3.94
FAC	0.53	0.33
Braden scale	15.38	17.03
MMSE	15.17	20.50

Conclusions.
1) One in 10 patients admitted for rehabilitation of a hip fracture die during their stay.
2) In our unit, the factors that determine higher mortality are: age, comorbidity, nutritional status, level of dependence, risk of pressure ulcers and cognitive impairment.
3) The problems of balance and gait at admission do not behave as predictors of mortality.

Cardio and cerebrovascular disorders 2/*Trastornos cardio y/o cerebrovasculares 2*

PC-268

Vascular and cardiac echographic signs of ageing in a non-diabetic, non-smoker elderly population

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Aim of the study.– To evaluate the heart and vascular aging parameters using ultrasound scan techniques, as well as non-invasive autonomic function test, and the statistical correlation with age, body mass index (BMI) and abdominal circumference (AC), in a non-smoker, non diabetic elderly population.
Methods.– Sixty Finnish subjects residents in southern Spain. Mean age 65.4 (8.2) years. Female gender 63%. Mean BMI 27.67 (4.23)m^2/kg. Mean AC 93.89 (15.74) cm. Echocardiographic parameters measured: Left ventricle septum vs. posterior wall ratio; systolic aortic widening; tricuspid and mitral annulus displacement (TAD); isovolumic relaxation time (IRT) and E/A ratio; aortic root diameter vs. aortic valve opening ratio (RAoApAo); Wilkins index of the mitral valve; aortic valve Vmax. Vascular parameters: intima/media carotid index (IMCI); systolic carotid widening; abdominal-aorta internal diameter. Autonomic function tests: Orthostatic index (30/15 score), Handgrip test and breathing heart rate variability test.
Results.– TAD was less in the older group. There is a negative correlation between age and E/A diastolic filling ratio ($r = -0.54$). Autonomic function did not show differences related to the age. The table shows differences between two groups created with a cutpoint of 68 years. A higher BMI correlates with longer IRT ($P = 0.01$), with RAoApAo ($P = 0.02$) and with higher internal aortic diameter in the abdomen ($P = 0.02$).

Parameter	< 68 yrs M (SD)	> 68 yrs M (SD)	*P* (Student *t*)
TAD	1.98 (0.26)cm	1.87 (0.25) cm	0.05
E/A Ratio	1.28 (0.47)	0.88 (0.30)	0.003
RAo/ApAo	1.68 (0.28)	2.00 (0.49)	0.003
BMI	25.70 (3.52)	29.54 (3.93)	0.0003
IMCI	0.67 (0.13)	0.80 (0.15)	0.001
Wilkins	4.27 (0.70)	4.79 (1)	

Conclusions.– TAD could be used as a non invasive parameter of cardiac aging along with other known parameters. BMI affects diastolic parameters more than age itself.

PC-269

Renal function as predictor of in-hospital mortality among congestive heart failure

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Introduction.– Renal status defined as serum creatinine, urea and serum electrolytes (sodium and potassium) is closely related to prognosis in adult patients with acute heart failure.
Objective.– To determinate if renal function and serum electrolytes at admission predict the in-hospital mortality in elderly patients with acute heart failure.
Methods.– Patients admitted in to the Geriatric Acute Ward with acute heart failure for 18 consecutive months were enrolled. Serum creatinine, urea, sodium and potassium at emergency admission were collected. Relationship between those variables and in-hospital mortality was studied.
Results.– One hundred and seventy-five patients, with a mean age of 86 ± 5.7 years, were evaluated. Mortality rate was 15.43%. Mortality was positively related to serum potassium ($P < 0.001$, OR 1.02), serum creatinine ($P < 0.001$, OR 4.1) and serum urea ($P < 0.001$, OR 1.02). Serum sodium was negatively related to mortality (P 0.19, OR 0.94). Only urea was independently related to mortality ($P < 0.001$, OR 1.02).
Conclusions.– Renal function is decisive on in-hospital mortality in elderly patients admitted with acute heart failure.

PC-270

Primary angiolasty in octogenarians: Clinical features and mortality

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Introduction.– Primary percutaneous coronary intervention (pPCI) is currently the treatment of choice for patients presenting with ST-segment elevation myocardial infarction (STEMI). The value of these therapies in very old patients is well established. Many baseline characteristics associated with elderly patients may influence on short and medium-term mortality after pPCI. The aim of this study was to evaluate the influence of prognosis factors in the elderly population.
Methodology.– Eighty patients older than 80 years old scheduled for pPCI were included. Several clinical features of presentation, risk factors, comorbidity, Katz rate were recorded. Clinical follow-up was performed during 6 months. Clinical and technical features were evaluated with short and medium mortality rate by $\chi 2$ test mean comparison and multivariate analysis.
Results.– Average age was 83.8 years (80–91.3). 65.8% was males. Hypertension, diabetes and dyslipidemia were present in 56, 73 and 23% respectively. 82.5% of all patients presented Katz A and 21.5% were Killip III-IV class. A radial access was performed in 73.7%. Mortality rates during in-hospital care and 6 months later were 13.8 and 22.4% respectively. In Cox proportional hazards analyses on admission, presence of non-Katz A class (RR 3.1 $P = 0.04$), Killip IV class (RR 13.0, $P < 0.001$) and femoral access (RR 4.9, $P = 0.002$) emerged as independent predictors of mortality events. When these analysis were performed at 6 months after discharge, only the Killip IV class predicts mortality rate (OR 13.2, CI 95%: 2.4–71.1).
Conclusions.– Cardiogenic shock (Killip IV class) on admission in elderly patients with STEMI, is a powerful predictor of cardiovascular events on admission and discharge after pPCI. Katz class and femoral access are an useful tool to identify patients with worse short-term prognosis.

PC-271

Diagnosis and prognosis of heart failure in elderly hospitalized patients

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Objectives.– To characterize the clinical profile of geriatric patients hospitalized for acute heart failure (HF) and identify medical factors related to mortality and readmission.
Methods.– Prospective observational cohort of 58 patients hospitalized for acute HF, collected since September 2010 to February 2011.

We filed demography data, geriatric assessment (Katz), comorbidity (Charlson), cardiovascular risk factors and antecedents of heart disease. The diagnosis of HF was based on clinical evaluation (Framingham criteria), NTproBNP levels and echocardiography when available. We assessed NYHA symptom classification and AHA stage classification, both at admission and discharge. The patients were followed for at least 3 months after discharge to identify HF-readmission and deaths.

For the relationship of mortality and readmission with the other variables we use Fisher exact test and logistic regression analysis.

Results.– Fifty-eight patients, mean age 87 years, 40 women (69%), characterized by low functional dependency (Katz A-B 41%), minimal symptom limitation (NYHA 1-2, 53%) and high comorbidity (Charlson > 3, 55%). We identified prior heart disease in 39 patients (67%), although most of them (67%) had never been hospitalized for HF. Tachyarrhythmia (32%), infection (24%) and anemia (13%) were the main precipitating causes. Echocardiogram was request for patients with acute *de novo* HF, and patients with adverse progression of chronic HF. It was perform in 31% and demonstrated unknown heart disease in the 66% of them.

Worsening of AHA classification occurred in 51% of patients, while the 72% kept the same NYHA stage. Twenty-five (36%) developed medical complications during hospitalization (cardiovascular 68%). Eighteen patients (31%) expired, 9 of them after discharge. There were seven (12%) HF-readmissions.

Readmission was significantly associated with age and long hospital stay, and mortality was significantly associated with age and dependency (Katz F-G). Patients without NYHA worsening during hospitalization had significant less readmission. The results are reported with 95% confidence intervals.

Conclusions.– First acute HF episode unmask advanced and unknown structural heart disease.

Older age is more related to mortality and readmission than NYHA stage, AHA stage or NTproBNP levels.

PC-272

Left ventricular dysfunctions in the elderly: a new baseline for therapeutic decisions

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Introduction.– The prevalence of left ventricular dysfunction in the elderly in Russia is unknown. Moreover, there is no data on its asymptomatic course available. It is still unclear which diagnostic and treatment measures are needed in primary care setting.

Our research aims to assess the prevalence of different stages and severity of left ventricular dysfunctions among elderly by means of echocardiography in relation to a standardized clinical assessment.

Method.– A random sample of 284 community-dwelling elderly 65 years and older of St. Petersburg district was chosen. Echocardiographic investigation was conducted with a digital portable scanner. The myocardial function was evaluated according to international and national recommendations. The symptoms of heart failure were recorded with the objective scale of clinical assessment as suggested by Yu Mareev (2003).

Results.– Based on the level ejection fraction, the prevalence of systolic left ventricular dysfunction (EF $\leq$ 50%) was identified. It made up 7.8% (95% CI = 4.9–11.5%). The prevalence of symptomatic systolic left ventricular dysfunction was 6.0% (95% CI = 3.5–9.4%) and that of asymptomatic was 1.8% (95% CI = 0.6–4.1%).

Subjects with preserved EF were also classified for the degree of diastolic dysfunction according to the E/A ratio. The elderly with atrial fibrillation and significant valvular dysfunction (7.8% (95% CI = 4.9–11.5%) were excluded from further analysis.

The prevalence of diastolic left ventricular dysfunction was 72.5% (95% CI = 67.0–77.6%). Among them 57.4% participants had mild, 13.4% moderate, and 1.8% severe degree of dysfunction. 12.0% (95% CI = 8.5–16.3%) were characterized by normal E/A ratio.

Symptomatic diastolic left ventricular dysfunction was found in 52.8% (95% CI = 46.8–58.7%) of the cases, and asymptomatic in 19.7% (95% CI = 15.3–24.8%). Among those with normal E/A ratio 7.8% (95% CI = 4.9–11.5%) had symptoms of heart failure and 4.2% (95% CI = 2.2–7.3%) were asymptomatic.

Conclusions.– Left ventricular dysfunction in population studied is highly prevalent. Echocardiography could be recommended for identification of older adults at high risk for CVD who might benefit from early therapeutic interventions at primary care settings.

PC-273

Blood pressure control over 80

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Aim of study.– To evaluate blood pressure control in patients over 80 years old in clinical care and to compare to blood pressure in patients from 65 to 80 years old.

Patients and methods.– Study included all patients older than 65 years-old who came to our unit with a follow-up longer than 6 months. Demographic data, blood pressure values as the average of the last two shots, and antihypertensive drugs used and a number of tablets were collected.

Results.– Five hundred and seventy-two patients were included, mean age 75.4 ± 5.9 years old, 53.1% were women. Mean blood pressure was $143.2 \pm 20/70.3 \pm 9.8$ mmHg. Blood pressure control (under 140/90 mmHg) was achieved in 46.8% for systolic, 96.3% for diastolic, and 45.9% for both levels.

Difference between groups younger and older than 80 years old are shown in the table. Patients older than 80 used 1–2 tablets of antihypertensive drugs compared to younger than 80 who needs 2–3 tablets.

Conclusions.– Blood pressure control in patients older than 80 is similar to younger patients. Very old patients have a higher pulse pressure. No difference in antihypertensive drugs was found, except a lower prescription of angiotensin receptor blockers. Number of antihypertensive tablets in very old patients is lower than younger patients.

	Patients < 80	Patients > 80	*P*
Age (years)	75.9 ± 3.9	86.3 ± 3	
Sex (% women)	51.8	57.2	NS
Creatinine (mg/dL)	1.49 ± 0.9	1.59 ± 0.81	NS
Weight (kg)	75 ± 13.5	68.4 ± 12	< 0.0001
SBP (mmHg)	142.6 ± 19.3	145 ± 21.8	NS
DBP (mmHg)	71.1 ± 9.6	68 ± 10.2	0.001
PP (mmHg)	71.5 ± 19	77.1 ± 19.6	0.003
SBP control (%)	48.2	42.7	NS
DBP control (%)	96	97.2	NS
BP control (%)	47	42.7	NS
ACE inhibitors (%)	19.4	20.7	NS
ARB (%)	55	34.5	< 0.0001
Diuretics (%)	66	71.7	NS
Ca channel blockers (%)	63.5	55.2	NS
Beta blockers (%)	34.2	26.2	NS
Alfa blockers (%)	9.4	9	NS
Others antihypertensives (%)	12.9	7.6	NS

PC-274

Incidence of cerebral insult in geriatric patients with atrial fibrillation, in or not in therapy with warfarin

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Introduction.– Atrial fibrillation (AF) is a common disorder increasing with age. Five percent of people > 70 years are known to suffer from AF. This number is likely to be higher, and many patients are probably suffering from AF without knowing, thus increasing the risk of cerebral insult (CI), since these patients are not receiving anticoagulation (AC) therapy. Secondly many geriatric patients are not receiving AC therapy because of risks, ex. fall or dementia.
Yet former studies have shown that the risk of CI in patients with AF, not in AC therapy, is greater than the risk of major bleeding in patients in AC therapy.
The purpose of this study was to illuminate the incidence of CI in geriatric patients suffering from AF, with or without AC therapy, in order to reveal the effect of treatment.
Method.– A retrospective study was made of all patients with AF diagnosed by R-test (event recorder) in the Department of Geriatrics in 2010. Sixty-two patients, 38 women, and 24 men were included. Mean age 83.5 years.
All R-test were examined. Information about AC therapy where obtained in the patient files (OPUS) and description of cerebral CT-scan was taken from the database (web1000).
Results.– Among the 62 patients included, 11 received AC therapy, 51 did not. Seven of the 11 patients (64%) had a history of CI, four (36%) had not. 20 of the 51 patients (39%) not receiving AC therapy had a history of CI, 31 (61%) had not.
Discussion.– The reason why we find more patients with a history of CI among those receiving AC therapy is likely to be that many geriatric patients are suffering from AF without knowing. AF is not diagnosed and treated until they are admitted to hospital because of CI. This emphasizes the importance of revealing and treating the AF with AC therapy before patients suffers from CI, ex by a more frequent use of R-tests.

PC-275

Impact of cardiovascular comorbidity on operative treatment and length of stay in elderly with hip fracture in area of Belgrade, Serbia

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Introduction.– Hip fracture has character of epidemy in elderly in the world, and on territory of Belgrade, the capital of Serbia. It is important because of social and medical aspects, with repercussion on economy.
Method.– Was to examine impact of cardiovascular comorbidity on treatment, conservative and operative, length of stay in hospital, in elderly with hip fracture. A retrospective and descriptive study was conducted during 2007. Inclusion criteria: Belgrade residents, admitted and treated in hospital for hip/femur fracture in Belgrade, aged 65+, with an acute fracture of the hip/ femur (Code S72, all sub-codes according to ICD 10). Source data were bills for hospital treatments from Belgrade Institute of Public Health database. They were divided into two main groups, with and without cardiovascular diseases (CVD), and further into groups with single disease: hypertension (HTA), Angina pectoris (AP), pulmonary embolism (PE), cardiomyopathy (CMP), arrhythmias (ARR), heart failure (HF) and without these diseases, and in each group, into subgroups: operated and non-operated patients. Examined parameters: age, length of stay, length of waiting for operation.
Results.– In some groups no one was operated immediately after admitted, patients waited minimally 1 day (AP), or 2 days (PE, ARR). There are statistically significant results in groups as follows: Patients with PE are younger then group without PE (74.55 ± 6.82 vs. 78.01 ± 6.38, $P = 0.047$, $P < 0.05$). Operated patients with AP waited shorter for operation then operated without AP (6.10 ± 3.44 vs. 7.65 ± 6.63 $P = 0.029$, $P < 0.05$). The length of stay of operated elderly was longer then non-operated, in groups as follows: without CVD (26.70 ± 16.23 vs. 16.81 ± 21.29, $P = 4.4959 \times 10?^{1}?$, $P < 0.001$), with HTA (27.77 ± 12.44 vs. 14 ± 14.41, $P = 1.263 \times 10??$, $P < 0.001$), with AP (23 ± 8.33 vs. 15.65 ± 14.78, $P = 0.019$, $P < 0.05$), without PE (26.82 ± 15.98 vs. 16.41 ± 20.57, $P = 5.658 \times 10?^{2}?$, $P < 0.001$), without CMP (26.93 ± 16.18 vs. 16.62 ± 20.62, $P = 1.5408 \times 10?^{23}$, $P < 0.001$), with ARR (27.87 ± 9.09 vs. 16.75 ± 20.78, $P = 0.0036$, $P < 0.005$), without HF (26.88 ± 16.17 vs. 16.66 ± 20.65, $P = 4.121 \times 10?^{23}$, $P < 0.001$). In other examined parameters there were not statistical significance.
Conclusions.– There were registered small number of patients with CVD, probably due to insufficient registration of diseases, operated patients stay longer in hospital, probably due to operation itself, postoperative complications, and other comorbidity except cardiovascular. We conclude that we must improve registration of diseases, that CVD have not great impact on treatment and length of bad stay.

PC-276

Ambulatory blood pressure monitoring as main method of measurement in hypertension control of geriatric patients

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Objectives.– We wanted to assess the circadian profile and correlate the relationship between clinical blood pressure and the ambulatory blood pressure monitoring in geriatrics patients in Toledo health area.
Patients and methods.– We conducted a descriptive, transversal study that include patients > 75 years old recruited in geriatric health care consultation in Toledo health area and that includes patients in the MAPAPRES-CARDIORISC project, We register Ambulatory pressure monitoring dates, laboratory results and clinics dates. The time of inclusion was from June 2006 until November 2010. In the 97% of the records of Ambulatory pressure had the standard quality and was includes. No Dipper was defined as a change in mean awake blood pressure to sleep blood pressure was less than 10%. And Riser was defined like a blood pressure nocturnal more than diurnal.
Results.– We included 1342 patients (58% females, 42% males). The mean aged was 85.3 years. We made the ambulatory blood pressure monitoring for the following reasons: Circadian profile study 29%, Treatment assessment 43%, others 28%. Ninety-five percent patients had risk factor associated with hypertension. The means value of blood pressure was: arterial systolic pressure (ASP)/arterial diastolic pressure (ADP) isolated clinical 143.3/77.70 mmHg; ASP/ADP 24 hours 130.9/69.92 mmHg; ASP/ADP in activity (diurnal) 130.98/71.10 mm Hg; ASP/ADP in rest 129.18/66.46 mmHg.
Circadian profiles that we found: riser 42%, no dipper 43.3%, dipper 13.8%. Dipper extreme 0.7%. We found 18.44% of patients had good clinic control and a deficient control by Ambulatory pressure

monitoring (masked HBP). 14.67 had a bad clinic control and good control by ambulatory blood pressure monitoring (HTA of coat).
Conclusions.– Not-reducer profiles were the most common clinical profiles in the Geriatrics patients (no dipper and riser), and carry it to worse outcome. Likewise, the values in ambulatory pressure monitoring differ of the ambulatory consultation. We find high values of masked hypertension and hypertension of the coat. For both reasons we suggest the Ambulatory pressure monitoring in the elder people with hypertension, like a skill in the classification and treatment.

PC-277

Dietary glycemic index and glycemic load and depression in institutionalized elderly people in Madrid (Spain)

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Aim.– To examine the association between dietary glycemic index (GI) and load (GL) and depression in institutionalized elderly people.
Method.– This was a cross-sectional observational study, carried out in four nursing homes in Madrid (Spain). One hundred and eighty-three elderly persons aged 65 to 97 years agreed to be included in this study, and 166 subjects (108 women and 58 men) provided completed data on diet and affective status. Dietary intake was monitored using the precise weighing method (seven consecutive days). The energy, nutrients and GI and GL of the diets consumed by each subject were calculated using the Spanish Food Composition Tables (ref) and DIAL software (ref). Depression was evaluated by Yesavage's Geriatric Scale Depression of 15 items (GDS). Subjects were divided in depressed (D) (GDS score > 5) and non-depressed (ND).
Results.– There was an association between depression and sex: 55% of women had depression (GDS > 5) versus 32% of men ($P < 0.01$). The energy intake was adjusted to the theoreotical energy expenditure (101.8 17.3% without differences regarding sex). Mean dietary GI was 51.2 ± 3.7 and mean GL was 96.4 ± 19.6, and both were significantly higher in males. Energy intake and dietary GI were similar in D and ND group, but those depressed subjects followed diets with significantly lower amount of food (g/day), fruits (g/day), drinks (g/day), carbohydrates (g/day and % of energy) and dietary GL. GDS score was negatively correlated with the dietary GI (Spearman $r = -0.1699$, $P < 0.05$) and with adjusted GL (for energy and sex) calories and sex (Spearman $r = -0.2588$, $P < 0.001$). Among males, the observed OR (the 95% confidence intervals) for the depressive state were 0.11 (95% CI: 0.01–1.1, $P < 0.05$) in the highest quartile of dietary GL. Among females, the observed OR were 0.15 (95% CI: 0.05–0.47) in the highest quartile of carbohydrate intake, and 0.24 (95% CI: 0.08–0.75) in the highest quartile of dietary GL.
Conclusions.– The results suggested that carbohydrate intake and dietary GL are associated with lower depressive symptoms among elderly persons.

PC-278

The prevalence of diabetes in subjects older than 65 years – polish population study, PolSenior project

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Introduction.– Diabetes mellitus (DM) is one of the most devastating chronic diseases. In elderly subjects, onset of diabetes frequently remains asymptomatic, causing delay in the initiation of therapy and increasing the probability of complications. Estimation of the frequency of undiagnosed diabetes in Polish elderly population was one of many research questions of the PolSenior Project, a population study of medical, psychological and socio-economic aspects of aging in Poland.
Methods.– The study group consisted of 4976 subjects (2566 M, 2410 F) aged 65 and over. A detailed history concerning diabetes and its medical treatment was obtained from all subjects. Fasting serum glucose concentration was assessed among the set of over 50 blood parameters.
Results.– Diabetes has been previously diagnosed in 17.7% subjects (15.5% M, 20.1% F; $P < 0.0005$). The prevalence of DM was highest in the group aged 80–84 and lowest in nonagenarians (20.6 vs. 14.5%; $P < 0.0005$). In less than one third (27.9%) of DM subjects, fasting glucose level was below 100 mg/dL, and in 42.3% above 125 mg/dL. Among respondents with a negative history of diabetes, serum fasting glucose was measured in 3366 subjects. Glucose level of 100–125 mg/dL, 125–200 mg/dL, and > 200 mg/dL was detected in 25.0, 4.9 and 0.7% subjects, respectively. The elevated glucose level was observed more frequently in males than in females (22.6 vs. 20.5%). Among patients without previously diagnosed DM, glycosuria was present in 1.2% of subjects with serum glucose < 100 mg/dL, 1.5% with serum glucose 100–125 mg/dL, and 17.8% with serum glucose above 125 mg/dL.
Conclusion.– More than 40% of DM patients are not successfully treated and at least 16% of diabetic subjects (3.9% of the studied population) remain undiagnosed within the elderly Polish population. Adequate screening for diabetes among pre-elderly population e.g. people aged 45 or older, as well as elderly subjects should be among priorities of public health in the face of an aging society.
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PC-279

Fibrinolysis in ischaemic stroke in older than 81 years old

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Introduction.– The cardiovascular diseases are, in industrialized countries, the main cause of death. In Portugal, were responsible for 37.5% of the total of deaths in 2005, being 66.5% related to cerebral vascular disease and the other 33.5% to coronary disease. Recently the European Stroke Organization published an update in the Guidelines for Management of Ischaemic Stroke and Transient Ischaemic Attack. Accordingly to this revision the clinical criteria for fibrinolysis no longer takes in account the age of the patient but instead the previous functional state.
Methods.– This is a retrospective analyses of the patients admitted in the Stroke Unit/Infirmary of the Neurology Department of Coimbra's University Hospital, from 1st January to 31st December of 2010. Within a total of 468 patient admitted we stroke/TIA we've selected those is ischaemic stroke, submitted to fibrinolysis and compared the outcomes in the group of elderly below 81 years old and with older, by comparing the Rankin Score (RS) at the discharged day.

Results.– Were admitted in the unit/ infirmary, 468 patient with stroke/TIA, 64.7% (N: 302) were older than 65 years. Fibrinolysis was performed in 19.5% (*n*: 92) of the total stroke patients, being 72.8% (N: 67) older than 65 years old. Among the elderly group who received acute phase treatment 16.4% (N: 11) were older than 81 being the eldest 90. We evaluated the outcomes comparing the RS at the discharge day. The average RS in the eldest group was five reflecting a very high dependent status, and in the within 65 and 81 years old the average RS was 4. This might be due to the fact that the RS was calculated using the information concerning the functional status at the discharge day, and not in the days after thrombolysis, especially because the average length of stay was 19 days, which led to several medical complications.
Conclusion.– The Medical way of dealing with the geriatric population is changing, leading to various guidelines revisions, diminishing the importance of the real age as a decision factor in favour of the functional age, being as important to be prepared to the difficulties of this decision.

PC-280

Systolic blood pressure and mortality in older old patients with heart failure

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Purpose.– To analyze relationship between outpatient clinic blood pressure and mortality in elderly patients previously admitted with HF.
Methods.– Prospective study of 245 discharged patients admitted with HF. We analyzed the influence of systolic blood pressure (SBP) at 6 months from discharge on subsequent mortality in three groups of patients: hypotensive patients (hypoBP group) when SBP was 115 mmHg or less, normotensive patients (normoBP group) when SBP was 116–135 mmHg and hypertensive patients (HYPERBP group) when SBP was higher than 135 mmHg.
Results.– 64% of patients were women, the mean age 84.8 ± 5.4 years and 76.6% had preserved ejection fraction. Mean of systolic blood pressure was 107.32 ± 7.4 in hypoBP group, 126.04 ± 5.15 in normoBP group and 154.75 ± 14.9 in HYPERBP group.
Mean survival time (in weeks) from discharge was 88.3 ± 9.4 (HypoBP group), 103.5 ± 8.2 (normoBP group) and 115 ± 5 (HYPERBP group), $P = 0.015$. Mean survival after 1 year from discharge (in weeks) in 241 patients was 40.9 ± 2.4 (HypoBP group), 44.8 ± 1.8 (normoBP group) and 48.1 ± 0.9 (HYPERBP group), $P = 0.008$.
Once adjusted for age, LVEF, renal function, NYHA functional class and previous treatment with ACEI or ARB, higher systolic blood pressure on 6 months after discharge was independently associated with survival.
Conclusions.– In stable elderly patients with chronic heart failure, low blood pressure is associated with increased mortality. A more particular study on hemodynamic parameters such as circadian variations in BP should be developed.

PC-281

Analysis coronary angiography performed in elderly patients in an acute unit in a district hospital

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Objective.– To analyze the number, purpose and characteristics of patients who underwent angiography requested from our unit.
Patients and methods.– We reviewed the coronary applied to patients aged 80 years or more, during the 3 years of operation of our unit in our hospital of reference. We collected data on age, sex, cardiovascular risk factors, functional status and reason for request.
Results.– Between 2008 and 2011 claimed a total of 25 coronary angiograms, of which three have not been able to analyze them for not having the time of data collection. The average age of the 22 tested was 83.36 years (age range: 80–90), 59.1% were women. All patients had good functional status (independent for activities of daily living), except 2 who needed partial to ABVD and without cognitive decline except one. The reason for the request was after admission for acute coronary syndrome (dyspnea, squeezing pain or heart failure with abnormal ECG and/or cardiac analysis) except in two cases in which the application was pre-surgically by valve replacement (aortic stenosis).
The risk factors listed plus age, were hypertension and dyslipidemia (72.73% each), DM type 2 (40.91%) and obesity (13.66%), being diagnosed with coronary heart disease nearly a third (31.82%). In 10 patients (45.45%) was therapeutic test in one case but was unsuccessful. In six cases (27.27%) was considered non-revascularizable disease and four patients (18.18%) coronary angiography was normal or no significant lesions. In one patient coronary angiography was not carried out after assessment by the coronary hemodynamic service due to cognitive impairment and in another case, the patient refused the test performance.
Conclusions.– Analyzing the data, we conclude that the profile of the patient who has coronary angiography in our unit had good performance status, major cardiovascular risk factors and almost half of them were diagnostic and therapeutic technique.

PC-282

Diagnostic performance of high-sensitivity troponin in emergency elderly patients

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Background.– Recently, newer assays for cardiac troponin (cTn) have been developed, which are able to detect changes in concentration of the biomarker at or below the 99th percentile for a normal population.
No data is available on their diagnostic accuracy in elderly patients, despite a high prevalence of elderly patients with chest pain in ED. The objective was to evaluate the diagnostic performance of a new high-sensitivity troponin assay (HsTn T), to define its threshold value in elderly patients.
Methods.– Inconsecutive patients presenting to three emergency departments with chest pain suggestive of AMI, levels of HsTn T were measured at presentation, blinded to the emergency physicians. The discharge diagnosis was adjudicated by two independent experts using all available data. The population was divided in elderly patients ($\geq$75 years) and other.
Results.– Three hundred and seventeen patients were included; 54 (17%) of them were aged 75 and higher. AMI was confirmed in 45 patients (14%), 20 (9%) of them were in the elderly group. There was no difference in area under the ROC curve for HsTn T between elderly group and the other group (0.95 [0.86–0.99] vs. 0.93 [0.89–0.96], respectively). However in the elderly group, defined cut-off value of HsTn T was 0.032 μg/L compares to 0.014 μg/L in the other group. HsTn T identified AMI with a higher sensitivity in the elderly group than in the other group: 100, 95% Confidence Interval [68–100] vs. 91% [75–98], respectively). The negative predictive

value was also excellent (100% [87–100] vs. 99% [96–100], respectively).
Conclusion.– In elderly patients, HsTn T seems to be accurate for an exclusion of AMI in ED, with an excellent NPV.

PC-283

"What looks like a stroke is not always a stroke" an observation study of patients presenting with suspected stroke in the emergency room (ER) of a general hospital

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Objective.– To study patients who either presented with suspected stroke, or were discharged with an acute stroke diagnosis or both in a general hospital. This was part of a quality study with the aim of improving hospital care for important groups of patients.
Patients and materials.– The main prospective observation study included 1565 acute admissions (91% of all) during 3 months in 2006 at a general hospital in Oslo, Norway, covering a population of 118,000. In this sub-study the inclusion criteria were acutely admitted patients with suspected stroke or patients who were discharged with an acute stroke diagnosis. The discharge diagnoses used were according to the ICD-10 system; TIA (G45), SAH (I60), ICH (I61) and ischemic stroke (I63).
Results.– One hundred and fifty-eight patients (10%) presented with suspected stroke, but only 67 (42%) of the suspected received an acute stroke diagnosis; 40 ischemic strokes, 17 TIAs, nine ICHs and one SAH. Of patients presenting with suspected stroke but not diagnosed with acute stroke, the most common discharge diagnoses were other brain disorders (traumatic, previous stroke), infections and a wide range of medical illnesses including metabolic disorders.
Eighty-nine of the 1565 (6%) had an acute stroke diagnosis at discharge; 53 ischemic strokes, 20 TIAs, 13 ICHs and three SAHs. Twenty-two (25%) did not present with suspected stroke but with general symptoms and geriatric syndromes such as falls, delirium and functional decline.
The prevalence in this hospital catchment area was 300 for all acute strokes (TIA included) and 180 for ischemic stroke per 100,000 per year. Mean age of patients with suspected stroke was 76 (SD 15.4) years, 60% female, while mean age of patients wih stroke diagnoses was 79 years (SD 14.2) and 58% were female. Five-year mortality for patients diagnosed with stroke was 50%.
Conclusion.– In this patient population acutely admitted to a general hospital 10% presented with suspected stroke but less than half of them received a diagnosis of acute stroke. On the other side, one of four of patients discharges with an acute stroke diagnosis did present with general symptoms; i.e. geriatric syndromes not particularly suspicious for stroke.

PC-284

Management of transient ischemic attack in a dedicated TIA clinic in UK a complete audit cycle

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Introduction.– Transient ischemic attack (TIA) is medical emergency. There is a 20% risk having a stroke within first 4 weeks after a TIA, with greater risk within the first 72 hrs. Referral for specialist assessment and investigation is required for all patients presenting with a TIA or minor stroke within 24 hours in high-risk cases or within 7 days in all other cases. This is the gold standard as per National Institute for Clinical Excellence (NICE) guidelines. According to National Stroke strategy, only 35% TIA patients are being seen and investigated in a dedicated neurovascular clinic within 7 days.
Method.– In 2005/06 we audited 121 suspected TIA patients who attended the rapid access clinic (RAC) against the gold standard. TIA patients are seen in this clinic. After this audit following changes were made in order to improve practice:
– presentation of results and implementation plan to staff in the hospital monthly care of the elderly educational meeting, audit meetings and educational half day for medicine;
– front line staff, GPs and accident and emergency staff, awareness programme about dedicated TIA clinic run by RAC and a new TIA referral form;
– staff education to enhance robust use of TIA clerking proforma to standardise TIA care;
– dedicated slot to prioritise TIA patients in RAC with dedicated staff including doctors.
We re-audited 166 suspected TIA patients who attended in 2009/10 in order to complete the audit cycle.
Results.– In 2009/10 audit, 81% (135/166) were diagnosed with TIA as compared to 71% (86/121) in 2005/06 audit. Sixty percent (52/86) patients in 2005/6 audit were female compared to 52% (65/135) in 2009/10 audit.
Seventy-seven percent (104/135) patients were assessed within 7 days in the 2009/10 audit compared to 57% (49/86) in 2005/06 audit. This indicates a significant difference between two audits in terms of patient assessment within 7 days ($\chi 2 = 10.789$, $P < 0.05$).
Conclusion.– Time scale for specialist assessment and investigation of TIA in a dedicated neurovascular clinic has significantly improved which is well above the current national average and is in accordance with current guidelines.

PC-285

Dublin midlands stroke network partnership (SNP) – improved access to thrombolysis by partnership model of telemedicine

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Introduction.– Thrombolysis is a time dependent treatment. Provision of thrombolysis services is often restricted by stroke consultant numbers and large geopgraphical areas.
Method.– Dublin Midlands SNP consists of four acute general hospitals and a regional centre covering a population of 760,000. In 2009, thrombolysis available in two hospitals on a 24/7 basis. In 2010, we introduced 24/7 telemedicine service, with RPC-7 (InTouch Health) units at the regional centre (AMNCH Tallaght) and Naas General (NGH) and Midlands Regional Hospital Mullingar (MRHM). From four network hospitals, five stroke geriatricians and one neurologist participated in a unified out of hours acute stroke telemedicine rota. We present first a 12-month activity data.
Results.– Forty-three stroke patients admitted in a 12-month-period across the three sites. Two hundred and seventeen (39%) patients acutely assessed for thrombolysis, 66 (30.4% all consultations) by telemedicine. Eighty (14.7%) patients received thrombolysis 31 (39%) by telemedicine. Thrombolysis rates in the three sites were 14.5% AMNCH, 11.7% NGH and 17.1% MRHM compared to 6.9, 2 and 15% respectively in 2009.
Discussion.– Introducing a telemedicine system improved thrombolysis rates in participating hospitals and provided 24/7 network

cover. Working as a telemedicine partnership rather than 'hub and spoke' is a successful and sustainable model of acute stroke networks.

PC-286

Age and length of stay following an acute stroke: results from a stroke register in a general hospital in Ireland

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Introduction.– Stroke, in comparison to other causes of hospitalisation is associated with a prolonged length of stay (LOS). Here we present data from a stroke register on all patients admitted under a stroke team with a presumptive diagnosis of stroke over a 6-month period.
Methods.– Patient demographics and investigation results were collected prospectively on all patients and entered into a stroke register. Subdural or subarachnoid haemorrhage was excluded.
Results.– Between November 2010 and the end of April 2011, 97 suspected strokes were admitted under our stroke service, median age 72 (range 30–91). The percentage of males to females was 52 to 48%. Of these 83 were confirmed as strokes (infarct $n = 81$, intracranial haemorrhage $n = 2$) with 14, suspicious for stroke, deemed to be transient ischaemic attacks's (TIA) following negative diffusion weighted imaging and clinical reasoning. 70% were > 65 years and of these 1/3 were over 85 years. Most patients were Irish but of note 9 (11%) were Eastern European (8 males < 65 years). The average LOS, where yet available, was 21 days. Older patients, those > 65 had a shorter LOS at 16.2 days (range 1–78) whereas those < 65 had an average of 23.5 (range 1–140). Forty-six percent of strokes ($n = 38$) were transferred for rehabilitation, 17% of whom were > 85. Ninety-seven versus 78% of non-rehab strokes were discharged home (or back to nursing home) or remain undergoing therapy. There was no difference in severity of stroke (as determined by the Bamford scale) between those transferred for rehabilitation and those not requiring rehabilitation ($P < 0.05$). Overall stroke mortality was 10.8%. Those > 85 had a higher mortality, 20 versus 7.2% < 65, ($P < 0.05$).
Conclusion.– LOS in our cohort reflects well against reported international studies. Although mortality was higher in very old stroke patients, age was no barrier to rehabilitation, with greater than 1/3 availing and all but one returning to their admission residence. Age had no impact upon LOS. Our population reflects the new population dynamic in Ireland, with a large percentage of stroke patients being of Eastern European descent.

PC-287

Are we adequately assessing swallow in patients with acute stroke?

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Introduction.– Dysphagia is common after stroke and associated with poorer outcomes.
Following National Institute for Health and Clinical Excellence (NICE) guidance all stroke patients should have their swallow assessed on admission. Those with problems need specialist assessment within 72 hrs but preferably within 24 hrs of admission.
Method.– This audit was a random selection of thirty-two patients from Craigavon and Lurgan Stroke Units. Nine questions were based on the National Sentinel Stroke Audit and NICE guidance. We also recorded patients GCS (Glasgow Coma Scale), the admitting doctors plan regarding swallow and when patients were referred to speech and language therapy (SALT).
Results.– Twenty patients had a GCS of fourteen or more on admission. Of these only three were documented as having a safe swallow by the admitting doctor. Eleven had no comment made on their swallow and the remaining six were made NBM (Nil by Mouth). Only one patient had their swallow assessed within four hours, twelve within 24 hrs and 15 within 72 hrs. Five patients did not have their swallow assessed within 72 hrs having been admitted before a weekend or bank holiday. Of the twenty-one patients who were referred to SALT only seven had been referred within 24 hrs. Four patients were denied nutrition as they waited more than 72 hrs for a swallow assessment. None of these patients had early insertion of a nasogastric (NG) tube for feeding.
Conclusion.– All acute stroke patients should have their swallow assessed on admission. The admitting doctor can assess swallow in alert patients using the water swallow test. Drowsy patients should be NBM and referred to SALT immediately. All stroke nurses should be trained in swallow assessment. Patients not receiving nutrition need a definitive plan before a weekend or bank holiday and consideration for early NG feeding. All patients should receive nutrition within 24 hrs.

PC-288

Clinical and economical burden of oropharyngeal dysphagia among stroke patients

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Objective.– Dysphagia commonly occurs following stroke and contributes to subsequent morbidity and mortality in survivors with substantial economical implications. Literature on the burden of this medical condition is scarce. This study aimed to identify the reported clinical and economical burden of dysphagia amongst stroke patients.
Method.– Epidemiological data was collected from recent publications in stroke and/or dysphagic patients and included prevalence of dysphagia and aspiration pneumonia as the main complication. Economical data varied between publications, but mainly included hospital length of stay; and treatment costs of aspiration pneumonia.
Results.– The data demonstrates that stroke mostly occurs in people older than 65 years age ($> 75\%$). Prevalence and epidemiological figures varied widely from one publication to another. Indeed, 19 to 81% of stroke patients are dysphagic, depending on the method and time after stroke episode in which dysphagia is identified. Stroke reportedly leads to dysphagia in 5.8 to 44 million-stroke patients worldwide, of whom 4.6 to 19.6 million reside in North America and Europe. Studies have identified that 40 to 50% of dysphagic stroke patients aspirate. In addition, pneumonia occurs in up to 51% of dysphagic stroke patients whether they aspirate or not. Of course, dysphagic stroke patients who aspirate are at higher risk of pneumonia: up to 11 fold more than non-aspirators. Worldwide 230,000 to almost 23 million dysphagic stroke patients develop pneumonia, of whom 185,830 to more than 10 million are from Europe or North America. Furthermore, hospital length of stay ranges from 5.07 to 10.55 days for stroke patients with dysphagia *versus* 3.26 to 4.74 days without dysphagia. The average hospital cost for pneumonia is $ 919 per day, totalling up to $ 96.5 billion in Europe and North America regions alone.

Conclusion.– The wide variation in prevalence highlights the need for a formal dysphagia screening and/or diagnostic tool. The overall dysphagia burden is considerable worldwide, especially in Europe and North America. This burden is probably underestimated since only direct medical costs were included. However, this burden will most probably increase given the growing elderly population in developed countries, which is at higher risk of having stroke.

PC-289

Heart failure disease manament program intervention trial in the elderly (HF-geriatrics): differential characteristics of included and excluded patients

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Background.– There is good evidence supporting the implementation of disease management programmes for hospitalized adults with heart failure (HF), but only scanty data on the efficacy of such programmes in the oldest elderly with significant co-morbidity.
Objectives.– To describe baseline characteristics of patients included in the HF-Geriatrics study, a HF disease management program (DMP) intervention trial.
To analyze if there are differences between them and those who didn't fulfilled inclusion criteria.
Methods.– HF-Geriatrics is a multicenter randomized DMP intervention trial which explores the benefits of educational intervention, treatment optimization and tight clinical control of very elderly patients and high comorbidity admitted with HF to acute care geriatric units in eight hospitals in Spain. Patients were randomly allocated to a disease management programme (DMP) or to conventional usual-care. Sociodemographic, geriatric assessment and biomedical variables were recorded.
Results.– From November 1st, 2009 to April 30th, 2011a total of 925 patients were evaluated and 522 (55.4%) of them were randomized to the trial. Left ventricular systolic dysfunction was present in 36.2% of patients. Excluded patients showed a higher comorbidity index (Charlson index 7.95 ± 2.13 vs. 7.43 ± 2.01, $P < 0.001$), higher dependence on instrumental ADL (Lawton index 1.61 ± 2.11 vs. 3.36 ± 2.47, $P < 0.001$), higher cognitive decline (GDS: 2.45 ± 1.71 vs. 2.05 ± 1.56, $P < 0.001$) and a worse functional class (NYHA functional class was III or IV in 58.8% of excluded patients vs. 40% in randomized patients, $P < 0.001$).
Conclusions.– In spite of high comorbidity and age criteria to include high risk patients, individuals who fulfilled inclusion criteria for a DMP have a better functional condition, lower comorbidity, and a better NYHA functional class. This is due to functional and cognitive derangements of excluded patients.
DMP specially designed to homebound patients with high functional and cognitive decline should be encouraged.

PC-290

Determinants of prolonged intensive care unit stay after cardiac surgery in the elderly

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Objectives.– In the last decade, there has been a rapid increase in the number of elderly patients referred for cardiac surgery. Recent studies have identified risk factors for prolonged intensive care unit (ICU) staying in cardiac surgery patients. The aims of this study was to evaluate preoperative risk factors for ICU staying longer than 3 days in a cardiac surgery elderly population, and whether prolonged ICU staying may influence disability, functional recovery and length of rehabilitation.
Methods.– Two-hundred and fifty elderly cardiac surgery patients were consecutively evaluated at enter in cardiac rehabilitation after ICU dismissal from January 2008 to July 2009. Univariate and multivariate analyses for risk factors were performed for ICU staying longer than 3 days. Thereafter, 6 minute walking test (6MWT), Barthel Index (BI), BI percent recovery and length of staying (LOS) in rehabilitation were evaluated.
Results.– Mean age was 72.9 ± 4.8, 170 (68%) underwent cardiac surgery for coronary artery by-pass grafting (CABG), 56 (22.4%) valve replacement and 24 (9.6%) both CABG and valve replacement. Mean ICU stay was 2.9 ± 1.5 days and 72 patients (28.8%) spent more than 3 days in ICU. Age, NYHA ≥ 3, comorbidity, prevalence of stroke and renal failure were significantly higher in patients with than in those without ICU stay ≥ 3 days. Off-pump CABG, PASE, BI and 6MWT were significantly lower in patients with than in those without ICU stay ≥ 3 days. Multivariate analysis shows that female sex, a NYHA class ≥ 3, CIRS and PASE score are predictors of ICU stay ≥ 3 days independently by age, off-pump CABG, stroke and kidney failure. Multiple linear regression shows that ICU stay ≥ 3 days is negatively associated with six MWT, BI at entry and BI percent recovery whereas it is positively associated with a longer rehabilitation LOS.
Conclusions.– Elderly cardiac surgery patients stay in ICU ≥ 3 days are prevalently female, with high comorbidity and low physical activity. More importantly, ICU stay ≥ 3 days negatively affects functional recovery and determines a longer rehabilitation LOS.

PC-291

Aesthetic and cultural pursuits of patients with stroke

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Introduction.– There has been an increasing interest in the area of the arts in healthcare, with a suggestion that arts and aesthetics can augment patient outcomes. Designing such programmes requires better knowledge of the artistic, aesthetic and cultural pursuits of patients. For stroke, one of the most common illnesses of older people, the aim of this study was to obtain the insights of this group about the role of the arts and aesthetics in the healthcare environment.
Method.– Ethical approval was granted by the clinical research Ethics Committee. Patients attending a stroke service were administered questions from the Irish Arts Council's 2006 questionnaire on participation in aesthetics and cultural pursuits and information collected on stroke type and present functional and cognitive status. Thirty-eight patients were interviewed. Of these, 20 were inpatients in hospital at the time of the interview and 18 were interviewed in an outpatient setting.
Results.– Popular activities included mainstream cinema, listening to music, dancing, attending plays or musicals and being outdoors. Many patients ceased these activities after their stroke, mostly due to health issues and inaccessibility. The majority of patients valued the importance of the arts in the healthcare setting.
Discussion.– This study gives a perspective for the first time on the aesthetic and cultural pursuits of stroke patients prior to their stroke. It portrays a wide variety of cultural and leisure activities, and the cessation of these post-stroke. It revealed the restrictions patients felt on gaining access to leisure pursuits both while in hospital and following discharge.

PC-292

Diabetes mellitus in geriatric patients in nursing homes of Cadiz. Study Diagerca

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Objective.– To determine clinical characteristics of elderly diabetic patients in nursing homes. To study prevalence of diabetes, diagnosis, control, monitoring and therapeutic management.
Patients and method.– Population study, observational, descriptive and multicenter study in 14 nursing homes in Cadiz (Spain) Inclusion criteria: – diabetes mellitus, to stay in nursing home, to accept (patient or legal guardian) to participate in the study (informed consent). Excluding those who do not meet the three previous criteria. Study variables: age, sex, prevalence of diabetes, duration of diabetes, complications, macrovascular complications, retinopathy, nephropathy, and neuropathy. Metabolic control: frequency determination of basal blood glucose and HbA1c. Metabolic complications suffered. Treatment: oral antidiabetic and types, insulinization. Diabetes education. Functional assessment: Barthel Index and mind through MMT. Data analyzed using SPSS v17.0.
Results.– The study was performed on 1952 older patients institutionalized. Diabetes prevalence: 26.44%. Three hundred and twelve patients included. Mean age: 79.7. Gender: 57.4% women. 66.9% knew the diagnosis of diabetes for over 10 years. 55.1% have suffered a vascular event, most common ischemic stroke: 55.2%, followed by myocardial infarction, 18% and 14.5% peripheral arterial disease. 29.6% have retinopathy, 56.5% being the same proliferative rate. 21.3% diabetic nephropathy. Mean glomerular filtration rate of 55.2 mL/min.
25.6% suffering from distal symmetric polyneuropathy. Autonomic neuropathy in 37.7%. 90.1% of patients have HbA1c determination, 50% level between 7 and 9%, with semi-annual assessment rate 63.4%. Fasting glucose checks are performed in 40% weekly, 18.5 twice a week, and 22.9% daily. Metabolic complications: 7.1% diabetic ketoacidosis, hyperosmolar syndrome 2.9%, and 15.7% symptomatic hypoglycemia. Sixty-six percent of patients taking oral hypoglycemic agents. Most frequently used metformin (55.3%) followed by gliclazide and repaglinide (10.2, 3.4%). 50.2% was insulinised. Most commonly used insulin glargine (53.8%) 45.6% functional dependence. Barthel Index average of 48.4 points. And 46.1% diagnosed with dementia, moderate state, 36.7%.
Conclusions.– Diabetic patients institutionalized are elderly, long-standing diabetes, with both macro and microvascular complications, and have a degree important, mental and functional disabilities. More than half are insulinized, performing weekly glycemic control, and annual HbA1c, maintain low-intensive metabolic control. However, the most common metabolic complication was symptomatic hypoglycemia.

Geriatric assessment 2/*Valoración geriátrica 2*

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Cockcroft-Gault vs. MDRD vs. CKD-EPI > 65 years

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Introduction and objectives.– To study the glomerular filtration rate using creatinine clearance, by direct or indirect methods, such as mathematical formulas: Cockroft-Gault, MDRD, and CKD-EPI, where the weight is the essential variable. Known non-validation of these, our objective in patients over 65 years, suffering from hypertension + DM, which shows differences between the formulas for estimating glomerular filtration rate and its correlations with Pearson's r in a population > 65 years HT + DM affected by the ZBS "La Laguna" in Cadiz.
Methods.– Retrospective study, first semester 2010 of the population age > 65 with HT + DM of a significant sample of $n = 285$, a universe of 3944, with error $\alpha = 0.05$ and a sensitivity of 95%.
Results.– One hundred and twenty-six men against 159 women. The correlation between Cockcroft-CKD-Epi is 0.614; Cockroft-MDRD is 0.606; MDRS-CKD-EPI is 0.968.
Conclusions.– 1. The estimation of renal function by MDRD vs. Crokcroft estimation is unfavorable MDRD overestimation by both men and women > 65 years with $r = 0.606$. 2. When using CKD-EPI and compared with MRD has a correlation of 0.968, therefore either are valid, but the correlation between Crokcroft/CKD-EPI is $r = 0.614$, we think the lack of variable weight in the latter. 3. We make mistakes with the MDRD, having to continue using Crokcroft that despite over 70 years, has not been validated. 4. In patients > 65 years, to study the renal function by estimation, should be used first by the Crokcroft formula, and then, if you have good cognition level, and needs to urine creatinine clearance of 24 hrs, never alone or MDRD creatinine-CKD-EPI. 5. With no definite renal function in these patients, drug dosing by the polypharmacy inherent in their comorbidity, leads us to iatrogenic.

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Comprehensive geriatric assessment and length of hospital stay in acutely ill elderly medical patients

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Introduction.– Age and comorbidity are predictors associated to the length of hospital stay (LOS).
We examined the effect of Comprehensive Geriatric Assessment (CGA) on LOS in acutely admitted medical patients and evaluated data for 30-day mortality and 30-day readmission in a subgroup.
Method.– From the Danish National Patients Registry (DNPR) we identified all acute medical admissions of elderly at the University Hospital of Aarhus from January 1, 2009 to December 31, 2010.
Patients admitted directly to the neurology and cardiology departments were excluded.
The DNPR contains basic data and dates of admissions and discharge.
The comorbidity burden, using the Charlson Comorbidity Index (CCI) including the present admission, was categorized from the Regional Data System for each admission.
Results.– The total number of acute medical admissions was 8335. In the visitation process a total of 1367 patients was submitted to CGA and admitted to the geriatric department (GD).
The mean age of the patients admitted to the GD was significantly higher, 84.0 years compared with 77.8 years in other medical patients (PC-value < 0.05).
By the Mann-Whitney nonparametric test the calculated CCI-score was higher in GD (median: 1) compared to the other medical departments (median: 0).
Patients in the GD stayed for median 7 days (mean: 7.7 days) and patients in other medical departments for 6 days (mean: 8.1).
The adjusted coefficient was 1.04 [95% CI: 0.98; 1.10] in LOS for the 80+ years in the GD versus the other medical departments.

In a subgroup of 654 acutely admitted patients in the acute medical wards no differences were shown in rates of 30-day readmissions for patients submitted by CGA (14 versus 13%). Patients submitted to CGA showed a lower thirty-day mortality (6 versus 13%); (OR: 0.4 [95% CI: 0.17; 0.91]) after adjustment for age, sex and comorbidity.
Conclusion.– CGA performed in acutely ill admitted medical patients showed an equal LOS compared to patients in other medical departments although patients in GD have a significantly higher age and a higher comorbidity. CGA seems to reduce 30-day mortality.

PC-295

New formula to estimate the kidney function: CKD-EPI

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Patients and methods.– One thousand four hundred and eight patients (Pts) are examined. They belong to a basic health area in Granada with an average age of 50.4 ± 19.9 (9 as minimum age and 96 as maximum age). Five hundred and forty-eight of them are men (38.9%, average age of 51.5 ± 19.2) and 860 women (61.1%, average age of 49.7 ± 20.4). The distribution by age is: there are 52 Pts (3.6%) under 18, 968 Pts between 18 and 65, and 388 Pts (27.6%) over 65.
Formulas.– MDRD = $186.3^{*}(\text{creatinine})^{-1.154}{}^{*}(\text{age})^{-0.209}$ in case of woman*0.742.
CDK-EPI = $a^{*}(\text{creatinine/b})^{c}{}^{*}(0.993)$.
A statistical study is performed with package SPSS-15.
In accordance with the criteria of SHE and SEC, the levels of serum creatinine and the criteria of KDOQI, we analyze the kidney failure by the estimation of the glomolecular filter and using the formulas MDRD and CKD-EPI.
Results.– According to the criteria of SEC and SHE which consider the kidney failure with blood creatinine levels over 1.2 mg/dL in women and over 1.4 mg/dL in men; we find in the studied sample 85 patients (6%) with kidney failure and depending on sex we have 31 men (36.5%) and 54 women (63.5%).
If we take the criteria of KDOQI for which kidney disease is established when the patients have kidney clearances with creatinine below 60 mg/min/1.73 m^2, we find 157 patients (11.2%) with CKD-EPI formula and 179 patients (12.7%) with MDRD formula.
Conclusions.– 1. The formulas that consider the glomolecular filter from the serum creatinine (MDRD and CKD-EPI) allow to detect a high percentage of kidney failure which would be hidden if we only take into account the serum creatinine.
2. We have found in our population that the new CKD-EPI formula is more specific than the MDRD one, as in the American population.

PC-296

The relation between chair stand test at discharge and 1-year risk for re-admission to hospital in geriatric patients

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Introduction.– The chair stand test (CST) has been suggested as a prognostic marker of frailty after discharge. We evaluated if the CST is a reliable predictor of the risk for readmission after discharge from hospital.
Methods.– One hundred and sixty patients were included from Department of Geriatric, Copenhagen University Hospital of Hvidovre and followed for 12 months. Apart from demographics (age, sex and living alone), we recorded clinical characteristics (body weight, BMI, CST and Barthel Index) at discharge. During the follow up period, nine visits in patients' own home were carried out. Information about re-admission, falls and body weight was recorded. CST was performed at each visit with and without arms. Patients were stratified in two groups according to whether they were readmitted to hospital or not during follow up. Comparison between groups was performed by the Mann-Whitney U test for continuous data, whereas comparison dichotomized data was performed by Fischer's Exact test. Association between CST and risk for readmission adjusted for demographics and clinical characteristics was analyzed by multiple regression models.
Results.– Altogether, 92.5% of the patients were able to perform CST with arms, 10.7% without arms. Approximately 1/3 of the patients were readmitted. No significant differences were found with regard to age, body weight, BMI, Barthel Index or falls. Patients with and without readmissions performed similarly well at the CST (seven attempts, IQR = 4 versus six attempts, IQR = 4, $P = 0.17$). Patients readmitted were more often females ($P = 0.03$) and more often living alone ($P = 0.001$).
After adjustment for demographics and clinical characteristics we found no independent association between risk for readmission and CST (OR 0.99; 95% CI: 0.89 to 1.10, $P = 0.85$). Instead, living alone increased the relative risk for readmission (OR 4.10; 95% CI: 1.31 to 12.79, $P = 0.02$), independent of age, sex, and clinical characteristics.
Conclusion.– In this population of geriatric patients CST does not appear to be helpful in predicting readmission to hospital. Similarly, we found that age, sex, body weight, BMI, or Barthel Index were not related to readmission risk. The most prominent early predictor of readmission risk seems to be if patients are living alone.
A suitable effort must be considered.

PC-297

The Oslo-protocol. Syncope assessment for old and frail people

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Introduction.– The evaluation of syncope in old and frail people requires special concerns. The medical history is often less reliable than in younger patients, delayed ortostatic hypotension (OH) is more common in old people and tilt-table testing could be too provocative. We developed a diagnostic protocol for use in our geriatric outpatient clinic. The Oslo protocol is based on European guidelines, but adapted for use in old and frail people. Our aim was to evaluate a syncope assessment protocol with prolonged active standing but without tilt-table testing for use in a geriatric outpatient clinic.
Method.– A quality study in a general community hospital. Patients were referred from General Practitioners, after Emergency Room evaluation or hospital stay. A doctor and a nurse performed a general clinical examination. The medical history was obtained very carefully. Blood pressure (BP) was measured every second minute with an automatic arm-cuff device, heart rhythm was monitored continuously. Active standing was performed until symptoms occurred or for at least 12 min. Carotid massage was performed in supine and erect position.
Results.– Ninety-three patients aged 65 years and older were assessed after syncope. Mean age was 81 (range 65–93) years, 62 (67%) were female. OH was the leading cause of syncope (39%).

Cardiac etiology was found in 15%, while 14% had reflex syncope. In 29% of the patients the assessment did not reveal a definite or suspected explanation for syncope. In the same period, 55 patients younger than 65 were assessed with the same protocol. In the younger patients reflex syncope was more common, while cardiac etiology was less common. We did not observe any adverse events during the assessment.
Conclusions.– The Oslo protocol is simple and safe and reveals the cause of syncope in a high proportion of patients of all age-groups, even without tilt-table testing. We believe that the diagnostic value of the protocol could be even higher with equipment for continuous beat-to-beat non-invasive BP measurement. A protocol with prolonged active standing seems to be useful in old patients. The Oslo protocol could be part of an effective and inexpensive assessment program in Syncope Management Units.

PC-298

Comprehensive geriatric assessment nonagenarian population to come to an emergency department of a university hospital

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Introduction.– In 2006 was incorporated into the Emergency Department of Hospital Arnau de Vilanova a multidisciplinary team of geriatrics to assess elderly patients attending the department using the CGA as a tool for regular work.
Objective.– To analyze the clinical profile of the nonagenarian patients who visited the Emergency Department and evaluated by an Emergency UFISS-Geriatrics.
Patients and methods.– Retrospective descriptive study of patients $\geq$ 90 years admitted to an Emergency Department in the year 2010. Protocol was used that included comprehensive geriatric assessment, comorbidity, primary diagnosis, discharge destination.
Results.– Nonagenarian patients (n = 320) representing 19.53% of all patients assessed during the study period (1638 patients). The average age 93.04 years, 57.1% female, 38.12% frail elderly. Patients had I. Barthel before admission $\leq$ 50 in 70% of cases and 10% of cases had known cognitive impairment (61.40% degenerative dementia) not being able to perform T. Pfeiffer 40% of patients due mainly to their main diagnosis (63%) and delirium (7.2%). The 73.6% lived at home, the primary caregiver were the children 35% (85% female, mean age 58 years). The most common *geriatric syndromes*: 30% loss of function, 21.56% risk of malnutrition (MNA reduced) and 17.8% mixed incontinence. A 35.93% had high risk of ulcers (IBraden) only 8.12% had ulcers on admission. In 42% of patients had disabling sensory deprivation. The *primary diagnosis* was chronic lung disease 12.8%, stroke 11%, heart failure 7% and pneumonia 6.8%. Comorbidity half 2 (I. Charlson). *The destinations on discharge* of patients in order of frequency were acute inpatient units 71.25% and home care units (PADES) 7.5%. A 2.8% of patients died in the Emergency Department. In 8.75% the patients was written in your medical history that were no candidates CPR (most common cause was the catastrophic stroke).
Conclusions.– The impact of acute illness in nonagenarian patients due to their smaller physiological reserve makes the early use of CGA in the Emergency Department to detect and prevent geriatric syndromes at an early stage. Also, the use of the CGA allows an effective treatment program and enters the right patient at the hospital level.
Analysis SPSS12

PC-299

Evaluation of the predictive significance of comprehensive geriatric assessment for discharge destination after hospitalisation in geriatric patients

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Introduction.– Comprehensive geriatric assessment (CGA) is a multidimensional diagnostic process to examine the bio-psycho-social functional status of geriatric patients.
Data of CGA are the diagnostic background of geriatric treatment aiming improvement of patients' mobility and autonomy.
In this study, we investigated the predictive significance of CGA for discharge destination after hospitalisation of geriatric patients using a large national database for medical benchmarking in units of acute geriatrics and rehabilitation. The benchmark system was developed by QiGG and the Institute of Biomedicine and Health Sciences, Joanneum Research and contains over 26,000 cases since its roll out in 2008.
Method.– In order to find the most relevant predictor variables for discharge to home, we applied a logistic regression model, which predicts the probability that a patient is discharged to home after hospitalisation (dependent variable) from the following test results at admission (full model): Barthel index, Minimal nutritional assessment, Timed get-up and go test, Tinetti test, Mini-mental state examination, Shulman test, Geriatric depression scale. To identify those assessment tests from the full model that best explain discharge to home, we used Akaike's information criterion (AIC).
Results.– By Akaike's information criterion, the full model with seven variables can be reduced to a logistic regression model with Barthel- and Tinetti-scores as explanatory variables: AIC (full model) = 2310.7 $>$ 2303.8 = AIC (reduced model).
Additionally, Barthel- and Tinetti-scores are used as explanatory variables in separate linear regressions: The data provide evidence that the probability P that a patient is discharged to home after hospitalisation increases linearly with the patient's Barthel score at admission: $P = 47.7 + 0.47^{*}$ Barthel (R2 = 0.97, $P < 0.001$). Similarly, there is a strong linear relationship between the probability P and the patient's Tinetti score at admission: $P = 59.0 + 1.21^{*}$ Tinetti (R2 = 0.91, $P < 0.001$).
Conclusions.– Results of this study show a statistically significant relationship between favourable parameters in CGA at time of admission and patients' discharge to home after hospitalisation. Baseline results of Barthel index and Tinetti test proved to be strong early predictors for the later discharge destination and should be used for multidisciplinary discharge management in geriatric patients.

PC-300

Is it necessary to lower the upper reference limit of TSH in older patients?

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Introduction.– It has been proposed to lower the current upper TSH reference limit of 4.0 to 2.5 mIU/L to exclude patients with occult

hypothyroidism. This study aims at verifying whether older patients with TSH levels > 2.5 mIU/L have symptoms and signs suggesting reduced thyroid function.
Method.– We enrol older patients admitted to a geriatric outpatient clinic, excluding those with known hypothyroidism or hyperthyroidism and those suffering from severe dementia (CDR $\geq$ 3). Every subject undergoes a standardized evaluation which includes the measurement of serum TSH and free thyroid hormones levels, body mass index, lipids, and the assessment of smoking habits, behavioural and cognitive status (Mini Mental State Examination, Clinical Dementia Rate, Neuropsychiatric Inventory, Geriatric Depression Scale). Sign and symptoms of hypothyroidism are evaluated using the Billewitz scale modified by Zulewski. A score higher than five has been associated with hypothyroidism.
Results.– One hundred and thirty-six older outpatients have been enrolled so far. The mean age is 80 $\pm$ 6.4 years, 79 are women (58.1%). Ninety-eight have cognitive impairment (72.1%) and 61.8% have depressive symptoms. Mean levels of thyroid hormones are: fT3 2.92 $\pm$ 0.4 pg/mL, fT4 0.86 $\pm$ 0.16 ng/dL, TSH 1.95 $\pm$ 1.36 mIU/L. TSH levels are higher in women compared to men (P = 0.003). Thirty-seven older patients (27.2%) have TSH values higher than 2.5 μIU/L. TSH levels are higher in women compared to men (2.1 vs. 1.6 mIU/L, P = 0.027). 8.8% of the sample has a score higher than 5 at the Zulewski scale. The most frequent sign is slow movements (50.7%), while the most common symptoms are hearing impairment (36%) and constipation (41.9%). There is no significant differences in the frequencies of any sign and symptom of hypothyroidism between older subjects with TSH levels lower or higher than 2.5 mIU/L. The prevalence of a total score higher than five is also not significantly different in the two groups (10.2% vs. 5.4%; P = 0.3).
Conclusions.– The preliminary findings of this study do not support the hypothesis that the upper reference limit of TSH should be lowered in older subjects. The high prevalence of cognitive and psychiatric comorbidity might interfere with the assessment of signs and symptoms of hypothyroidism in this population.

PC-301

Novel method for detection of blood flow in both young and older subjects at rest, as a model for identifying risk of pressure ulcers in vulnerable movement-restricted elderly subjects

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Introduction.– Pressure ulcers, painful and debilitating, are prevalent in the aging population. Pressure relief movements are used as the predominant preventive strategy. Aging processes may inhibit the efficiency and frequency of pressure relief and thus, affect restoration of adequate blood flow. This study investigates differences in pressure relief in the young and the elderly, with the aid of the "Ballistocardiogram" (BCG), a non-invasive method, which provides information on the acceleration profile of blood.
Methods.– Subjects (elderly n = 12, young = 12) were asked to lay in supine position on a Permaflex Mattress for 60 min. BCG was recorded with an Emfit Bed Sensors (L-4060SL) positioned under the mattress. Electrocardiogram (ECG) was recorded with a 3-lead PowerLab/8SP (AD Instruments). Heart beat interval (HBI) data and BCG IJ amplitude (relating to acceleration of blood during systole) were extracted using matlab. A non-parametric Mann-Whitney U test was used to compare IJ amplitude of young and old males over the 60-min period. A repeated measures mixed factorial ANOVA was used to test for significant differences in IJ amplitudes and HBI data over 30 s before and after pressure relief between old and young males.
Results.– A highly significant difference in the distribution of scores was found in IJ amplitude between young and old (Z = –46.08, $P < 0.01$), while higher in the older group. No significant difference (F = 0.824, $P > 0.05$) between IJ amplitude before and after movement, however a significant interaction between age and IJ before (F = 5.713, $P < 0.05$) and after movement (F = 4.776, $P < 0.05$) was found. A highly significant difference (F = 27.065, $P < 0.01$) between heart beat interval before and after movement and a significant interaction between age and heart beat intervals before (F = 11.937, $P < 0.01$) and after movement (F = 12.331, $P < 0.01$) was found.
Conclusions.– Adaptive changes before pressure relief were evident in both the young and older subjects, while blood flow acceleration was higher in the elderly over the whole 60 min. The BCG, providing information on blood flow acceleration non-invasively, at low cost, is not paralleled by current measurement systems. It thus might be a useful addition to current measurement regimes for the elderly.

PC-302

Prognostic value of delirium on mortality in older old patients admitted with heart failure

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Purpose.– To analyse the influence of delirium on in-hospital and one year mortality in elderly patients admitted with acute HF.
Methods.– Prospective study of 581 elderly patients admitted due to decompensated HF. Delirium was assessed with the Confusion Assessment Method (CAM). Clinical, analytical, ecocardiographic, geriatric assessment variables and quality of life was recorded.
Results.– Mean age was 85.5 $\pm$ 5.8 years, 67% were females and 10.5% nursing homes residents. Prior to admission NYHA functional class was II in 46.6%, III in 35.6% and IV in 6.8% of them. In-hospital mortality was 8.2%. During index admission, 38% of patients developed acute confusional state (delirium) and was strongly related with in-hospital mortality on a logistic regression analysis ($P < 0.001$). Characteristics related with the development of delirium were the presence of previous cognitive decline or dementia, mobility limitations, dependence on any basic activity of daily living and previous diagnosis of Parkinson disease. With 77.2 $\pm$ 51.7 weeks of mean follow-up (range 1.3–200 weeks) of 533 patients, one-year survival was 66%. In those patients who developed delirium during index admission, one-year survival was 54.3% and in those without delirium during index admission 72.7% ($P < 0.001$). Mean survival time in patients with delirium was 36.5 $\pm$ 1.5 weeks from discharge but 44.7 $\pm$ 0.7 in those without ($P < 0.001$). One year mortality from discharge was related with de development of delirium during index admission (P = 0.009) on a Cox regression model adjusted by the presence of diabetes, coronary heart disease, Charlson comorbidity index, age, treatment with ACEI or ARB, anaemia, left ventricle ejection fraction, NYHA functional class and renal function.
Conclusions.– Delirium is a frequent and very important complication during admission of elderly patients with acute HF. Delirium is associated with increased in-hospital and one-year mortality. These patients should be managed as high-risk patients and be offered special and tight multidisciplinary follow-up. Interventions to attenuate the frequency and intensity of delirium should be investigated in trials to determinate the impact on very elderly HF-admitted patients mortality and quality of life.

PC-303

Validation of the Charlson Comorbidity Index in acutely admitted elderly patients

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Objective.– The Charlson Comorbidity Index (CCI) is twenty-five years old now and has been validated in many, often clinical, populations to predict the mortality risk. Although often applied in acutely hospitalised elderly patients, in this group of patients no validation was provided. Therefore, the aim of our study was to examine whether the CCI predicts adequately both short-term and long-term mortality and also post-discharge functional decline, another for elderly patients relevant outcome.
Design.– Prospective cohort study.
Setting.– Medical department of a tertiary university teaching hospital.
Participants.– Acutely hospitalised patients aged 65 years or above.
Measurements.– In Eligible persons (n = 1313) demographic data, (Instrumental) Activities of Daily Living (Katz-(I)ADL), health related quality of life (EQ-5D), social functioning and self-perceived health was collected within 48 hours after admission. Follow-up by self-reporting questionnaires was performed at three months and one year. Functional decline was defined as a decline of at least one point on the Katz-15(I)ADL index score at twelve months compared to baseline. Mortality at three months, one year and five years were collected from the municipal database.
Results.– In total, 1313 patients were enrolled (mean age of 77.8 (SD 7.9) years and 45.8% male). Patients with a CCI of 5 or more points had higher three month – one year – and five year mortality rates compared to a CCI of 0 points (resp. Odds Ratio [OR] 3.6, 95% Confidence interval [CI] 2.1–6.4, OR 7.1 [95% CI 4.2–11.9] and OR 52.4 [95% CI 13.3–206.4]) Patients with CCI of 3 or 4 points had an increased mortality risk after one year and five years. Even a CCI of 1 or 2 points showed and increased five years mortality rate. Functional decline present at three months and one year was not associated with higher CCI scores.
Conclusion.– This study shows that an increased CCI predicts both short and long term mortality adequately but is not able to predict post-discharge functional decline in acutely admitted elderly patients.

PC-304

Identification of older persons at increased risk for functional decline in primary health care: a prospective cohort study

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Introduction.– Community-dwelling older persons at increased risk for functional decline should be identified early in order to prevent adverse health outcomes. The Identification of Seniors At Risk (ISAR) is a self-report screening instrument that identifies older persons at increased risk for functional decline visiting the Emergency Department. The ISAR has not been validated in primary health care. The objective was to study the predictive validity of the ISAR and to modify it for use in primary health care.
Method.– Persons aged 70 years and above from eight primary care centres were included and received a self-reporting questionnaire, consisting of demographic data, ISAR questions, potential predictors for functional decline, modified Katz-ADL index score, social functioning and self-perceived health. Follow-up was performed at three, six, and twelve months. Functional decline was defined as a decline of at least one point on the modified Katz-ADL index score at twelve months compared to baseline. Persons that did not respond to invitation were invited for a non-respondent analysis, consisting of a home visit by a research nurse. To improve the predictive value of the original ISAR, cox regression analyses were performed, adding new variables to the existing model.
Results.– In total, 790 persons (71%) responded and 22% experienced functional decline after one year. Non-respondent analysis demonstrated a significant difference between non-responders and included persons on level of comorbidity, ethnicity and cognitive functioning. The AUC of the original ISAR was 0.64 (95% CI 0.62–0.66). Cox-regression analyses resulted in a model with four predictors independently associated with functional decline; higher age (HR 1.05; 95%–CI 1.03–1.08), higher number of ADL disabilities (HR 1.55; 95%–CI 1.01–2.39), higher number of IADL disabilities (HR 1.93; 95%–CI 1.38–2.69) and presence of self reported memory problems (HR 1.62; 95%–CI (1.17–2.23). The AUC of this new model at a cut off of two points was 0.70 (95% CI 0.68–0.71).
Conclusions.– The model could identify community-dwelling older persons' risk of functional decline. This screening should be the first step in an efficient and effective proactive intervention to maintain physical functioning. External validation is needed to strengthen these results.

PC-305

Are elderly patients risk assessed for acute kidney injury?

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Introduction.– Acute Kidney Injury (AKI) is common in the elderly. They are at higher risk given their age-related decline in renal function, co-morbidities and polypharmacy. A new assessment tool for acute medical patients aged over sixty years has been developed in the Southern Health and Social Care Trust. This tool allows for early detection and management of AKI.
Method.– Our audit was based in Craigavon Hospital, a District General. We audited all patients discharged in April 2011 from ward 2 South Medical, an acute geriatric ward. They had a diagnosis of AKI stage 1 if their creatinine had increased by greater than 30 mmol/L or 1.5 times that of their baseline, stage 2 if 2 times their baseline and stage 3 if 3 times their baseline or a creatinine of greater than 350mmol/L. Patients' risk factors were scored including co-morbidities, abnormal baseline glomerular filtration rate, hypotension, intravenous fluids and nephrotoxic medications. The maximum score was 9. Patients with a score of greater or equal to 3 were counted as high risk.
Results.– There were a total of 59 patients. Twenty-six had AKI either on admission or during admission. Only eight patients had the assessment tool completed on admission, seven of which had AKI. We calculated risk scores for all AKI patients, the average was 4.5. Eighty-one percent of these patients would have been high risk. Nineteen percent did not have a documented diagnosis of AKI during admission and 35% had a delay in diagnosis of greater than 48 hours. These patients had AKI stage 1.
Conclusion.– Our AKI assessment tool is not being completed. A proportion of patients with AKI stage 1 have their diagnosis delayed or missed. We need to raise awareness about this assessment tool and highlight to doctors the relatively small increases in creatinine levels that are required for AKI stage 1 which most doctors assume are non-significant. We need to recognise that AKI stage 1 is not benign as two out of six AKI patients who died had AKI stage 1.

PC-306

Kidney function assessment in geriatric patients

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Introduction.– The gold standard to measure the glomerular filtration rate (GFR) of the kidneys is inulin clearance. Various methods exist for estimating kidney function, usually based on serum creatinin. The most widely used methods are the Cockroft-Gault (CG) and Modification of Diet in Renal Disease (MDRD, short and extended) equations. The objective of this study was to determine the best method to estimate GFR in geriatric patients.
Method.– From January until December 2010, a single shot inulin clearance during 8 hours was measured in 24 geriatric patients. Information about age, gender, race, height, weight, medication use, and comorbidities were collected. Serum creatinin, cystatin C, ureum and albumin values were determined just before the inulin infusion. A comparison was made between inulin clearance and the CG and MDRD equations, two cystatin C-based equations (Burkhardt and Larsson), one equation based on both creatinin and cystatin-C (Levey), and a 2-hour creatinin urine clearance. The mean differences between these methods and the inulin clearance were calculated, as well as the correlation coefficients.
Results.– Mean age of the study population was 81 years (range 71–91), 62% was female. Mean GFR measured was 44 mL/min (range 13–83). The correlations and mean differences are described in Table 1. The short version of the MDRD equation correlated best (0.34), the extended version of the MDRD and the Levey equation showed the smallest mean difference of estimated GFR compared to measured GFR. The range of mean differences varied widely in all methods.
Conclusion.– None of the studies methods estimates GFR well, however the short version of the MDRD equation shows best concordance with inulin clearance.

Table 1. Correlations and differences with inulin clearance.

	Based on serum creatinine			Based on cystatin C		Based on both	
	CG	MDRD ext	MDRD short	Burkhardt	Larsson	Levey	2-h urine clearance
Pearson Correlation	0.04	0.20	0.34	−0.12	−0.05	0.17	0.04
PC-value	0.84	0.36	0.10	0.59	0.61	0.41	0.85
Mean difference (%)	7	−2	−5	−105	−5	2	−18
Range (%)	−120 – +105	−109 – +93	−102 – +93	−364 – +43	−147 – +98	−100 – +95	−145 – +111

Geriatric care 2//*Cuidados geriátricos 2*

PC-307

Presentation of a frail elderly telemonitoring service lessons learned in the Barbarstro health care area

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Objectives.– To detect the frail elderly in the hospital and to follow them up by different professionals by means of technological innovation (Preventive Telemonitoring Service resulting from the Dreaming Project) in order to do an early diagnose, to prevent complications and control their health in their habitual environment improving the quality of life and reducing hospitalisations and out-patient visits.
Methodology.– A 4 year long prospective randomised multicentered study of case-control with patients who were readmitted to hospital during the last year. The monitoring diseases with medical and domotic sensors are: DM, ischemic heart disease, chronic heart failure, COPD and HST. The "Call Center", made up of a doctor and a nurse, manages the alarms, mobilizes resources and directs the cases to the different agents involved: Primary Care, Specialized Care, 061 and Social Services. The "Helpdesk" gives technological support and responds to first-level incidences.
Indicators.– Clinical, functional, cognitive and affective, hospitalisations, emergency visits, specialized visits, permanent moving to nursing home and technical assessment.
Results.–
– Eighty frail patients, regular visitors of the Emergency Unit, paired according to their clinical profile, age and gender during a period of 30 months.
– Forty case groups age 75.65, 37 IB greater or equal to 60, 11 Lawton less than 8, 38 Pfeiffer 0-2, HADS anxiety 8 score greater or equal to 11 and depression 5 score greater or equal to 11, admissions hospital 3, accesses emergency rooms 23, specialist consultations 90, institutionalisation 1, home visits by social operators 0.
– Eighty control groups: age 75.33. 38 IB greater or equal to 60, 14 Lawton less than 8, 40 Pfeiffer 0-2, HADS anxiety 8 score greater or equal to 11 and depression 5 score greater or equal to11, admissions hospital 3, accesses emergency rooms 23, specialist consultations 90, institutionalisation 1, home visits by social operators 0. "Contact Center" has managed 1263 alarms and "Help Desk" has responded 123 incidences until March 2011.
Conclusions.– Training, coordination and consensus between the Dreaming team, Primary Care and Social Services seem essential for selecting sensitive patients to this new service. There are fewer visits to emergency rooms and to specialists in the monitoring group. We expect to demonstrate that the new technologies improve the control of patients in their homes, avoid descompensations, admissions and permanent institutionalisations of frail elderly.

PC-308

Does a Preventive Telemonitoring Service improve the quality of life of frail elderly? Preliminary results of the European project Dreaming

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Objectives.– To detect the frail elderly in the hospital and to follow them up by different professionals by means of technological innovation (Preventive Telemonitoring Service resulting from the Dreaming Project) in order to do an early diagnose, to prevent complications and control their health in their habitual environment improving the quality of life and reducing hospitalisations and out-patient visits.
Methodology.– Randomised prospective study of cases-control in patients with hospital readmissions during the last year.
The monitoring diseases with medical and domotic sensors are: DM, ischemic heart disease, chronic heart failure, COPD and HST. The quality of life evaluation has been carried out through SF-36 and the Philadelphia scale.
Results.–
– Eighty frail patients regular visitors of the Emergency Unit paired according to their clinical profile, age and gender during a period of 30 months.

– Forty case groups: mean age 75.65, 22 men, 18 women. Philadelphia scale 19 with a high satisfaction level, 14 medium and 7 low. SF-36 initial/12 ± 2 months: physical function 55/58.1, physical health 74/73.8, pain 29/21.6, social role 50/49.1, mental health 59/59.9, emotional problems 82/89.9, vitality 55/60.5, general perception 66/60.5.
– Forty control group: mean age 75.33, 22 men, 18 women. Philadelphia scale 16 with a high satisfaction level, 19 medium and 5 low. SF-36 initial/12 ± 2 months: physical function 48/44.9, physical health 70/68.9, pain 23/39.8, social role 48/46.4, mental health 58/55, emotional problems 80/79.4, vitality 48/46.4, general perception 72/57.
Conclusions and lessons learned.– It is surprising the perception of the general health status of the selected patients, which are below de values of the Spanish population. The greatest differences comparing with the general Spanish population can be found in the evaluation of the physical pain, the social and the physical function in this order. We expect to demonstrate that the technologies improve the quality of life of the frail population.

PC-309

Which hip fracture patients are admitted to a functional rehabilitation unit? A multivariate analysis of possible predictive factors

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Objective.– To define factors associated with a higher probability of discharge to a functional rehabilitation unit (FRU) after hospitalisation for acute hip fracture compared to those who return home.
Method.– All consecutive hip fracture patients admitted to the Acute Orthogeriatric Unit of a tertiary hospital between February 2007 and April 2011 were registered in a prospective cohort study. Only patients who were discharged home and those who were transferred to a FRU were selected. Data collected included: gender, age, type of fracture, previous osteoporosis treatment, antiagregant/anticoagulant therapy, ASA score, type of anaesthesia, surgical procedure, functional and cognitive status at baseline, at admission and at discharge [(Barthel Index (BI), Escala Cruz Roja Física (CRF) and Cruz Roja Mental (CRM)], Short Portable Mental Status Questionnaire (SPMSQ) at discharge, functional decline (DBI = previous BI – BI at discharge), length of stay, days to surgery, timing of rehabilitation, days spent in rehabilitation and discharge destination. Univariate analysis and multivariate stepwise logistic regression analysis were performed. We created a predictive model to identify patients with higher probability of discharge to a FRU after acute hip fracture.
Results.– One thousand one hundred and fourteen patients were admitted: 298 (26.7%) returned home and 380 (34.1%) were transferred to a FRU. In the univariate analysis, we found significant association between discharge location and age; previous BI; CRF, CRM and SPMSQ at discharge; DBI score; previous antiagregant/anticoagulant therapy; ASA score; days to surgery and timing of rehabilitation. After multivariate analysis, the variables that remained significant were:

	OR	95% CI	Sig
Previous BI	0.966	(0.953–0.979)	0.000
CRM at discharge	0.812	(0.663–0.994)	0.044
DBI (5-point decrements)	1.333	(1.240–1.433)	0.000

The area under the ROC curve was 0.730 (95% CI: 0.687–0.773).
Conclusions.– Worse previous BI, greater functional decline during hospital stay and better cognitive status at discharge are independent predictive factors of referral to a FRU in hip fracture patients. No statistically significant association was found for the other clinical variables after multivariate analysis.

PC-310

Computerization of the nursing work station (CWS): clinical pathway for the elderly patient in an acute rehabilitation unit

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Introduction.– Elderly patients are admitted to an intensive rehabilitation program, located in a rehabilitation acute care hospital (Hospital de la Esperanza). Intensive rehabilitation program is characterized by a short duration, high intensity (at least three hours of daily therapy), intervention of a multidisciplinary expert team and availability of appropriate technology (analysis of gait and balance, interactive techniques, robotics...).
Objective.– To adapt a standarized clinical pathway to the needs and functional abilities of elderly patients in order to achieve the best possible independence.
Material and methods.– The rehabilitacion unit, has been working with computerized medical records since 7 years ago, nursing team uses the CWS, with international classification of nursing diagnoses (NANDA), NIC and NOC. Clinical pathway is composed by:
– evaluation at admission. Registration and organization of individual data, family/environment V. Henderson's model;
– standard clinical pathway adjudication. Multidisciplinary management tool based on the evidence for a group of patients with a predictable clinical course, in which different interventions (NIC) of the professionals involved in patient care, are defined as a sequenced and optimised model of care;
– individualization of the clinical pathway, according to dependence/independence level and health status is carried out according to the objectives/outcomes (NOC) to be achieved. In other words, nursing diagnoses, interrelated problems, potential complications and nursing interventions (NIC) of elderly patients are personalized;
– education/patient and family involvement in care process and in discharge planning;
– assessment and continuous monitoring of the objectives and results, in order to detect (to adjust/to adapt), those that have not been possible to achieve, and also in order to make modifications if necessary.
Conclusions.– Clinical pathway facilitates the individualization of care process for each patient, and also the continuity of care. Improve communication and coordination of the interdisciplinary team, optimising resources and minimizing errors. Allows any time to see the entire patient care process.

PC-311

Clinical profile of patients admitted to an inpatient long-term care facility

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Objectives.– To analyse the characteristics at admission and discharge of patients admitted to a long-term care facility of 43 beds, to know clinical outcome and confirm whether the classification of patients by the admission criteria agrees with its subsequent evolution.

Method.– Prospective, observational study of patients admitted to a long-term care facility in 2010.
Data collection.– Comorbidities, admission diagnoses, analytical profile, classification groups, geriatric syndromes and functional status at admission and discharge. Descriptive analysis, comparison of proportions (Chi^2) and means (*t*-Student).
Results.– $n = 195$, 53% female, age 82.41 ± 9.53 years; length of stay 48.86 ± 53.91 days. Eighty-four died less than 6 months and 99 were discharged alive. Eighty-six (44.1%) come from other unit of our hospital, 68 (34.9%) from acute care, 41 (21%) domiciliary visits.
Classification groups.– One hundred and fifty (76.9%) long-term care, 34 (17.4%) subacute, 5 (2.6%) palliative, 5 (2.6%) psychogeriatrics.
Clinical antecedents.– Hypertension 64.1%, cardiac disease 60%, cognitive impairment 59%, respiratory disease 40.5%.
Diagnosis at admission.– Respiratory disease 35.4%; cognitive impairment 22.1%; urinary infection 21%; pressure sores 19.5%; social 24.6%, dehydration 11.8%, delirium 11.8%, 7.7% palliative care.
Geriatric syndromes.– Fecal incontinence 83.1%, urinary incontinence 69.7%, constipation 60% and 75.9% greater than seven drugs.
Admission functional status.– 62.1% Barthel 0; 78.5% Barthel < 20. Stratify: 92.8% risk of falling. Braden: 58.5% high moderate risk of pressure sores. At discharge: death: 44.8%, 12% home.
Admission-discharge comparison in patients who survive ($P < 0.05$): Barthel 19.73 ± 27.33 vs 26.56 ± 29.4; Braden 15.56 ± 3.92 vs 16.55 ± 3.882; immobility 49% vs 23%; pressure sores 27% vs 16%.
Patients who die within 6 months.–
– Admission diagnosis: pressure sores 47.6%, respiratory disease 38.1%, cognitive impairment 23.8%, urinary tract infection 27.4%, dehydration 17.9%;
– Geriatric syndromes at admission: fecal incontinence 92.9%, immobility 81%, urinary incontinence 70.2%, polypharmacy 67.9%, constipation 60.7%, sensory deficit 63.1%, risk of falling 73.8%, risk of dysphagia 41.7%, urinary catheter 23.8%; 21.4% day physical restraint, sleep disorders 17.9%, tube feeding 6%.
Palliative care classification.– To admission 13.1%, to discharge 30.1%.
Conclusions.– The unit has a high mortality rate. Patients who die in the first 6 months after admission, have a high prevalence of geriatric syndromes and nursing care needs. A high proportion died without being considered palliative patients. Patients discharged alive had improvement in Barthel, Braden, pressure sores and immobility.

PC-312

Results of the SATISFIE-study: symptom assessment to improve symptom control for institutionalised elderly

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Purpose.– Symptom evaluation is important for optimal treatment of institutionalised elderly. There are almost no assessment tools for this population. This study aimed to further validate and describe the results of the SATISFIE-scale (a recently developed instrument for symptom assessment in institutionalised elderly at the end of life).
Methods.– The scale, based on a numeric VAS, includes 11 symptoms, selected by literature review and expert opinion. These symptoms were rated on day 0 and day 1 by 51 palliative (cases) and 145 non-palliative (controls) elderly. Nurses also completed the instrument at day 0.
Results.– ''Fatigue'' and ''lack of meaning in life'' are symptoms with the highest burden (mean score of 4 or higher). The mean scores were significantly different in cases and controls for ''breathlessness'', ''respiratory secretions'', ''lack of appetite'', ''fatigue'' and ''lack of energy''. The *test-retest-validity* was good (Pearson correlation coefficients between 0.627 and 0.891). The correlations between patients' and nurses' scores were much lower, especially in the control group (ranging from 0.159–0.606 for controls versus 0.202–0.784 for cases). In particular, nurses underestimated ''feeling nervous'' (1.7 versus 2.7), ''pain'' (1.2 versus 2.5) and ''respiratory secretions'' (0.7 versus 1.7) in the control group, and overestimated ''depressed feeling'' (4.5 versus 3.3) in the cases.
Conclusions.– Symptomatology increases near the end of life. However, symptom burden is high in both palliative and non-palliative elderly. More attention should be paid to spiritual symptoms and lack of energy in institutionalised elderly. Nurses underestimate pain and feelings of nervousness in non-palliative patients and overestimate feelings of depression in palliative elderly, showing the importance of self-assessment.

PC-313

Present and future of geriatric medicine hospital, is it the same? Is it like?

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Objective.– Analyse purpose of care and indicators of activity levels of care of a geriatric service.
Method.– A retrospective descriptive study Scope: Hospital (Acute, ortogeriatric, Convalescence with and without RHB, palliative), External consultation and geriatric day hospital.
Subjects.– Patients treated in year 2010.
Measurements.– Income, length of hospital stay (EMG), occupancy rate (IO), mortality, dependency on income Barthel Index (IBI), comorbidity main Diagnosis Related Groups (DRGs) most frequently, number of visits and hospital patients day. In hospital, aged 90 years, if they live alone, in residence, palliative tributaries, use of warfarin, opiates and drugs at discharge. Descriptive statistical treatment.
Results.– Hospitalisation: 1210 income 32% men and 68% female. Age 85, EMG: 17 days. Occupancy rate: 86%, 18% mortality. 13% stay over 30 days. No patient over 90 days, 58% severe or total dependency on admission. DRG's more frequent, 541 (respiratory), 462 (Rehabilitation), 101 (Other respiratory system diagnoses), 14 (specific cerebrovascular disorders), 533 (other disorders of the CNS), 127 (heart failure). Comorbidity dementia 36%, diabetes 26%. Over 90 years, 21%, centenarian 6, 6% live alone, in residence 31%, palliative 5%, 9% use of opiates, 18% antipsychotics, 8% acenocoumarol discharge more than 7 drugs 37%, less than three drugs at discharge home 17%. Acute Unit: 967 with 13-day stay. Convalescence Unit: 137 patients with 25-day stay Ortogeriatric: 106 patients, 17-day stay Day Hospital: 181 new patients, 30 sessions per patient. External consultation: 4314 (1333 first consultations).
Conclusions.– Increased attention and convalescence ortogeriatric with and without rehabilitation. Very old elderly, polypharmacy in need of improvement in the transition to home or residence Interclinical strong demand from Primary Care.

PC-314

Geriatric care in an emergency department of a university hospital for geriatric patients in non-cancer palliative end of life situation

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Introduction.– The Palliative Care should be extended to patients with advanced chronic non-malignant knowing prognosis, functional disability and severity.
Objective.– To describe the profile and multidisciplinary care that geriatric patients received in palliative non-cancer end of life in an Emergency Department by a Geriatric Team (Specialist medical in Geriatrics, nurse and social worker).
Methods.– A retrospective and descriptive study of non-cancer palliative patients served by the UFISS-GER in 2010. Were analysed demographics, functional assessment/cognitive, ulcer- risks, comorbidity, social assessment, geriatric syndromes, primary diagnosis, for discharge, Treatment administration method iv/sc.
Results.– $n = 79$, mean age 86.7 (DE 2.61), 45 (57%) women.
Functional assessment/cognitive: Barthel (< 20) 86%/Pfeiffer (NV) 83%.
R. Ulcers: IBraden (high) 88%.
Comorbidity average.– (I. Charlson) 4.12 (DE 2.6).
Social rating.– Thirty-five percent live with their children, 85% main caregiver is female, 43% greater burden of the caregiver (Zarit E.), 59% good economic situation (E. Gijon).
S. Geriatric ($>$ fr).– Seventy-five percent dementia (61% degenerative), 58.22% polypharmacy, 40.5% mixed incontinence, 38% loss of function.
Grouped diagnoses ($>$ fr).– Pneumological (19%), neurological (17%), infections (14%).
Discharge destination.– Home care (40.5%), acute hospital/hospice unit (25.31%/16.50%), died in the Emergency Department (13.9%). Treatment administration method iv/sc (38%/50%).
Conclusion.– The Comprehensive Geriatric Assessment (CGA) allows for the needs of non-cancer palliative patients in the ER and establish therapeutic approach and appropriate level of care. The difficulties in making decisions are determined by the impact on the family and contact of the medical team and the family for a short space of time, being decisive input family-team.

PC-315

Profile and evolution of patients taken up at nursing home in the last year

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Objectives.– To determine the characteristics of patients taken up at the Centro Gerontólogico Ablaña, the therapeutic resources used and their evolution over time.
Methods.– In-depth clinical assessment of all patients taken up during 2010, including demographic, medical and timely variables.
Results.– Ninety-two patients were hospitalised (65.2% were female, the average age was 83.49 ± 6.35), with a moderate dependence (Barthel index: 52.91 ± 33.8). At the time of hospitalisation, the MEC was 15.01 ± 11.61. With regards to diseases, 60% were hypertensive, 29.3% were diabetic, 21.7% had dyslipidemia, 48.9% were diagnosed with some type of dementia, 20.7% had suffered from a brain stroke, 25% had ischemic heart disease and 20.7% suffered of atrial fibrillation and heart failure. 14.1% were EPOC, 14% suffered from thyroid disease, 8.7% had Parkinsońs disease, 20.7% had some type of anaemia and 20.7% had some type of cancer. They also had abnormal perception of the senses so that 44.6% had abnormal visual alterations and 27.2% had hearing impairment. After an initial assessment by the interdisciplinary team they developed an individual care plan which was included in various therapeutic programs of the centre so that the 70.6% went to a physiotherapist, 59.8% went to different groups of cognitive therapy, and 27.2% is included in different occupational therapy programs. 41.3% went to two of these therapies and 16.3 went to three treatment programs. During their stay, 22.8% were discharged, 27.2% died and 50% remained hospitalises after a year.
Conclusions.– Residents of our study is characterized by several pathologies, moderately dependent, attending one or more therapeutic programs and a year remaining in the centre.

PC-316

Characteristics of new patients referred for geriatric consultation in a tertiary hospital

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Objective.– To describe the characteristics of new patients evaluated in the outpatient geriatric department in a Tertiary Hospital.
Materials and methods.– A descriptive study included all new patients evaluated in the outpatient geriatric department at the Hospital Clínico San Carlos from November 2010 to February 2011. We included clinical, functional, mental, social and assistance. Statistical analysis was performed with SPSS 15.0.
Results.– The sample included 126 patients with mean age of 81.98 years (SD 6.28), of which 80 (63.5%) were women. The most frequent reasons for consultation were: cognitive impairment 64 (52%), abnormal gait/falls 19 (15.4%), pluripathologies 14 (11.4%). 68.6% were referred by primary care physician. Mean number of common drugs was 5.53 (DE 2.83) and average as comorbidity Charlson index was 2.35. Functional status according to Katz index: A – B 67 (59.8%) and F – G 17 (15%). The social assessment documented that 21 (17.2%) live alone, 24 (19.7%) live alone with social support, 52 (42.6%) live at home with family/caregiver, 21 (17.2%) live at home with family/carer and social support, and 4 (3.3%) were institutionalised. Patients were followed up by: neurology 37 (29.4%), cardiology 25 (19.8%), rheumatology 16 (12.7%), more than one specialty 5 (3.9%) and any specialty 27 (21.4%). 25.6% were previously assessed by other specialists for the same medical consultation. The diagnoses were: mild cognitive impairment to study 40 (32%), severe cognitive impairment 26 (20.8%), very severe cognitive impairment 7 (5.6%), abnormal gait (functional impairment and falls) 18 (14.4%), pluripathology control 10 (8%), osteoarticular pathology 7 (5.6%), depressive anxiety syndrome 7 (5.6%) and miscellaneous (9.6%).
Conclusions.– The most frequent medical consultation was cognitive impairment study, found only half of them in mild stage. A quarter of the sample was previously assessed by other specialists for the same medical consultation.

PC-317

Ostheoporotic risk factors in an elderly population admitted in an orthogeriatric unit

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Objective.– Identify the presence and management of osteoporosis risk factors in patients admitted with proximal femoral fracture.

Patients and methods.– Longitudinal descriptive study of patients hospitalised with hip fracture in 2010. Clinical variables: comorbidity, functional status, risk factors for osteoporosis, densitometric previous studies, complications of osteoporosis and prescribed treatments for osteoporosis.
Results.– One hundred and nineteen patients were included. Media age: 85.6 years (Standard deviation: 6.3 years). History of cognitive impairment: 25.2%. Comorbidity defined by Charlson index was lower in 38.7% and higher in 27.7% of patients. Among the patients, 74.8% had mild functional dependence or independence, according to Barthel Index. The history of previous falls in the last year was found in 44.1% (> 3 Falls: 22.8%). History of previous osteoporotic fractures in 47.8% (9.2% multiple). The prevalence of osteoporosis risk factors was: female sex: 85.7%, sedentary lifestyle: 31.1%, low calcium intake: 26, 1%, family history of fracture: 14.8%, later menarche: 13.4%, earlier menopause (< 45 years): 11.8%, high-risk medication for osteoporosis (Levothyroxine 56.1% and corticosteroids 46.1%): 10.9%, smoking: 9.2%, excessive caffeine intake: 3.4% and history of previous fracture before the age of 45 years: 1%. The most common previous fractures were: distal radius (10.9%), proximal humerus (10.9%) and proximal femur (10.1%). Vertebral Fracture: (4.2%). About 80% of patients with previous vertebral fracture had taken drug treatment for osteoporosis and in non-vertebral fractures 27%. Of these, only 16.7% had previous hip fractures. Unknown symptomatic and asymptomatic vertebral fractures were diagnosed in 25.1% of the patients.
Conclusions.–
– The sedentary lifestyle is the more prevalent modifiable risk factor in elderly patients with osteoporosis.
– Nearly half of hospitalised elderly patients with hip fracture have had a previous symptomatic osteoporotic fracture.
– There is a pharmacological undertreatment of osteoporosis in elderly patients with functionally independent or mildly dependent, low comorbidity and normal cognitive status.

PC-318
Clinical and functional characteristics of elderly patients admitted to an ICU

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Objective.– Evaluation and monitoring of patients over 75 years admitted to intensive care unit. Their medical and functional characteristics and clinical course were analysed three months after admission.
Methods.– Prospective descriptive analysis of 75 patients over 75 admitted to an ICU between September 2010 and January 2011. Data were collected from medical history and telephone follow-up after three months of admission. Functional status was assessed, pathology leading the admission to the ICU and hospital, comorbidity, procedures and techniques used, days of stay in ICU and hospital, service of discharge, presence of geriatric syndromes and physical situation at discharge. Statistical analysis using SPSS 15.
Results.– Seventy-five patients, 58.7% female, mean age 80. Most admitted from emergency department (63.7%). Functional status before admission: mean Barthel index 92; Lawton average index 5.25. Most had no cognitive impairment (GDS 1: 85%). Lived at home 92%. High comorbidity: average Charlson index 2.53. Among the patients, 39.2% were admitted with ischemic heart disease, heart arrhythmias, 21.6%, and post- surgical procedure 21.6%. Geriatric syndromes frequently detected: delirium (24.6%), urinary incontinence (18.5%) pressure sores (15.4%). Also emphasized high prevalence of depressive syndrome (27.7%). Services that most patients admitted after discharge from ICU: Cardiology (42%), Surgery (20%) and Geriatrics (15.6%). Functional impairment was significant with an average Barthel index 79 (> 90 in 60%) and 4.25 Lawton index medium. Preserved their cognitive status (GDS 1–2, 74%) 10.7%. Average stay in ICU was 5.43 days and 14.12 medium hospital stay. 41.2% underwent catheterisation and required mechanical ventilation 30.4%. In ICU died 14%. At discharge new institutionalisation was necessary in 6.4% that held three months after discharge. Hospital readmission was required in 11.5%.
Conclusion.– Patients over 75 admitted to an ICU in Guadalajara hospital are mainly women with cardiac problems, mainly ischemic heart disease that require catheterisation. They have a good baseline status and few characteristics of geriatric patients, with frequent complications of geriatric patients, although only a small percentage discharged to the geriatric facility.

PC-319
Transitions of patient care in the nursing home: "Patient Snapshot"

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Background.– Patient care transitions have been shown to be vulnerable to care continuity disruption, medical errors, testing redundancy, and, in some instances, patient harm. The practice in the nursing homes (ECFs) where we attend patients is to start an entirely new medical record when the patient is re-admitted after hospitalisation. Care continuity and ability to capture all old relevant information is dependant on the attending physician's memory.
Methods.– McLaren Internal Medicine residents are assigned to longitudinal ECF experiences where they manage a panel of patients. Our quality improvement (QI) workshop brainstorming needs assessment suggested the need of a master problem list for our ECF patients' medical records. We searched the literature for ECF use of master problem lists. We sought the ECF administrators' endorsement of this QI initiative. We designed a pre- and post-implementation survey of second and third year residents to determine if they believed that our intervention improved care.
Results.– Our literature search failed to identify articles describing ECF master problem list use. We designed our own list called the "Patient Snapshot" that includes a patient health record summary: patient's baseline cognitive and functional condition, chronic problem list, information about response and side effects of treatment and recent hospitalisations. We obtained ECF approval to place the sheet in the front of our ECF patients' charts. Our goal is that within three months of implementation, 100% of our ECF patients will have a completed "Patient Snapshot."
Conclusion.– The introduction of the patient health record summary is really a variation on standard of care which might improve continuity of care and prevent loss of important information. As the nursing home patients are an extremely vulnerable population, every effort to improve the quality of transitional care may be worthy.

PC-320
Clinical features in the elderly patients admitted for hip fracture: benefits of geriatric intervention

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Background.– Assessment of clinical and functional characteristics of elderly patients with hip fracture evaluated by the geriatrician team at hospital admission for surgery. Analysis of physical and

cognitive status before and after the fracture, comorbidities, geriatric syndromes and perioperative complications. Assessment of the effect of geriatric evaluation in terms of hospital stay, preoperative waiting and mortality, compared with data recorded between 2002 to 2005.
Methods.– A retrospective study of 344 elderly patients hospitalised for hip fracture in Guadalajara University Hospital between January 2007 and December 2009 by reviewing medical records. Data analysis using SPSS 15.0 program.
Results.– The patients mean age was 86.2 years, 75% female. Prior to fracture, 80% of the sample walked independently or with the help of a cane or a walker. Forty-two percent had no cognitive impairment and 30% had moderate or severe dementia. Among the patients, 59.1% came from home. The average hospital stay was 13 days, 4 days shorter than that recorded before the geriatric intervention. The sample shows high comorbidity, being cardiopulmonary disease the most important complication. 40% of the sample was treated with antiplatelet or anticoagulant agents. Geriatric intervention did not modify the expected presurgical holding, established at 2.2 days. On admission, 70% of patients presented at least a geriatric syndrome. Acute delirium in the 40%. During presurgical phase 5.23% died, 5.27% less than in previous years prior to the geriatric intervention. At hospital discharge, 48% needed help to walk and 18.3% required nursing home admission.
Conclusions.– This is an advanced mean age and high comorbidity sample, in which the presence of medical complications on surgical admission are common. These patients have many geriatric syndromes and a high percent of them require to be placed in a nursing home at hospital discharge. Protocoled intervention of geriatricians in the preoperative phase has decreased mortality and average hospital stay without affecting the waiting before surgery.

PC-321

Occupational therapy demonstrates to improve independence in the elderly admitted to a geriatric subacute care unit

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Introduction.– Gait is one of basic activities of daily living that gets impaired in elderly inpatients. Maintaining their independence must be considered one of the key objectives in geriatric units.
Objective.– To evaluate the effectiveness of an intervention with an occupational therapist in maintaining an independent ambulation at discharge in a subacute care ward.
Methodology.– A retrospective cohort observational study with patients who were admitted to a geriatric subacute unit for 10 months and randomly distributed in two floors, one of which was attached by an occupational therapist. We excluded patients with very impaired baseline functional status (Barthel < 20, FAC 0) or who needed specific physiotherapy. We described demographic variables (gender, age), clinical (reason for admission, CIRS, dementia), mean hospital stay (acute and subacute) and functional status (Barthel Index, FAC) of both groups. We compared specifically the independence in ambulation with FAC scale, categorized into two groups according to assistance needs (FAC = 0, 1, 2 and 3) or independence in walking (FAC 4.5).
Results.– We included 183 patients, 65% women with 84.4 ± 6.6 years average age, 79.67 ± 22.8 points mean baseline Barthel, CIRS of 11.78 ± 5.9 and 39.3% dementia. They had an average acute hospital stay of 9.07 ± 10.9 days and 13 ± 9 days in the subacute ward. Seventy-two patients (39.34%) received occupational therapy (OT). No significant differences were found between patients (demographic variables, clinical, cognitive or mean hospital stays). However, the occupational therapy group had a higher proportion of independent walking patients at discharge with statistically significant difference (72% vs 52%, $P = 0.007$).
Conclusions.– An Occupational Therapist working with elderly inpatients in a geriatric subacute unit enhances independence in ambulation at discharge without increasing the mean hospital stay.

PC-322

Characteristics and trajectories of patients admitted to an acute geriatric unit and the development of care pathways

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Background.– Older medical patients are known to have complex health and functional problems, and to develop effective care pathways to ensure quality of care and prevent further functional decline is an important objective.
Objective.– To describe patients admitted to an acute geriatric unit and their trajectories in the aim to develop effective care pathways.
Methods.– An observational study based on data from a quality database of all patients 65+ years and admitted to an acute geriatric unit integrated in a medical department in a general hospital. Data was collected during routine work. The database contains data from 159 consecutive patients admitted from October 2010 to April 2011.
Results.– Mean age was 85.8 years (range 65–103) and 59.7% were women. Ninety-six (60.4%) had experienced decline in ADL function during the last two weeks prior to admission. Mean Barthels index score was 12.7/20 at admission and 14.5/20 at discharge. Mean length of stay was 9.8 days ($\pm$7, 1–38). The most common principal diagnoses were pneumonia (17, 10.7%), UTI (15, 9.4%) and delirium (9, 5.7%). Sixty (37.7%) had more than two comorbid diseases (Charlsons index). Eighty-seven (54.7%) had a fall before admission, of those 79 (90.8%) had fallen indoors. Ninety-four (59.1%) used more than five drugs on admission and 31 (19.5%) had BMI less than 20.
Conclusion.– The patients admitted to our unit have complex problems and are vulnerable for further decline in health and function. They are in the need of well-described care pathways. Decline in function (ADL) immediately prior to admission was very common and a majority had experienced falls. Many were underweigthed and polyfarmasi was frequent. Comprehensive geriatric assessment that includes a wide medical diagnostic approach, as well as functional and nutritional is appropriate for patients in this unit. Care pathways must include fall assessment, a medication check up, as well as routines for mobilisation and prevention of adverse events such as falls, delirium and further functional decline.

PC-323

Patients admitted into a long term care (LTC) unit linked to a third level hospital: characteristics and evolution

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Objective.– To describe the characteristics of patients admitted in a LTC and assess trends in the unit.
Methods.– Retrospective longitudinal study including admissions made in a LTC between September 2009 and August 2010. Clinical status was assessed at admission and main diagnosis, Barthel, Norton, Charlson, complications, transfer, discharge destination

and evolution of geriatric syndromes and medical techniques (urinary devices, tube feeding-nasogastric and gastrostomy) were collected.

Results.– Ninety-eight patients were admitted, mean age 77.5 ± 10.7 years (52% male) The main diagnoses were: stroke (21.4%) and dementia (20.4%). Seventy-three (74.4%) were clinically stable at income. Seventy-five percent patients had less than 39 Barthel points at admission. Charlson and Norton at admission were 12.0 ± 3.7 and 3.5 ± 2.1 respectively. During the evolution, 67 patients (68.3%) had an infection and 22 (22.4%) fell, one had a hip fracture. Nine (9.1%) had neurological complications, 41 (41.8%) descompensation of chronical diseases and 19 (19.3%) neuro-psyquiatric disorders. From the 61 patients who were malnourished on admission, eight (13.1%) were not when released, and only two new patients (5.4%) from the 37 were malnourished ($P < 0.05$). Similarly, from 66 patients with constipation on admission, 14 (21.2%) did not had when released and from the 32 patients who initially did not, 5 (15.6%) had on discharge ($P < 0.05$). There were no statistically significant differences in other geriatric syndromes. Six of the 20 urinary devices (30.0%) and five of 13 tube feeding (38.5%) were removed ($P < 0.05$ for both). Thirty patients (30.6%) were transferred to an acute hospital. Forty patients (40.8%) died, 36 (36.7%) were discharged and 22 (22.4%) remained in the unit (17 maintained the admission criteria).

Conclusions.– The patient admitted to the LTC was characterized by high functional dependency secondary to neurological disease and presenting high morbidity and mortality. The most common complications were infection and descompensation of chronical diseases. The interdisciplinary team intervention led to improve geriatric syndromes (malnutrition, constipation) and remove devices such as urinary catheters and tube feeding.

PC-324

Medical complications in patients discharged from a long term care facility

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Objective.– To determine clinical and functional differences between two subgroups of patients discharged from a long term care facility (LTCF): those with medical complications and/or who die compared with those who don't.

Methods.– Retrospective study. Review of medical records of patients discharged from LTCF during 2009 and 2010, collecting demographic, clinical and functional data. Telephone follow-up monitoring mortality and medical complications at 3rd and 6th months after discharge. Statistical analysis with SPSS v15 program.

Results.– ($n = 171$) Mean age 82.2 years, 57.1% women. Admission for respite care 28.6% and for medical problem 71.4%. Mean Barthel index at admission: 39.1. Comorbidity: hypertension 62%, DM 34%, heart disease 38%, COPD 27%. Geriatric syndromes: dementia 49%, behaviour disorder 16%, sensory deprivation 29%, urinary incontinence 58%, and faecal 36%, polypharmacy 45%, affective disorder 48%, delirium 20%. Mean Length of stay: 271 days. Mean Barthel index at discharge 43.92. Discharge at home 55%, nursing homes 45%. Incidence of medical complications and/or death within 6 months after discharge was 35%. Comparing subgroups (medical complications and/or death vs not complicated): we found significant differences in Barthel index at admission (39.17 ± 25.58 vs 41.77 ± 31.68, $P = 0.036$) and Barthel index at discharge (43.33 ± 18.62 vs 47.05 ± 33.96, $P = 0.002$). We also found differences in sex (44.6% complications in men vs 32.3% in women) but were not statistically significant ($P = 0.09$). There were no differences found in other medical conditions and geriatric syndromes' variables analysed.

Conclusions.– Patients with worse functional status at admission and discharge from a long term care facility are more likely to have medical complications or death in the next 6 months after discharge.

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PAP score estimation in our palliative care unit

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Objectives.– To estimate vital prognosis and to assess the reproducibility of PAP score in patients treated by our consultant team, and its application to non cancer patients at the end of life.

Method.– Longitudinal, prospective study of patients seen by the palliative care consultant team in our hospital, setting the PAP score in the first intervention and following up on them until the time of death or the end of the study (Between January 2010–January 2011). The study was performed through the Kaplan – Meier survival curves, stratifying the results between oncology and non-oncology patients.

Results.– We show life expectancy according to the PAP Score for the total population and stratified by cancer and non cancer patients.

Median survival time.

PAP SCORE	Number of cases	Median			
		Estimate	Standard error	Confidence interval 95%	
				Lower limit	Upper limit
Global					
A	97	98.00	29.71	39.76	156.24
B	71	34.00	6.97	20.33	47.67
C	63	7.00	1.53	4.01	9.99
	Log Rank	180.20	df2	0.0000	
Oncology					
A	84.00	92.00	21.50	49.87	134.13
B	51.00	34.00	7.39	19.52	48.48
C	41.00	10.00	2.74	4.62	15.38
	Log Rank	137.94	df2	0.0000	
Non-oncology					
A	13.00	254.00	44.93	166.81	342.92
B	10.00	34.00	26.35	0.00	85.64
C	32.00	5	1.88	1.31	8.69
	Log Rank	34.75	2	0.0000	

The estimate is limited to the largest survival time if it is censored. For comparison of groups, testing equality of survival distributions for different levels of PaP score shows significance < 0.0000.

Conclusions.– In the population of study, the prognostic classification shows a similar approach to that described in the literature for cancer patients. Non-cancer patients show a similar behaviour to cancer patients. PaP Score is useful in oncology and non-oncology patients.

PC-326

Differential characteristics and prognosis of elderly patients hospitalised with acute venous thromboembolism depending on hospital care: Acute geriatric unit vs other medical wards

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Introduction.– Although hospitalisations for venous thromboembolism (VTE) occur predominantly in the elderly, at present there is insufficient data to support management of such patients in acute geriatric units (AGU).
Methods.– Registry of all patients over the age of 75 discharged from a tertiary hospital following an episode of VTE between January 1st 2006 and January 1st 2009.
Results.– We included 289 patients, 142 managed by our geriatric team (GER) and 147 by other medical specialists (No-GER). Mean age was 85.6 GER and 82.1 Non-GER ($P < 0.159$) with a higher proportion of patients above 85 years of age in the AGU compared to Non-GER: 53.8% vs 26.2% ($P < 0.001$). GER individuals suffered more impairment of function (49.6% vs 20.7%, $P < 0.001$) and cognition (29.6% vs 14.9%, P 0.007); more females (73.5% vs 65.3%; $P = 0.69$) and institutionalised (13.4% vs 11.4%; $P = 0.64$). VTE was the reason for admission in 83.5% of cases and diagnosed as a complication during hospitalisation in 1.5%. Length of stay was 10.3 and 23.2 days ($P = 0.074$). Charlson comorbidity scores above 2 were more frequent in GER (25.6% vs 20.6%; $P = 0.021$); and also was dementia (20.5 vs 5.6%; $P < 0.001$), diabetes (24.8 vs 14.3%; $P = 0.04$), heart failure (15.4 vs 7.1%; $P = 0.04$), stroke (24.8% vs 12.7%; $P = 0.015$) and depression (15.4 vs 9.5%; $P = 0.17$). Malignancy was more common in Non-GER (26.2 vs 15.4%; $P = 0.04$). The main presenting complaints GER vs Non-GER included dyspnoea (67 vs 56%; $P = 0.08$), chest pain (37.4 vs 37.6%), cough (8.7 vs 20%; $P = 0.01$), haemoptysis (0.9 vs 4%; $P = 0.12$) and syncope (18.3 vs 11.4%; $P = 0.13$). Diagnosis was established by pulmonary CT angiography ($P = 0.81$), ventilation-perfusion scan ($P = 0.49$) and/or Doppler ultrasound ($P = 0.721$). In total 97.6% of Non-GER and 94.1% of GER patients commenced anticoagulant therapy ($P = 0.333$). In hospital, mortality was 15.9% and survival rates at 6, 24 and 30 months were 7.6%, 64.9% and 45.2% respectively.
Conclusions.– Other specialists managed younger and more independent individuals than geriatricians, with lesser cognitive impairment and comorbidity. Our study found no statistically significant differences in length of stay or mortality supporting the management of very elderly patients with VTE in AGU.

PC-327

Predictive indicators of mortality after hospital discharge following venous thromboembolism: acute geriatric unit vs. other medical wards

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Introduction.– Venous thromboembolic disease (VTE) is the third most common acute cardiovascular disorder, only second to cardiac ischemic syndromes and stroke and, although it occurs predominantly in the elderly, the predictive factors and high mortality following VTE hospitalisation in very elderly patients are poorly defined.
Methods.– We evaluated 243 subjects with a mean age of 83.8 years discharged from hospital between January 1st 2006 and January 1st 2009 following an episode of VTE. Individuals were followed up for a mean 126 weeks and we determined baseline factors that predicted total mortality depending on hospital care in an acute geriatric unit (AGU; $n = 126$) or other medical wards (Non-GER; $n = 117$).
Results.– Six, twenty four and thirty month survival rates were 79.6%, 64.9% and 4.2% respectively with higher mortality recorded in the GER group ($P = 0.004$) only statistically significant after 52 weeks of follow up. Indicators predictive of mortality in univariate analysis included functional or cognitive impairment, number of comorbid conditions, Charlson comorbidity index, elevated serum red cell distribution width, documented dementia and age ($P < 0.001$). After adjustment for other risk factors the following predicted a greater risk of subsequent total mortality: Charlson comorbidity index (Wald 24.16, OR 1.34, $P < 0.001$), age (Wald 4.85, OR 1.04, $P < 0.028$) and functional impairment (Wald 4.56, OR 1.58, $P = 0.033$).
Conclusions.– In our cohort of very elderly VTE patients discharged from hospital, management in an AGU compared to other hospital medical units conferred increased probability of death two years after hospitalisation but such risk was no longer significant after adjusting by age, functional impairment and comorbidity. The intrinsic characteristics of a geriatric patient such as older age, comorbidity, functional and cognitive impairment constitute major prognostic factors and consequently we advocate routine use of appropriate diagnostic tools and targeted interventions within a multidisciplinary geriatric team.

PC-328

Influence of comorbidity, function and cognitive impairment on long-term survival of very elderly patients following hospital discharge

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Introduction.– Comorbidities are frequent in elderly patients and strongly associated with adverse clinical outcomes at the time of hospital discharge. The influence on long-term prognosis is less clearly established.
Methods.– Prospective registry of all individuals over the age of 75 admitted to a tertiary hospital with a diagnosis of heart failure either to an Acute Geriatric Unit (HF-AGU) or cardiology ward (HF-CAR), retrospective case note review of all those with a diagnosis of venous thromboembolic disease (VTE) and a random sample of patients with other diagnosis (Non HF-VTE = pneumonia, anaemia, infections) admitted to the AGU between January 1st 2006 and January 1st 2009. All patients underwent comprehensive geriatric assessment and targeted intervention including care in accordance with contemporary published clinical guidance on specific disease processes.
Results.– We followed up 1100 patients (348 HF-AGU, 141 HF-CAR, 254 VTE and 357 Non HF-VTE) for a mean 126 weeks. Mean age was 84.9 years and 62% females. Moderate to severe functional or cognitive impairment was recorded in 34.4% (37.2%, 16.5%, 34.4%, 49.6%) and 20.5% (15.9%, 4.7%, 22.3%, 39.2%). Mean Charlson comorbidity index was 2.86 (4.14, 3.21, 1.66 and 2.44) and individuals endured on average 3.6 comorbidities (4.43, 4.5, 3, 2.7) particularly hypertension (69.1%), diabetes (29.9%), atrial fibrillation (27.5%), renal impairment (27.8%), dyslipidaemia (26.4%), COPD (23.4%), anaemia (23%), stroke (21.1%), dementia (18.9%), malignancy (15%), and depression (14%). After adjustment for other risk factors on multivariate analysis only the following predicted a greater risk of subsequent total mortality: Charlson index (Wald 52.2, OR 1.12, $P < 0.001$), age (Wald 42.1, OR 1.06, $P < 0.001$), cognitive impairment (Wald

12.3, OR 1.51, $P < 0.001$) and functional decline (Wald 10.5, OR 1.44, $P = 0.001$).
Conclusions.– The presence of comorbidity, cognitive or functional impairment and increasing age, irrespective of underlying diagnosis, appear highly prevalent and confer increased risk of death in very elderly patients following hospital discharge. We advocate routine use of comprehensive assessment and targeted interventions within multidisciplinary geriatric teams.

PC-329

Factors related to functional improvement in a intermediate care unit

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Methods.– Retrospective study of all patient hospitalised between 1st January 2010 to 1 January 2011 at the convalescence intermediate care unit of Parc de Salut Mar, Barcelona, $n = 405$. Four hundred and five patients were analysed, 247 (60.99%) were female, mean age was78.12 ± 11.6 years. Clinical (Charlson comorbidity Index), functional (Barthel index (BI) at admission (BA) and at discharge (BD), cognitive (MMSE Folstein), mean length of hospital stay (days), diagnostic group, nutricional (albumin, total protein, American Institut of Nutrition Level), mean number of geriatric syndromes and mean number of medication were obtained. The efficacy of the rehabilitation unit was evaluated by mean functional improvement (FI) (BD-BA); according by some authors FI > 20 points has been considerated an adequate outcome of the rehabilitation process. Also, an efficiency index (EI) > 0.5, that analyses the relationship between FI and the length of stay, was considered an adequate result. We analysed all the clinical and demographic variables depending on whether the efficiency and efficacy of rehabilitation unit were adequate or not. Statistical analysis was performed with Chi^2 and *t* student.
Results.– There were significance correlation between adequate efficiency and efficacy with a better average score of MMSE (22.14 ± 7.61 vs 18.32 ± 10.38, $P < 0.0001$), lower mean length of hospital stay (40.45 ± 25.21 vs 60.30 ± 36.7, $P < 0.0001$), fewer number of geriatric syndromes (4.2 ± 1.8 vs 3.3 ± 1.8 $P < 0.0001$), less presence of delirium (17.4% vs 82.6%, $P = 0.002$) and presence of urinary incontinence at admission (35.9% vs 64.1%, $P < 0.0001$). There was no difference between the two groups when age, sex, Charlson index, nutritional status (albumin, total protein) or mean number of medication at discharge, among others, were analysed.
Conclusions.– In our intermediate care unit, functional improvement as measured by adequate efficiency and efficacy of the rehabilitation process correlates with the number and presence of certain geriatric syndromes (urinary incontinence, delirium) and not age, comorbidity or nutritional status.

PC-330

Differential characteristics and prognosis of patients admitted to an acute geriatric unit depending on the reason for admission

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Introduction.– At present, there is insufficient data to determine whether the high mortality recorded following heart failure (HF) hospitalisation is a result of the intrinsic characteristics of the geriatric patient or a consequence of cardiac failure.
Methods.– We compared baseline characteristics and prognosis of individuals over the age of 75 discharged from an acute geriatric unit (AGU) between January 1st 2007 and January 1st 2009 with a diagnosis of cardiac failure (HF group), venous thromboembolic disease (Group VTE) or other diagnosis (Non HF-VTE = pneumonia, anaemia, infections). All patients underwent comprehensive geriatric assessment and targeted intervention including care in accordance with contemporary published clinical guidance on specific disease processes.
Results.– A total of 959 patients were included: 348 HF, 254 VTE and 357 Non HF-VTE. Mean age was 85.5 (HF), 83.8 (VTE) and 85.4 Non HF-VTE), 67.7% were females. Length of stay was 10.3, 16.2 and 11.7 days; 24-month mortality was 49.1%, 35.1% and 50.8% respectively. Moderate to severe functional or cognitive impairment was recorded in 40.4% (37.2%, 34.4%, 49.6%) and 25.8% (15.9%, 22.3%, 39.2%). Mean Charlson comorbidity index was 2.74 (4.14, 1.66 and 2.44) and individuals endured on average 3.4 comorbidities (4.43, 3, 2.7) particularly hypertension (74.4%, 85.1%, 60.2%), diabetes (34.5%, 38.3, 19.7%), atrial fibrillation (19.3%, 50%, 21%), renal impairment (35%, 49.3%, 10.6%), COPD (35.9%, 22.7%, 13.4%), anaemia (35.1%, 31.9%, 8.7%), stroke (23%, 12.8%, 18.1%), dementia (19.1%, 2.9%, 14.2%), malignancy (19.5%, 12.1%, 20.1%), and depression (19.8%, 7.9%, 12.2%). After adjustment for other risk factors on multivariate analysis only the following predicted a greater risk of subsequent total mortality: Charlson comorbidity index, age, cognitive impairment and functional decline ($P < 0.001$).
Conclusions.– HF patients admitted to our AGU are more independent and less cognitively impaired than those without HF, with statistically significant differences in length of stay and 24 month mortality with VTE individuals. The high fatality recorded in our cohort may be inherent to the nature of our very elderly, frail, multimorbid, dependent subjects rather than determined by underlying specific illnesses such as cardiac failure.

PC-331

A social-health triage (SHT) in emergency services (ES) of older patients: A two-year study

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Introduction.– Aim of the study was to evaluate a Social-Health Triage (SHT) in order to reduce inappropriate admissions, by increasing alternative solutions, i.e. home services and temporary non-hospital residential facilities, of older patients who attend the Emergency Services (ES).
Methods.– A multi-professional team including a geriatrician, a nurse and a social worker was operative for five days/week at the ES of the St. Anthony Hospital, Azienda ULSS 16 Padua, Italy. In all patients, the SHT team carried-out a clinical evaluation and a Comprehensive Geriatric Assessment. When admission to the hospital was considered inappropriate by the SHT, alternative solutions to hospital admission, including home-services and/or temporary non-hospital residential facilities, were proposed to patients and their caregivers.
Results.– From 01 January 2009 to 31 December 2010, 226 older patients (mean age = 80.5 years, range 65–100 years, females = 144, 63.7%) were included in the SHT. Fifty patients (22%) were 65 to 74 years old, 121 (54%) were 75 to 84 years old and 55 patients (24%) were aged greater or equal to 85 years. Thirty-seven patients (16.3%) were classified as ES white code, 120 patients (53%) were green code, 64 patients (28.3%) were yellow code, and five patients (2.2%) were red code. The reasons of admission to the ES were: wasting = 16%, cognitive impairment/behavioural disorders = 15%, pain = 11%, dehydration = 7%, consti-

pation = 7%, syncope = 5%, fall = 5%, anaemia = 4. Two hundred and twenty patients came from their home; 63 of these patients (27.8%) had home services; only six patients (2.7%) came from residential institutions. The SHT considered appropriate hospital admission for 141 patients (62.4%) who were admitted to the Geriatric Unit. In 84 patients (37.6% of cases), the SHT considered inappropriate hospital admission. Of these, 66 patients were discharged to their home after activating home-services, eight patients were discharged after a ''brief observation'' period at the ES, six patients were sent to temporary non-hospital residential facilities, two patients were referred to Day Hospital, and two patients returned to their residential institution.
Conclusions.– The SHT at the ES level, including a geriatrician, a nurse and a social worker, is a useful and effective tool to reduce inappropriate hospital admissions and improve the quality of care of older patients who are admitted to ES.

PC-332

Breakfast club in an acute rehabilitation unit – can it help in achieving rehabilitation potential of the elderly patients?

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Introduction.– Breakfast club is an important tool to assess and achieve functional independence of elderly patients. Breakfast club was introduced in the day room of the acute rehabilitation unit of our hospital as part of ongoing rehabilitation and was supervised by the occupational therapists. This was set up to continue both the clinical management and rehabilitation of elderly patients with ongoing therapeutic and functional needs.
Method.– Patients were selected on the basis of needs to support functional intervention and on the advice of a multidisciplinary professional team including two Consultant Geriatricians supported by junior doctors, nursing staff, physiotherapists, occupational therapists and social service managers. Patients were accepted for a whole range of conditions excluding stroke rehabilitation and those on the orthogeriatric pathway, as they were cared for in different wards. The patients included ambulatory and wheelchair bound patients without significant cognitive impairment during their inpatient rehabilitation in the acute rehabilitation unit. A maximum of eight patients could be accommodated at any given time with adequate supervision. Patients were observed and assessed for their functional status, kitchen assessment, communication and social interaction with other groups of patients. Entry of the patient's performance and individual assessments were noted on the patient's notes and used in the multidisciplinary meeting as part of discharge planning process and assessment of integrated needs. Feedback was obtained from patients and carers.
Results.– Between February 2010 and November 2010, 427 discharge episodes took place of which 235 patients went home, 129 patients to long-term facilities (residential and nursing homes) and 63 patients to other intermediate care facilities. The effects of the breakfast club were analysed by patient/carer feedback and looking at the discharge destinations of patients. The service was well received by both patients and carers with a positive feedback.
Conclusions.– Breakfast club helped to identify patients' rehabilitation potential, assess independence in kitchen areas, provide adequate dietary advice and allowed patients to develop social interaction, engagement with peers and helped cares and relatives to observe first hand functional independence and occupational performance. If adequately resourced, this can be very helpful in achieving full rehabilitation potential.

PC-333

Geriatric medicine placement for foundation trainees – does it meet the training objectives of foundation training?

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Introduction.– Foundation programme was introduced in 2005 in United Kingdom (UK), as a two year programme to enable newly qualified junior doctors to acquire the generic and clinical skills to identify and manage acutely ill patients. Trainees are placed usually in six four monthly attachments to acquire these skills, one of which is a medical firm attachment in the general medical specialties. We describe our experience of using a geriatric medical placement in place of a general medical specialty for acquiring these skills.
Method.– From August 2005 to March 2011 seventeen Foundation Year 1 (F1), trainees in a geriatric medicine placement were included for this study. They were placed in a ward, which included medical patients across all age groups with particular focus on respiratory patients. The geriatric medicine F1 worked side by side with another F1 trainee who looked after the younger group of patients. Evaluation of trainee progress and suitability of the geriatric medicine placement was done by portfolio assessment (including work based assessments and reflective log) and trainee interview and feedback.
Results.– Positive indicators in the geriatric medicine placement were identified in the following areas; holistic approach to patient care, multiprofessional working, working under pressure, end of life care, discharge planning and interaction with community teams, managing patients with a wide variety of co-morbid conditions and working along the interface of surgery and medicine. Trainees had ample opportunities to complete work-based assessments. Negative indicators, which could affect trainee satisfaction included: supervision issues in managing complex elderly patients, less opportunities for outpatient work, increased workload pressures and perceived lack of practical procedures training.
Conclusion.– With demographic changes in the population and increased incidence of elderly patients seeking hospital care, properly constructed geriatric medicine attachments for trainee doctors go a long way to address the issue of achieving the skills to manage elderly patients and their complex presentations for trainees. Properly constructed geriatric medicine placements in acute elderly care with defined outpatient experience and supplementing practical skills training, can meet their training objectives. Programme Directors may need to take into account these domains when approving future foundation programme placements.

PC-334

Characteristics of patients referred to emergency room after syncope. a quality study in a general hospital in Oslo

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Introduction.– Despite available European guidelines for diagnosis and management of syncope, a systematic strategy for management of patients referred to the Emergency Room (ER) after syncope has not been implemented in our department and many other Norwegian hospitals. In the aim to develop a care pathway for syncope patients in our department, we wanted to study characteristics of patients referred to ER and admitted to Medical department after syncope.*Method.*– A quality study in a general hospital. During one year from November 2007 to November 2008, patients referred to ER after syncope were consecutively registered.

Information about gait function, living conditions, relevant medical conditions and medication were collected at admission. Performed test, cause of syncope, length of hospital stay and one-year mortality were obtained from patient journals.*Results.*– Data were collected from 94 patients referred after definite or suspected syncope. Mean age was 72 (range 16–103) years, 70 (74%) were aged 65 years or older, 47 (50%) were female. Twenty-seven patients (29%) had impaired gait function, 22 (23%) received home-based services and seven (7%) lived in nursing homes. Thirty-six (38%) had syncope and 17 (18%) fall(s) in their previous history. Common premorbid conditions were hypertension (28%), cerebrovascular disease (26%), arrhythmia (21%), ischemic heart disease (16%), dementia (15%) and alcoholism (8%). Twenty-seven (29%) used five or more drugs (mean three). Beta-blockers were used by 25 (27%). Calcium-channel-blockers (16%), diuretics (14%), other antihypertensive drugs (23%), benzodiazepines (16%), antidepressants (14%) and neuroleptics (9%) were other commonly used drugs. In 17 patients (18%), the etiology was considered multifactorial and in 27 (29%), the cause of syncope could not be revealed. Mean length of stay was 6 days. One-year mortality among patients aged 65 years or older was 20%.
Conclusions.– The majority of patients referred to ER after syncope was older, had high prevalence of premorbid conditions and polypharmacy. A single cause of syncope was found in only 53%, etiology was considered multifactorial in many patients. One-year-mortality was high. Effective care pathways including comprehensive geriatric assessment as well as systematic syncope management seems appropriate for older patients admitted to ER after syncope.

PC-335

External geriatric unit: a choice for geriatric follow-up

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Introduction.– Institutionalised elderly people need of comprehensive geriatric evaluation as well as require assessment by many other services (such as emergency). Hospital Infanta Elena (HIE) has a Unit of External Geriatric Care (UGE) with a geriatrician visiting ten nursing homes.
Means.– To study clinical features of the patients followed in our UGE, also the assistance by other services of our Hospital.
Materials and methods.– Observational, descriptive and retrospective study in which we reviewed clinical history of a sample of 78 patients followed by the UGE since its beginning in 2008 until today.
Results.– Seventy-eight patients, 75% women. Mean age 83.5 ($\pm$ 9.89). Mean time of follow-up was 14.8 months ($\pm$ 6.36). Mean global deterioration scale of 4, Mean Katz scale of D. Mean Charlson comorbidity of 2.14. Forty-seven patients (59.5%) with polypharmacy. Thirty-three patients (42.8%) were evaluated for screening, diagnosis and follow-up of dementia and 13 patients (16.5%) were seen for evaluation and management of behavioural disorders. In 82.3% (65), the evaluation responded to the concerns of the nursing homes personnel. The emergency room was visited after the first visit by UGE in 50.6% (40 patients), of them 45% (18) went more than once. Of these visits 38.8% responded to infectious diseases and 26.5% to behavioural disorders. In 19 patients (24%) was diminished the number of drugs taken (with a mean of two drugs per patients with polypharmacy). Thirty patients (39.2%) visited medical services in the hospital (different from geriatrics), of them 8 (26%) UGE continue doing this follow-up inside nursing homes, besides in 12 patients UGE followed up patients seen by services different from geriatric prior to our first visit to the nursing homes.
Conclusions.– Most of the patients in nursing homes followed by our external geriatric unit had functional and cognitive impairment, polypharmacy and comorbidities that need the intervention of many specialists (including emergency services), requiring regular visits by a geriatrician from the hospital to the nursing homes to solve such necessities and prevent multiple (and sometimes unnecessary visits) to the Hospital.

PC-336

Benefits of an orthogeriatric unit

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Introduction.– Scientific evidence on the benefits of Orthogeriatric unit, in terms of reducing waiting time of surgery, average length of stay and mortality, reduce medical complications, produces benefits in functional recovery and reduction of institutionalisation and improves the prognosis for functional recovery. They also allow proper placement on discharge to ensure continuity of care.
Objective.– Describe the benefits of the treatment of patients admitted with hip fracture in an Orthogeriatric unit. Analyse the differences at the level of functional status, complications, average length of stay and discharge location.
Methods.– An observational, descriptive and retrospective assay was performed. Variables collected were: average length of stay, delay of surgery, complications, mortality, functional status as measured by Barthel Scale, functional impairment at admission, discharge location and readmissions. Patients were grouped according to the income, at Traumatology unit with Geriatric consultation (traditional method) or at Orthogeriatric unit.
Results.– The average age of patients admitted to Orthogeriatric unit was 82 years and 84 years for the admitted to Traumatology unit. In both cases the majority were female patients, 89% and 77% respectively. Patients admitted to the Orthogeriatric unit received an early geriatric assessment and underwent surgery sooner. The average length of stay was 30% lower in patients hospitalised in the Orthogeriatric unit, the 6.72% had complications (increase of 7.54% compared to traditional treatment) the most common complications were postoperative anaemia and delirium. There was a decrease of functional impairment at admission of 12.92%, also observed a decrease of 8.9% of readmissions and mortality reduction of 5.74% (although these results were not statistically significant).
Conclusions.– Hip fracture mainly affects elderly people, mostly women, with comorbidity. Orthogeriatric unit provides improvements in the treatment of hospitalised patients:
– reduced hospital stay;
– reduced time from admission to surgery;
– improve functional status;
– location on discharge.
Orthogeriatric unit allows a timely identification of medical complications from surgery.

PC-337

Assistential activity of a interdisciplinar palliative care unit (UFISS-UCP) in non oncologics patients

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Objective.– Description of the activity of UFISS-UCP in non oncologic patients in a general hospital and their assistential impact.

Method.– Retrospective and descriptive study to the patients assisted by UFISS UCP during 2010. It makes a division in two groups: oncologics (OP) and non oncologics patients (NOP) and compares the following variables: age, principal diagnostic, time to call the consultant, Barthel Index; Karnofsky index and exitus during UFISS UCP attention.
Results.– Seven hundred and ten patients who needs medical attention by UFISS UCP during the year 2010: 86 (12%) have non oncologic profile. Most aged NOP (MA: 80 years) than OP (72 years). Time to call the consultant: NOP 10 days OP 6 days. I. Barthel NOP 15; OP 45. I Karnofsky 15% superior in OP than NOP. Mortality: NOP 38% OP 17%. More frequent diagnostics are in order of importance: dementia, heart failure, peripheral artheriopathy and chronic pulmonary obstruction diseases, who are 72% to the total diagnoses.
Conclusions.– Differences observed in NOP are more aged population, more functional impairment and more mortality, in comparison with OP group. The time to call to the UFISS UCP team are more important in relation to makes a survival prognostic. Its necessary makes and design new tools to rich a correct live prognostic in NOP.

PC-338

Necessities and health services use between elderly in an urban area (2009)

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Introduction.– In population studies, multidimensional functional assessment questionnaires have been shown to be the most appropriate to assess community-dwelling old people.
Objective.– To estimate the main necessities and frequency of health services use between older than 65 years old urban population in Salamanca city.
Method.–
Design.– Observational transversal study in Salamanca city. Spanish validation of OARS-MFAQ questionnaire was applied as a personal interview at participant home address. The questionnaire obtains information about the use of 22 total services for the last 6 months: it establishes intensity, frequency of use and necessity. Reference population was people older than 65 years old resident in Salamanca city. A total of 721 participants were initially selected by simple random sample, and 327 participants finally completed the interview.
Results.– A 62.1% tells to have a good/excellent health, 27.2% is regular and a 7.6% has a bad global health. For the last 6 months, a 19.9% has been healthy most of the time and a 16.8% has not visited the physician or nurse for that time. A 79.8% has not spent any period of time in which someone has taken care of them for 24 hours per day.
For the last 6 months, a 26.9% has spent some days without taking care of anything, a 3.4% had a hospital admission and they have visited physician/nurse a mean of 3.68 times (SD. 3.58). A 9.2% has received physical/respiratory rehabilitation exercises. A 10.1% tells that need more treatments or medical care than what they receive. A 12.6% considers needing advice or treatment for personal/familiar problems or nervous/emotional problems, but only 5.4% has received them. A 26.7% out of them has paid for them.
Conclusion.– Most of the old people consider having a good health condition. Between all unsatisfied necessities in health care, those related to mental health are remarkable.

PC-339

Impact in saved beds in patients of great complexity

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Introduction.– High Resolution Hospitals (HRH's) emerge to address the current social demand that demands increasingly more rapidness on health care practices, in order to avoid unnecessary delays, and are often located far from major urban centres where it is more difficult to access specialized health services. Patients with chronic diseases and multiple diseases and patients at the end of their lives, can find in these centres an appropriate place, adapted to their needs, with easy access and personalized care at the hospital level, sharing services with primary care.
Objective.– We considered the effectiveness and efficiency of care for this group of patients according to the results obtained during a year of action in the Morón HRH.
Methods and results.– We describe the performance of patients with multiple comorbidities health and palliative care in 2010 in the area of internal medicine of HRH of Morón. We have attended 1.241 external patients, 69 admissions in the day-care hospital, and 239 admissions in the Multipurpose Care Unit. With high-complexity patients (case mix index 1.65) and level of dependency (51% with lower Barthel of 60), we have had an average stay of 4.48 days, which compared with the expected average stays according to the same conditions we have achieved a −6.31 impact in saved beds. We also note that 14.64% of admissions have been programmed.
Conclusions.– According to the results obtained from the care of patients with multiple comorbidities and palliative care, due to the complexity of patient type, to the impact in saved beds and to the high percentage of programmed admissions, we can excel the Morón HRH in efficiency and efficiency among the usual hospitals attending these patients.

PC-340

Unit emergency short stay as a alternative that conventional hospitalisation in geriatric patients with active oncological disease in a universitary tertiary hospital

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Introduction.– The number of geriatric patients with oncological disease has increased considerably in the last years because of the precocious diagnoses and new therapies. Consequently, the demand to the Hospital Emergency Room (HER) as well as the hospitalisation have been increased by the complications derived from the own pathology and its treatment. In the present economic context, to find more efficient alternatives to the conventional hospitalisation can suppose an improvement in the treatment of the process of urgent attention of the geriatric oncology patient.
Objectives.– To know the functional incidence, reasons for consultation, diagnoses, characteristics and the final destiny of the oncological disease in entered geriatric patients in the Unit Emergency Short Stay (UESS) of the HUB.
Methodology.– Descriptive study of the population entered in the UESS with any reason for consultation related to oncological disease throughout the months of March-May of the 2011. Indispensable prerequisite was that there was no severe functional dependence and social problems after. The used material was obtained from the database of the computer science support of the

HER. The variables took shelter of age, sex, cognitive deterioration, days of stay, reason for consultation, main diagnosis and final destiny of the patient.
Results.– The global number of income in the USS during the period of the study was of 460. The number of consultations with oncological disease during this period was of 56, which represents the 12% of the total of income. The average age was of 75 years, being 18 women and 38 men. The number income caused by the own pathology was 58%, emphasizing the demand of control of symptoms of following neoplasies: lung 20%, sucks 12% and colon 7%. The days of stay were 2 days. The final destiny of the patients was the following one: domiciliary discharge 82%, entrance oncologic hospital 0%, entrance in hospitalisation at home 6% and exit us 3%.
Conclusions.– Most of the income they are motivated for control of symptomatology of the own oncological disease. The patients who benefit more from this entrance are men, with pulmonary carcinoma and the final destination is the domiciliary discharge.

PC-341

Age does not predict worse outcome in chronic wound healing

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Background.– Chronic wounds represent a serious problem in elderly patients. Older people often do not benefit from modern wound management.
Goal.– Goal of our work was to determine whether older age predicts worse outcome in chronic wound healing when modern best care measures are applied.
Methods.– We performed retrospective analysis of medical records of chronic wound patients treated on out-patient basis by the same physician at department of geriatrics. All the patients were divided into three groups: group 1 (age less than 65), group 2 (age 65–75) and group 3 (age more than 75). We evaluated treatment success in all patients and in subgroup of patients with complete wound healing time and number of visits needed for wound resolution.
Results.– From January 2006 to December 2009 we enrolled 94 chronic wound patients

.Table 1. Summarizes treatment success in all patients.

	Successful healing?	Complete wound healing	Non-healing wound
Group 1 (n = 32)	29 (90%)	26 (81.3%)	3 (10%)
Group 2 (n = 31)	30 (97%)	27 (87.1%)	1 (3%)
Group 3 (n = 31)	28 (90%)	23 (74.2%)	3 (10%)
P	0.61*	0.73*	0.61*
	0.61**	0.33**	0.61**
	1.0***	0.76***	1.0***

Comparison of *group 1 vs. 2, **group 2 vs. 3, ***group 2 vs. 3.
Successful healing = complete wound healing + wound in overt regression.

Table 2. Summarizes time and number of visits needed for complete wound healing.

Complete wound healing	Number of visits (percentile – number)	Time to complete healing (percentile – months)
Group 1 (n = 26)	25th – 6	25th – 2.5
	50th – 7	50th – 3.5
	75th – 10	75th – 5.5
Group 2 (n = 27)	25th – 6	25th – 2.5
	50th – 9	50th – 3.5
	75th – 13	75th – 5.5
Group 3 (n = 23)	25th – 6	25th – 2.5
	50th – 8	50th – 3.5
	75th – 10	75th – 5.5

Conclusions.– Our retrospective analysis demonstrates clearly that chronic wounds were healed with the same success rate in patients all three groups – younger than 65, 65–75 years and 75 years and older. Time and number of visits needed to complete wound healing did not differ between the three age groups.

PC-342

Palliative care unit into the geriatrics department

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Aim.– To develop into the medicine of the Elderly Department and Palliative Care Unit (PCU), because of population ageing and sociocultural changes related to death, increasing the numbers of patients are dying in hospitals.
Material and methods.– These Palliative Care Unit is staffed by two geriatrics doctors, specializing in palliative care, specialist trained nurses, a psychologist, and a social worker.
Resources.– Hospital beds, Day Care Unit, consulting rooms, other services' referrals, phone assistance and ESAD coordination. Descriptive analysis of first year activity.
Results.–:
– hospitalization: 92 patients, with an average of 2 beds/week. Thirty-three percent deceased while admitted, rest referred to ESADS, particular PCUs; average admission stay: 3 days;
– diagnostic: cancer 72%, cardiac/respiratory failure 11%, terminal dementia 13%, CVIA 4%;
– consultation: referred from hospital: oncology 79%, medicine 10%, surgery 8% and orthopaedics 3%; 15% from GPs; average of 3–4 new patients per week, plus 5–6 revisions;
– day care unit: palliative care techniques applied in an outpatient basis: paracentesis, transfusions, adjustment of treatment... serving a total of 12 patients;
– referrals: a total of 55, priorizing admission. Eighty-eight percent from the A&E, with an average waiting time < 32 h;
– phone assistance: 130 calls attended, 10% from GPs/Retirement Homes and 90% from patients/families.
Conclusions.–:
– priority admission of Palliative patients from the Emergency department;
– main services asking for referrals: Oncology and Emergency department;
– bed facilitation to EADS (domiciliary palliative care units), for these patients, opposing other Madrid hospitals;
– families positive feedback due to phone assistance following discharge;
– main diagnostics are oncologic, with a high percentage of terminal dementia;
– this unit can help to reduce the number of admissions and optimize the care provided in others units of palliative care.

PC-343

External geriatric unit (uge): New concept in geriatrics

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In Infanta Elena Hospital, we developed a new concept in geriatric assistance: External Geriatric Unit which brings specialized geriatric consults inside geriatric residences located around our

institution. In our area there are 1305 persons living in 10 residences.
Material and methods.– Descriptive study including 863 patients evaluated during the unit's first year. It was collected data regarding social and demographic status, reason for the consult, dependency in the activities of daily living, presence of cognitive impairment and dementia, comorbidities and polypharmacy.
Results.– Mean age 85.45 years, 67% women. The most frequent reason for the consultation was cognitive evaluation and study of behavioral disorders (47.4%); comprehensive geriatric evaluation (13.6%); paperwork for wheelchairs, props and domiciliary oxygen therapy (8.6%), functional decline evaluation (7.3%), nutritional assessment (6.4%). Ninety-two percent of patients showed polypharmacy and 25% of unnecessary drugs.
Conclusions.– The Unit was created to optimize resources and to avoid unnecessary visits to the hospital, also to control polypharmacy in order to increase the quality of care given by our Hospital. We are capable of following our patients in the residences, with optional consultation by phone, speeding up consults by other services as well as medical procedures, also to save unnecessary visits to emergency room. The Unit is also a tool to give education to the medical personnel of the residences.

PC-344
Analysis of a very old population in an internal medicine department

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Objectives.– The Hospitais da Universidade de Coimbra Internal Medicine Department doesn't have a Geriatric Unit yet. It is formed by four wards (A, B, C and D), with 33 beds each. The objective was to analyse the characteristics of the very elderly in the Internal Medicine Department, concerning main diagnosis at admission, sex, length of stay and mortality, comparing those data with the overall data, from 1/1/2010 to 31/12/2010.
Material and methods.– After hospital admission until hospital discharge, it was elaborated a report regarding each patient and the data gathered in a database, revised by several physicians monthly; conclusions were drawn. The International Classification of Diseases 10 (ICD-10) was considered.
Results.– Four thousand seven hundred and twenty-four (4724) discharges in 2010. Overall mortality of 16.2%. Mean Hospital stay of 11.01 days, mean patient's age of 73.9 years-old; concerning gender, 46.9% were men and 53.1% women. The main diagnosis at admission was Diseases of the Respiratory System (36.7%), according to ICD-10. Looking at the very old ($>$ 85 years old) we had one thousand two hundred and sixty nine discharges (1269), 29.7% of all the Internal Medicine discharges, a mortality of 25.1%, mean hospital stay of 10.0 days, a mean patient's age of 87.5 years and concerning gender, 62.3% were women, 37.8% men. The main diagnosis at admission was also diseases of the Respiratory System with a total of 47.1%.
Conclusions.– The very elderly constitute around 30% of all the Internal Medicine discharges, a high percentage, reflecting the increasing life expectancy of our societies; curiously 62.3% of our very elderly patients were women and, as expected, the mortality in this group was higher (25.1% vs. 16.2%). The Respiratory diseases correspond to around 50% of the diagnosis at admission in the very elderly, a gigantic burden.

PC-345
Clinical characteristics and outcomes of hospitalized older patients with distinct risk profiles for functional decline: A prospective cohort study

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Background.– The aim of this research was to study the clinical characteristics and mortality and disability outcomes of patients who present distinct risk profiles for functional decline at admission.
Methods.– Multicenter, prospective cohort study conducted between 2006 and 2009 in three hospitals in the Netherlands in consecutive patients of $\geq$ 65 years, acutely admitted and hospitalized for at least 48 hours. Nineteen geriatric conditions were assessed at hospital admission, and mortality and functional decline were assessed until twelve months after admission. Patients were divided into risk categories for functional decline (low, intermediate or high risk) according to the identification of Seniors at Risk-Hospitalized Patients.
Results.– A total of 639 patients were included, with a mean age of 78 years. Overall, 27%, 33% and 40% of the patients were at low, intermediate or high risk, respectively, for functional decline. Low-risk patients had fewer geriatric conditions (mean 2.9 [standard deviation [SD] 1.7]) compared with those at intermediate (mean 5.7 [SD 2.2]) or high risk (mean 7.2 [SD 1.9]) ($P < 0.001$). Twelve months after admission, 39% of the low-risk group had an adverse outcome, compared with 50% in the intermediate risk group and 69% in the high-risk group ($P < 0.001$).
Conclusion.– By using a simple risk assessment instrument at hospital admission, patients at low, intermediate or high risk for functional decline could be identified, with distinct clinical characteristics and outcomes. This approach should be tested in clinical practice and research and might help appropriately tailor patient care.

PC-346
Descriptive data of a French orthogeriatric pilot unit

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Fractures and orthopaedic surgery represent a growing concern in elderly patients. Orthogeriatrics appeared in 1950s, and interest and efficacy of such units is still a matter of debate. The aim of our study was to describe patterns and main outcomes of elderly patients managed in the first French orthogeriatric study.
We conducted a prospective observational study in a pilot orthogeriatric unit (Pitié-Salpêtrière hospital, Paris, France) over an 18 months period in patients aged 75 years and older. This unit is part of the geriatric department, and is managed by geriatricians, with orthopaedic consultant. Main clinical and biological baseline characteristics, orthopaedic condition and outcome were analyzed. Two hundred and twelve patients were admitted during the study period. Hip fracture was the most frequent referral cause (64%). Main characteristics included hypertension (62%), dementia (34%), depression (31%), cancer (30%), atrial fibrillation (21%), stroke (19%), heart failure (17%) and coronary artery disease (17%). Previous IADL was 9 ± 5, and 95% of patients were able to walk. Main complications during hospitalization were represented by anemia (91%), pain (85%), delirium (35%), infection (25%) including aspiration pneumonia (8%), pressure ulcers (10%), acute coronary syndrome (8%). Lower haemoglobin level was 9 ± 1 g/dL, creatinin clearance was 56 ± 25 ml/min and albumin 29 ± 4 g/L. Medical care included

blood transfusion (73%), morphine use (67%), early mobilization in chair (median 1 day) and to walk (median 2 days). At the end of hospitalization, 78% were able to walk, 16% were unauthorized to walk, and only 6% were unable to walk. Length of stay was 12 ± 9 days and in-hospital mortality 2%.
Despite elderly patients had several associated comorbid conditions, with serious post-op complications, most patients keep walking after an orthopaedic surgery and express a low level of mortality. However, there is a need for comparison with standard management in orthopaedic unit to demonstrate usefulness of these units.

PC-347

Analysis of the most frequent DRG in non-agenarios of a unit of geriatric

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Objectives.– To assess the impact of the most frequent DRGs in patients 90 years of age or older admitted to the Acute Unit of Hospital Virgen del Puerto of Plasencia and correlate with length of stay.
Material and methods.– This is a descriptive study of de most common DRG on patients admitted to our unit over a 2-year period (April 2008 and 2010).
Results.– In years both studied, the total of patients 90 years of age or older was 265, with an average of 92.77 years (rank 90-102) and length of stay 8.91 days. The 11 DRG more frequent supposed 53.58% of the total of admission whit the following results:

DRG	544	541	101	174	89	127	14	533	540	207	123
n, %	14.71	12.45	7.55	4.90	4.53	3.40	2.26	2.26	2.26	1.89	1.89
Length of stay, days, mean	8.66	10.87	9.1	9.46	11.33	6	2.16	19.33	11.16	8.4	7.6

The length of stay generated by these more frequent DRG was 9.46 days.
Conclusions.– The DRGs most frequent in nonagenarians patients admitted in our unit is related to infectious pathology of the respiratory system and the cardiovascular pathology with complications and associate co-morbidity.

PC-348

Are times changing in intermediate care standards?

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Objectives.– To describe characteristics of patients discharged from an Intermediate Care Unit (ICU) ascribed to an urban University Hospital (535 acute care beds, attending a population of 421.077) during 2010, compared to 1997 and 2009. To analyze if implementation of a geriatric intervention program on hip fracture and stroke might have an impact on reducing length of stay for the acute care hospital.
Methods.– Retrospective review (clinical charts) from the 517 patients discharged during 2010, compared to the 170 patients discharged during 1997.
Data.– Age and gender, diagnosis, geriatric comprehensive assessment, admission length, length of stay (Neurology, Orthopaedics) before transferring to ICU (January to June 2009 and 2010), after implementation of a geriatric intervention program (hip fracture, stroke), complications (2010), discharge.
Results.– Mean age 78.98 years (2010) vs. 76.4yrs (1997). Female 57.4% vs. 52%. Charlson (2010) 1.77. Diagnosis: fractures 46.6% vs. 36% (1997, 21 days), neurological disorders 24.3% vs. 31.7% (1997, 22 days), weakness 12.8% vs. 10.58%, surgery 7.7% vs. 6.4%. Barthel: previous (2010) 80.01, at admission 39.43 vs. 45, at discharge 65.3 vs. 66. Pfeiffer (2010) 1.64. Complications (2010) in 202 patients, 82% managed at ICU. Discharge destination: home 76% (2010) vs. 75% (1997), nursing home 4.2% vs. 8.8%, Long Term Care 3% vs. 2.9%, 8.3% vs. 4.7% died and 7% vs. 8.2% readmitted to Acute Care. Admission length in ICU: 42.1 days (2010) vs. 41.3 (1997). Admission length at Acute Care (2010 vs. 2009): 22.7% reduction patients from Neurology Unit and 10.6% Orthopaedics.
Conclusions.– ICU admissions have increased, patients are older, fracture and stroke continue to accomplish 70% of all admissions, transfer from acute care settings is earlier, patients have worse functional status at admission with no change on functional status at discharge, 39% presented complications which were in 82% of cases assumed at the ICU itself. Therefore nursing and medical patient care standard have nowadays higher complexity and requirements. Mortality has increased. Length of stay has not changed. Early transfer to intermediate care especially from Neurology (stroke) and Orthopaedics (hip fracture) have had a direct impact in reducing length of stay for the acute care hospital.

PC-349

Analysis of mortality in an acute care unit of geriatrics: A clinical profile

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Introduction.– Mortality studies among elderly people are important not only to quantify and classify the most prevalent causes of death among elderly people, but to know the specific profile of a concrete subgroup of patients in our sanitary area frequently forgotten in our studies.
Method.– Descriptive epidemiological study concerning patients who died in our Acute Unit of Geriatrics in years 2009 and 2010.
Results.– *n* = 264 patients (8.6% from total admissions). Average length of stay: 9.39 days. Male 58.6%. Mean age 87.14 years. Katz A-B: 16.3%. Katz C-E: 24.7%. Katz F-G: 59%. Physical Red Cross Scale: 0-2 = 32.5%; 3-4 = 28.2%; 5 = 39.2%. Mental Red Cross Scale: 0-2 = 57.1%; 3-4 = 26.4%; 5 = 16.5%. Nutritional Status (CONUT index): normal 7%; light undernutrition: degree: 26.4%; moderate: 46.7%; severe undernutrition: 20%. Community-dwelling 40.7%. Living with relatives: 29.8%. Institutionalized: 29.8%. More than 2/3 of our sample take 5 or more drugs before admission. Main causes of death: Infections: 54.7%. Heart failure: 26.9%. ACVAs: 7.2%.
Conclusions.– In our study, near 2/3 of our sample was highly dependent for basic day-living activities. Despite this functional profile, only 29.8% of them were institutionalized. Main death causes were in this order, infections, heart failure and stroke. There were no significant differences between between males and females. It is important to emphasize the high prevalence of undernutrition among these patients, only 7% normal nutritional status and more than 2/3 with moderate or severe undernutrition.

PC-350

Adapting the occupational to the ending of the institution life

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Introduction.– The old people home has 140 vacancies. The old people profile is: > 80 years old, 50% dependents, multimorbidity

and with some geriatric syndromes. Half of the old people have dementias in advanced and moderated stage. The profile is old people with some chronic advanced illness; cancer, dementia, organs failure and neurological reasons.
Objective.– To know the occupational therapy functions in the ending of the life.
Method.– The occupational therapist adapts occupation to the end of life, as it was said by Cooper 2003, through the assessment of the functional impact of the resident in their environment. This can be done, taking into account; their necessities, training the daily activities, modifying their way of life, controlling stress, giving support products in order to offer comfort, using splint on upper limb, adjusting the roles and functions loss psychologically, exploration and adaptation to the activities for the residents and their families. Multisensory activities and old people with dementias in advanced stage involvement is being carried out.
Results.– They fulfil ending criterion as it is said in Palliative prognostic index and national Hospice organization 1996, about the 41.66% of the total of residents. 84.8% residents in a terminal situation are given support products to ensure the comfort. 74.3% residents are multiposition wheelchair user and also they use an anti-crust cushion.
Conclusion.– Due to present law 39/2006, December 14th, dependence level of the residents is dependents, so the occupational therapist has to change their rehabilitation approach to compensatory and palliative approach.

PC-351

Functional evolution in a recovery in hospital unit

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Objectives.– To describe the characteristics of the attended population in terms of comorbidity and functional recovery. To find out length of stay (LOS) predictors, depending on the original Hospital department.
Material and methods.– All the patients attended in the last 8 months were included. We studied demographic data, original Hospital department, modified CIRS comorbidity index, LOS, basal, admission and discharge functional status (Barthel index and Functional Ambulation Classification-FAC-). Qualitative variables are shown as frequencies distributions, quantitative as mean with standard deviation (SD) if normal distribution or as median with interquartile range (IR). Test included: median comparison, linear regression.
Results.– Two hundred and twenty-three patients were selected, mean age 85.4 y (SD 6.79), men 29.6%, CIRS 12.4 (SD 6.4). FAC: basal 4.0 (IR 2.0-5.0), admission 2.0 (IR 0.0–3.0), on discharge 4.0 (IR 1.0–4.0). Barthel: basal 81.5 (IR 33.0-97.0), on admission 30.0 (IR 6.0–56.0), on discharge 55.0 (IR 15.0–81.0). Original hospital department: orthopedic surgery 22%, Geriatric 17%, Internal medicine 15.2%, Emergency 34.5%, others 11.3%. Original department median stay (days): orthopedic surgery 16.0 (IR 14.0–22.0), Geriatric 13.0 (IR 12.0–18.0), Internal medicine 12.0 (8.5–20.5), Emergency 11.0 (8.0-16.0) – $P = 0.014$. LOS was not related to age, CIRS, FAC (basal-admission) and Barthel (basal-admission). However it was higher in patients with greater Barthel discharge-admission index ($P = 0.033$). This difference was greater in orthopedic surgery patients (+25.0 – IR: 13.0–35.0), than in the other departments (Geriatri +14.0 – IR 2.0-21.0, Internal medicine +10.0 – IR 1.5–21.0, Emergency 0.0 – IR 0.0–16.5).
Conclusions.– LOS, in our study, was different between the different original departments. It was not related to age, comorbidity or basal-admission functional status. However it was higher in patients with greater functional recovery. This recovery was different depending on the original department and greater in orthopedic surgery patients.

PC-352

Department for acute geriatric and remobilisation under the direction of a specialist of physical medicine and rehabilitation

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In Austria the first Department for Acute Geriatric and Remobilisation under the guidance of a specialist in physical medicine and rehabilitation was launched in May 2006.
Currently the department is made up of 20 beds. The care for hospitalized patients takes place around the clock by a team consisting of six specialists who show them responsible for the on-call duties. The average workload at the department in 2010 was more than 95%, the average age of patients was 78.91 years and the average durance of stay 19.9 days. The patients came 30% from neurological, 28% from traumatic, 24% from orthopedic, 10% from internistic department and 9% from extramural.
In our department twice a week an interdisciplinary meeting takes place with doctors, physiotherapists, occupational therapists, speech therapists, neuropsychologists, clinical psychologists, massage therapists, nurses and nutritionists. Our department-benchmark is the Functional Independence Measure (FIM).
If necessary other geriatric assessments are carried out such as the Timed "Up and Go" test, the modified Moberg pick up test, the Mini-Mental State Examination, and others as recommended by the Austrian Society for Geriatrics. By default every patient is tested with the Mini Nutritional Assessment. The average FIM development was 16.3 points, slightly more than one point for each day of therapy.
Sixty-nine percent of our patients could leave us for home, 16% to convalescent homes, 8% into homes for the elderly and 4% were discharged to nursing homes. Two percent had to be transferred to other departments of the hospital.

PC-353

Relationship between social parameters, institucionalization risk and length of hospital stay in patients aged over 90 years

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Aim.– To assess the relationship between social parameters and length of hospital stay with long-term care institution post-discharge destination in patients aged over 90 years, admitted to an intermediate care unit.
Patients and methods.– A 4-years prospective study of all patients aged over 90 was performed. Previous cohabitation (family, alone, caregiver), previous and kind social support, and length of hospital stay were registered. Patients were divided in two groups according to discharge destination: institution (nursing home or long-term care unit) or at home.
Results.– From 128 patients registered (100 women); mean age 92.2 ± 2.1, 11 dead during unit stay, 10 were transferred and 3 lived previously in a nursing home. From the 104 evaluated, 31 (29.8%) required institutionalization after discharge, 73 (70.2%) returned home. From 30 (29.1%) of patients who went to an institution after

discharge (in one patient information wasn't available), 16 (53.4%) lived before with family, 13 (43.3%) alone, 1 (3.3%) with caregivers; 73 (70.9%) patients who returned at home, 48 (65.7%), 20 (27.4%) and 5 (6.9%), respectively ($P = 0.263$; Chi-Cuadrado = 2.664). From 31 (30.1%) patients who went to an institution after discharge, 16 (51.6%) had previous support and 15 (48.4%) didn't have; from 72 (69.9%) with home discharge destination, there were 27 (37.5%) and 45 (62.5%) ($P = 0.18$; Chi-Cuadrado = 1.7748); in one patient information wasn't available. Information of kind of social support that they were receiving before admission was available in 43: 16 (37.2%) patients who were institutionalized after discharge, 1 (6.25%) had caregiver and alarm-system, 2 (12.5%) had alarm-system, 12 (75%) caregiver and 1 (6.25%) caregiver and daily center; and of the 27 (62.8%) who returned at home, there were 4 (14.8%), 4 (14.8%), 19 (70.4%) and 0 (0%) ($P = 0.49$; Chi-Cuadrado = 2.3897). The mean values of the length of hospital stay in patients who were institutionalized after discharge versus those who returned at home were: 64.4 ± 23.9 versus 50.3 ± 17.5 ($P = 0.0012$).

Conclusions.– The previous social parameters weren't statistically different between the patients who returned at home and those who went to an institution. The 31.7% of patients aged over 90 lived alone prior to admission hospital. Length of hospital stay was higher in patients with long-term care institution post-discharge destination, than in those who returned home.

PC-354

Maintaining of functional status of patients admitted to a sub-acute geriatric unit after 3 months

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Objective.– To describe the functional outcome and mortality at 3 months after discharge from a sub-acute geriatrics unit (USGA) as their hospital admission profile.

Material and methods.– We conducted a telephone follow-up three months after discharge of patients admitted to a geriatric sub-acute unit during 2.5 months. We studied their demographics (age and sex), lengths, services of origin, primary diagnosis and patient profile (medical / functional / social) and functional data (Barthel Index and FAC baseline, at admission, discharge and 3 months later), readmission and death.

Results.– *n*: 120; males: 54.2%, mean age: 83.3 years, mean stay 15.5 days in USGA. Hospital departments where they came more frequently were Internal Medicine and Geriatrics. Principal diagnosis: respiratory infection (20%), chronic heart failure (18.3%) urinary infection (13.3%) COPD exacerbation (10.8%). Mean baseline Barthel, 57.31, admission 28.39, at discharge 44.74, at 3 months 49.44. Basal medium FAC 3 at admission 1.17, the highest 2.43, at 3 months 2.57. Twenty percent of patient died at 3 months. Perfil medical patients: 88.3%, with mean baseline Barthel, 54.78, admission 28.54, at discharge 43.19, at 3 months 47.85 and FAC basal medium 2.29, the entry 1, 21, at discharge 2.32, at 3 months2.41. Exitus 20.8%. Functional profile of patients with 46.7%, with mean baseline Barthel, 64.24, admission 22.35, at discharge 45.34, at 3 months53.89 and FAC basal medium 3.52, at admission 0.77, at discharge 2.56, at 3 months 3.04. Exitus 17.9%. Patients with 11.7% social profile, with only 1 isolate social profile. Exitus 21.4%.

Conclusions.– This study aims at the persistence of functional improvement obtained in our USGA in all patients, regardless of their income profile. Functional gain is greater in patients with functional profile. Death rate at 3 months was around 20% in any profile patient.

PC-355

Efficacy and efficiency of a rehabilitation program according to medical diagnosis in very elderly patients

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Aim.– To evaluate the efficacy and efficiency of a rehabilitation program in very elderly patients according to the medical diagnosis.

Patients and methods.– Medical diagnosis (neurological, cardiorespiratory, fracture, vascular and others), Barthel index before admission (BBA), at admission (BA) and at discharge (BD), and length of hospital stay (days) were registered. The efficacy of the rehabilitation program was evaluated by means of the functional improvement (FI) (BD-BA), and the corrected Heinemann index (CHI), which express in percentage the amount of the FI, respect to the previous functional decline ([BD-BA]/[BBA-BA] x 100). The efficiency index (EI) was used to analyze the relationship between FI and the length of stay ([BD-BA]/days. According by other authors, $FI > 20$ points; $CHI > 35\%$ and $EI > 0.5$; have been considered adequate results of the rehabilitation process.

Results.– One hundred and twenty-eight patients were registered [100 (78.1%) women] with a mean age of 92.2 ± 2.2 years old. The efficacy and efficiency of a rehabilitation program were evaluated in 118 patients. The mean of evaluated parameters of efficacy and efficiency according to medical diagnosis were: functional improvement: neurological ($n = 22$): 16.4 ± 23.0; cardiorespiratory ($n = 11$): 21.2 ± 17.8; fracture ($n = 70$)**: 33.9 ± 17.7; vascular ($n = 3$): 24.3 ± 21.2; others ($n = 12$): 24.9 ± 29.7 ($P = 0.007$) (**statistically significant difference between neurological versus fracture); corrected Heinemann index: 27.8 ± 33.8**; 58.8 ± 56.1**; 58.8 ± 30.5**; 25.0 ± 25.0; 64.1 ± 72.5** [$P = 0.028$]) (**statistically significant difference between: neurological versus cardiorespiratory, fracture and others); efficiency index: 0.3 ± 0.4**; 0.6 ± 0.7**; 0.6 ± 0.5; 0.3 ± 0.3; 0.6 ± 0.7 ($P = 0.12$) (**statistically significant differences between: neurological versus fracture), respectively.

Conclusions.– Very elderly patients with a neurological diagnosis at admission had worst parameters of efficacy and efficiency of a rehabilitation program than the others. Patients with cardiorespiratory, fracture, vascular and others diagnosis had adequate mean score values of efficacy. Patients with cardiorespiratory, fracture and others diagnosis had adequate mean score values of efficiency.

PC-356

Via senetutis

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Objectives.– The aim of this study is to evaluate a fast track from ambulance to a geriatric unit for elderly with acute illness. Further to compare with a control group consisting of patients who were hospitalised after assessment at the emergency room. The purpose is to avoid moving elderly patients between different care units within the hospital.

Methods.– The method of assessment used in the fast track is METTS (Medical Emergency Triage and Treatment System). The inclusion criteria is over 80 years of age, green triage according to MEETS with one exception: saturation down to 90% is accepted. Green triage means vital parameters as follows: alert, saturation:

90–95% without oxygen, normal respiration, pulse: 50–150, temperature: 35–38.5 degrees C, no alarm symptoms. Ambulance nurse is phoning senior physician in charge for decision about hospitalisation.
Results.– The fast track from ambulance to geriatric care unit was introduced on February 15th 2010. After one year: 120 patients. Seventy-nine in the control group. Middle age is 88 years old in both groups. Gender distribution: about 60% women and 40% men. Cause of admission (fast track): 35% general weakness, 13% fall at home, 8% dyspnoea, 6.5% confusion, 6.5% vertigo. The ambulance nurse is spending mean 19 minutes extra with the patient. Time to doctor was median 42 minutes (fast track) and 147 minutes (Emergency Room). Total time at the Emergency Room was mean 312 minutes. Totally the effect of this fast track is 5.5 hours earlier to the hospital bed.
Conclusions.– It is possible to admit older frail patients directly from ambulance to a geriatric unit. Time to doctors' assessment can be reduced with 1 hours and time to hospital admission with 5 hours. The fast track is an important improvement, with a large value for the elderly, while maintaining medical safety. We can already conclude that the fast track to a geriatric unit will be a future important part of the emergency medical service, to meet the need of the elderly.

Neurologic, psychiatric and related disorders 2/*Trastornos neurológicos, psiquiátricos y relacionados 2*

PC-357

Aging in patients with posttraumatic stress disorder

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Introduction.– Post-Traumatic Stress Disorder (PTSD) develops after exposure to particularly traumatic events. Its occurrence depends on the nature and intensity of the stressor and susceptibility of the exposed person. The present study was carried out to find out whether PTSD, resulting from deportation to Siberia in the patients' childhood (from 1940 to 1946), has any association on the physical disability, cognition function impairment and depression of these persons in advanced age.
Methods.– Eighty patients with PTSD and 70 subjects without PTSD followed up in primary care setting were enrolled in the study. PTSD was diagnosed according to the DSM-IV criteria. All patients were subject to a standardized interview including demographic data, Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), modified Mini-Mental State Examination (MMSE), Geriatric Depression Scale (GDS) questionnaires. The results were compared applying *t*-test and Chi^2 test.
Results.–:

Parameter	PTSD (+) $n = 80$	PTSD (−) $n = 70$
Age (years)	69.3 ± 5.9	70.8 ± 4.9
Men (%)	50.0	50.0
Modified MMSE		
Mean ± SD (pts)	25.6 ± 3.7	26.8 ± 2.0
Normal (%)	37.5	34.3
Mild cognitive impairment (%)	38.8***	62.9
Dementia (%)	23.8***	2.9
GDS		
Mean ± SD (%)	10.9 ± 3.5**	4.43 ± 2.8
No depression (%)	11.3***	68.6
Mild depression (%)	25.0	30.0
Severe depression (%)	63.8***	1.4
ADL		
Mean ± SD (pts)	5.12 ± 1.23	5.94 ± 0.2
Normal (%)	78.8***	100
Mild disability (%)	17.5***	0
Severe disability (%)	3.8***	0
IADL mean ± SD (pts)	21.6 ± 3.96*	26.2 ± 1.33

*$P < 0.05$, ***$P < 0.001$.

Conclusions.– Several-year long deportation in childhood was associated with severe trauma and development of PTSD. Cognitive function impairment, higher frequency of depression and physical disability were found in the group of former deportees compared to the group of persons without history of such a traumatic experience.

PC-358

Effectiveness study of combined treatment in dementia patients

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Aim.– To describe cognitive, functional and behavioral effectiveness of combined treatment (acetylcholinesterase inhibitors [AChEI] + Memantine) in patients with dementia.
Methods.– Prospective study including patients with Dementia (Alzheimeŕs disease [AD] and Vascular Dementia [VD]). We collected data about demographic variables (age, sex and educational level), Global Deterioration Scale (GDS), Minimental State Examination, Logical Memory WMS-III, Boston Naming Test, Semantic and phonetic fluency, digit span, ideomotor and Clock Drawing Test, Katz, Lawton and Neuropsychiatric Inventory (NPI). We considered three evaluations: 9 months before combination, time when Memantine is added and 9 months after. Statistical Analysis: SPSS 17.0.
Results.– *n*: 74 patients. Mean age: 80 years (63–90). Sixty-five percent female. Educational level: 8 years. GDS: 5 when Memantine was added. Nine months after memantine was introduced, improvement was found in the following items: semantic fluency (−1.27 to 0.04), forward digit span (−0.4 to 0.2), backward digit span (−0.49 to 0.14) and Clock Test (−1.51 to −0.87). The caregivers referred subjective improvements in the communication abilities after 9 months of memantine was introduced.
Conclusions.–:
– the combined treatment seems to improve attention and verbal fluency in patients with dementia (AD and VD);
– the combined therapy involves a lesser rate of worsening in verbal fluency and working memory;
– the other items previously described, included functional and cognitive patterns, have shown stability in the dementia progression.

PC-359

Blood samples patterns in MCI. A 5-years follow-up study

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Aim.– To describe the first visit blood samples patterns in patients with mild cognitive impairments (MCI) with 5 years follow-up.
Methods.– Descriptive and retrospective study of patients with MCI (Petersen criteria) followed in Memory Geriatric Unit. We collected demographic variables (age, gender and level of education). The

data was collected along 5 years, with assessments every 6 months. The blood samples included: haemoglobin, leukocyte, platelets, glicated haemoglobin, ferrytine, TSH, T4, Folic acid, B 12 vitamin, creatinine, cholesterol, HDL and LDL cholesterol, proteins, albumin and sodium and potassium level. Statistical analysis SPSS17.0.
Results.– $n = 29$ patients. Mean age: 79 (SD 5). Educational Level average: 8 years. Seventy-nine percent female. GDS: 3. Progression ratio to dementia at year 5: 13.8%. Hb 14 mg/dl, leukocytes 5500, platelets 180 000, Glicated-Hb 6.26, ferrytine 98.40, TSH 1.59, T4 9.96, folic acid 10.11, B12 vitamin 458.87, creatinine 0.99, cholesterol 214.78, HDL 63.13, LDL 121, proteins 7.11, albumin 4.29, sodium 139.95, potassium 3.7.
Conclusion.–:
– the complete blood counts were normal in all the patients with MCI included in our samples;
– except for the HDL cholesterol, the biochemistry values were in the normal range;
– finally, no abnormal rates were found when folic acid, B 12 vitamin and tiroid parameters were analysed.

PC-360

Virginia Henderson model application in patients with Alzheimer partially institutionalized

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Objective.– To introduce a theoretical model of nursing to support an individualized assessment to provide us collect data from patients with Alzheimer type dementia.
Method.– A longitudinal descriptive study whose sample consisted of 16 individuals diagnosed with dementia who were institutionalized part in specialized centers in Alzheimer type dementia. We reviewed six models of nursing, of which two were selected: the model of the 14 human needs of Virginia Henderson, and the model of Marjory Gordon's functional patterns. The sample was divided into two and each group was given a different pricing model for a period of 6 months.
Results.– The "human needs model" of Virginia Henderson identified an average of 5 nursing diagnoses, with 3 goals and 10 interventions, which were resolved with an average of 3 real problems / potential during the period specified. While in the Marjory Gordon model, we identified an average of 6 nursing diagnoses, with 4 goals and 12 interventions, which were resolved with an average of 2 real problems/potential over the period set.
Conclusions.– The model of V. Henderson in relation to the model M. Gordon best served by real and potential problems of elderly patients with dementia in day care center of our study.

PC-361

Dementia in the geriatric hospital island of Lanzarote. Factor of poor prognosis?

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Objectives.– To assess whether patients admitted last year in our center with dementia had worse prognosis, social (income residential units or long stay) and functional.
Material and methods.– Patients admitted to the acute unit of HIL geriatric service. Demented patients compared with those who are not, in their reason for admission, origin, length of stay, half way to stay, destination, functional status at admission and discharge.
Results.– No dementia vs. Dementia: total cases 160/151, women70/52%, mean age 83.7/78.8, prior Barthel 40/71, Barthel at admission 15/38, discharge Barthel 33/65. The source for dementia patients is mostly from emergency department 48.7/41.7%, home 9.3/12.5%, medical consultation 1.8/5.3%, General Hospital 24.3/30.4%, Hospital Insular14.3/3.31%, others 1.25/6.6%, and the difference is significant (DS). Destination: Home 33.7/44.3%; exitus 33.8/29.1% Hospital Insular 11.2/3.9%, General Hospital 0.62/4.6%, Hospital Day13.7/15.2%, others 8.7/2.65% no significant difference. Reason for admission is acute disease in the insane 76.2/51.6%, while predominantly palliative 2.5/16.5%, and rehabilitation15.6/27.8% in non-demented; without support 1.8/0.6%, discharge and other 3.7/1.9% (DS). Geriatric syndromes that affect are pressure ulcers 8.1/1.3%, falls 28.1/20.5%, fecal impaction 27.5/8.6%and delirium 18.7/7.9% with a statistically significant difference.
Conclusions.– As expected the average age is higher in the demented and are mostly women. Despite a worse functional status at admission and functional recovery is similar in both groups possibly because of the rehabilitation effort of the service. The survival, length of stay, destination on discharge and the social situation is similar possibly because patients already have that situation resolved having good family support or previously living in the institution.

PC-362

Factors associated with ADL change in dementia patients in geriatric hospitals – A 6-months prospective study

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Background.– Disabled activities of daily living (ADLs) of the elderly people are related to decreased quality of life and death and are one of the clinically important issues. Little have been studied about various characteristics and risk factors for decrease of ADLs among the elderly inpatients in long-term care hospitals in Korea.
Method.– Demented elderly inpatients admitted in three long-term care hospitals located in three cities, Korea were surveyed for their demographic and other characteristics and associated factors for ADL decline after six-month follow-ups.
Results.– The study consisted of a longitudinal analysis of 163 people excluding 38 droPC-outs. On average, they were 79.4, 7.6 years old and 67.5% were female. Concerning their characteristics, 63.3% were with Alzheimer type dementia, 36.8% went to only primary school, 73.0% were widowed, and 38.7% had been admitted in the hospitals less than one year. MMSE score was 14.1, 6.5 and clinical dementia rating (CDR) was 1.9, 0.9. 8.6% were bed-ridden, 59.5% and 64.6% had ever experienced fecal and urinary incontinence, respectively. All the ADLs declined after 6-month follow-up and significantly associated factors were low MMSE scores, fecal incontinence and co-existence of fecal and urinary incontinence.
Conclusion.– Low K-MMSE scores, fecal incontinence and co-existence of fecal and urinary incontinence were associated factors for ADL declines after 6 month among demented elderly inpatients in long-term care hospitals located in three cities in Korea.

PC-363

Detecting delirium, subsyndromal delirium and quantification of its severity in acute care geriatric departments

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Introduction.– Delirium is one of the most frequent complications in elderly persons. It is an important signal of quality of care because it is common and frequently of iatrogenic origin. Usually the diagnosis is a dichotomy, but recent studies appear to show that subsyndromal delirium (SSD) and the categorization of this syndrome is also of a high diagnostic and prognostic value.
Objectives.– To determine the prevalence of delirium, SSD, delirium severity and to determine risk factors. The prognostic significance of SSD will be evaluated subsequently.
Patients and methods.– We performed a transversal cohort study in 85 patients admitted to 4 tertiary teaching hospitals. The primary outcomes was delirium and SSD prevalence at the transversal point of study. Diagnosis of delirium were assessed using the Confusional Assessment Method (CAM). SSD was defined by not meeting CAM algorithm for definitive delirium, but with at least one of the criteria. Delirium severity was measured with the DRS-R-98 instrument. Clinical interviewers conducted structured interviews with the patients, families and nurses. The baseline evaluation completed included a complete geriatric evaluation. The information was reviewed with computerized clinical history records. The comorbidity was assessed by the Cumulative Illness Rating Scale-Geriatric (CIRS-G). Statistical tests were deemed significant if the two-sided PC-value was less than 0.05.
Results.– There were 85 patients (43.5% men). The mean (SD) age was 86.76 (6) years. The average CIRS was 24.1 (6.9). Mean Barthel index was 60.9 (32) and Lawton 1.7 (2.3). These 85 patients were classified into three mutually exclusive groups. Forty-five (52.9%) met the full CAM criteria for delirium. Nineteen (22.4%) met the criteria for prevalent subsyndromal delirium, and 21 (24.7%) had no CAM criteria. The hypoactive motoric subtype was most common (40.8%), followed by mixed (36.73%) and purely hyperactive delirium (22.45%). The mean DRS-R-98 was 13.22 (8.3). Low Barthel Index, previous diagnosis of delirium and cognitive level were significant independent variables associated with delirium in the logistic regression analysis.
Conclusions.– Delirium and subsyndromal delirium are frequent in geriatric hospitalized patients. They probably are part of a disease spectrum. Low Barthel, previous diagnosis of delirium and MMSE are associated.

PC-364

The role of bilirubin in the plasma as biomarker in the detection of Alzheimer's disease

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Introduction.– It has been suggested that oxidative stress plays a key role in the pathogenesis of Alzheimer disease (AD). The aim of this study was to validate the plasma level of the antioxidant bilirubin as biomarker, first by testing whether it discriminates between AD and healthy controls. Then we tested the predictive value of the bilirubin plasma level for the cognitive function in AD patients.
Method.– A retrospective, cross-sectional study. The plasma total bilirubin concentrations of patients with probable AD were collected form the Alzheimer Centre laboratory database and compared with healthy controls. The concentrations were trichotomized into three levels: level 1 (0–10 umol/l), level 2 (11–20 umol/l) and level 3 ($>$ 20 umol/l), and the distribution of AD over these levels was tested. Furthermore, we assessed the correlation between bilirubin concentrations and cognitive functions of AD patients, by using the Cambridge Cognitive Examination (CAMCOG) scores, which includes the Mini-Mental State Examination (MMSE) test.
Results.– We included 23 patients with probable AD and 31 healthy controls. Only minor non-significant differences were found in the plasma total bilirubin concentrations between the two groups (Table 1). AD patients with a bilirubin concentration of 10 umol/l or lower, scored worse on the CAMCOG and MMSE, than AD patients with a bilirubin value above 10 umol/l ($P < 0.01$).
Conclusions.– In this study, bilirubin in the plasma has not shown to be a useful biomarker for the detection of AD. Furthermore, the relation between plasma bilirubin levels and cognitive function in AD patients has not been established. However, this is the first small study, and the data warrant a further prospective studies to investigate whether oxidative capacity of plasma bilirubin may be a useful biomarker in the detection of AD, and consequently could contribute to early diagnosis and timely treatment of AD
.Table 1.

	AD ($n = 23$)	Controls ($n = 31$)
Plasma total bilirubin		
Level 1 (0–10 umol/l)	16	20
Level 2 (11–20 umol/l)	6	11
Level 3 ($>$ 20 umol/l)	1	0
Total	23	31

PC-365

Cognitive and functional patterns in MCI. A 5-years follow-up study

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Aim.– To describe the first visit cognitive and functional patterns in patients with mild cognitive impairments (MCI) with 5 years follow up.
Methods.– Descriptive and retrospective study of patients with MCI (Petersen criteria) followed in Memory Geriatric Unit. The data was collected along 5 years, with assessments every 6 months. The tests applied included functional and cognitive features as follows: KATZ index, Lawton index, Mini-Mental State Examination by Folstein (MMSE), Logical Memory I and II WMS-III; Stroop Test, Abbreviated Boston Naming Test, Semantic and Phonetic fluency, Digit Span, Cards from BADS. Statistical analysis SPSS17.0.
Results.– $n = 29$ patients. Mean age: 79 (SD 5). Educational Level average: 8 years. Seventy-nine percent female. GDS: 3. Progression ratio to dementia at year 5: 13.8%. Functional status: Katz A 58.6% and 37.9%. Lawton ≥ 7 in most of the patients. Cognitive assessment: MMSE: 26.17; Logical Memory I: 12.64; Logical Memory II: 9.39; Stroop Test: −8.9; BNT: 27.18; Phonetic Fluency: 6.6; Semantic Fluency: 11.57; Digit Span forward: 4.32; Digit Span backward: 3.25; Cards: 1.83.
Conclusion.–:
– patients with MCI followed during 5 years have shown a disexecutive deficit related to: selective attention, working memory and verbal fluency;

– patients with MCI with a 5-years follow-up have shown a deficit in the delayed recall of episodic memory;
– our progression ratio to dementia (13.8%) has been described previously in several studies.

PC-366

An inflammatory marker for geriatric depression: high sensitive C-reactive protein

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Introduction.– Recently, inflammation has been recognized as contributing to the pathogenesis of depression even in medically healthy individuals. Elevated plasma cytokines and other pro-inflammatory markers have been determined in major depressive disorder and it has been suggested that activation of inflammatory process increases the risk of depression. However, it is currently not known whether the inflammatory changes are proper to any specific subgroup of depression. In this study it was aimed to evaluate the interaction of high sensitive C-reactive protein (hsCRP) and other inflammatory markers with geriatric depression.
Method.– Patients admitted to geriatric medicine outpatient clinic for any reason underwent comprehensive geriatric assessment. After performing Yesavage Geriatric Depression scale and mood assessment with interdisciplinary geriatric medicine team including a psychologist, patients were grouped in geriatric depression and control groups. Conditions that can cause acute phase reaction which were acute and chronic infection, malignancies, acute trauma, and collagen tissue diseases were excluded. hsCRP, C-reactive protein (CRP), albumin, ferritin levels, white blood cell counts, and erythrocyte sedimentation rate (ESR) were analyzed.
Results.– Total number of 80 depression patients and 84 controls were analyzed. Mean age of the total study population was 75.7 ± 6.4 and 116 (70.7%) were female. Age and gender were not different between groups. hsCRP, CRP, ESR and WBC were significantly higher in the geriatric depression group (hsCRP: 4.1 [0.3–27.2] vs. 3.3 [0.3–24.2], $P = 0.002$; CRP: 0.5 [0.1–3.3] vs. 0.3 [0.1–2.4], $P < 0.001$; ESR: 27 [2–69] vs. 22 [3–59], $P = 0.011$; WBC: 7221 ± 1936 vs. 6396 ± 1512, $P = 0.003$). Other analyzed acute phase reactants, which were albumin and ferritin, were similar between groups.
Discussion.– The results of this study support the hypothesis regarding the role of inflammatory activity in the pathophysiology of depression. Elevated hsCRP may be a risk factor for geriatric depression.

PC-367

SveDem: The national Swedish quality registry on dementia disorders. A useful tool to follow quality indicators of dementia care

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Introduction.– In Sweden, 150 000 individuals suffer from dementia. To achieve a dementia care of similar and high quality in the country, a national quality registry, SveDem, was initiated in 2007 (www.svedem.se).
Methods.– Patients with newly diagnosed dementia disorders are included in this web-based registry and followed yearly. Demographic, diagnostic, treatment and care variables are collected. Moreover, seven quality indicators defined by the National Swedish Guidelines for care and treatment in dementia will be followed using this database.
Results.– More than 13 000 patients are at present registered and more than 5000 have been followed-up. Ninety per cent of the Swedish Memory Clinics have joined, while only 5% of the primary care units are affiliated. The mean age of the patients is 79 years and 59% are women. The median MMSE is 22 points at time for diagnosis. The quality indicators ''Proportion of patients having undergone a basal dementia workup'', i.e. cognitive testing, CT or MRI brain scans, assessment of function and laboratory screening, ''Proportion of mild to moderate Alzheimer (AD) patients treated with antidementia drugs'' and ''Proportion of dementia patients treated with antipsychotics'' can be followed locally, regionally and nationally over time. At present, 80% of the SveDem patients receive a basal dementia workup and 82% of the AD patients are treated with choline esterase inhibitors or memantine, while 7% are on antipsychotics, although there are regional variations.
Conclusions.– At the specialist level, dementia work up and treatment adhere quite well to the National Guidelines, but status at the primary care level is not well known. The future challenge is to increase the implementation of SveDem in the primary care, to be able to reach a basic national standard of dementia care.

PC-368

Psychogeriatric assessment in acute geriatric unit

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Half of hospitalized geriatric patients have psychiatric diseases. This implies greater complexity of care, longer stays, increased mortality, dependency and health care costs. Geriatric psychiatry units improve the diagnosis of this kind of patients.
Objective.– To study the characteristics of the patients valued by a geriatric psychiatry unit while admitted to a geriatric unit of a General Hospital.
Methods.– A cross sectional study. $n = 60$, admitted to a geriatric unit for any reason during 2010–2011. We assessed the requests sent to the geriatric psychiatry unit. Variables analyzed: age, sex, reason for consultation and psychiatric diagnosis.
Results.– $n = 60$ (Women: 76%, men: 24%). Mean age: 82.04 ± 2.89. Main complaint: depression (24%), behavior disorder (22%), adjustment of treatment (15%). Five percent of visits were by confusion and 2% for assessment of competence. Psychosis accounted 30% of demand in patients with dementia. Psychiatric diagnosis: depression (26%), delirium (21%), anxiety (19%). Delirium was the most hypoactive type.
Conclusions.–:
– depression is the principal reason for consultation;
– hypoactive delirium is the most frequent in this population.

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Psychogeriatric assessment in dwelling community elderly

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Objective.– To identify clinical and demographic characteristics of community elderly sent by geriatricians to a specific unit of geriatric psychiatry.

Methods.– Cross-sectional study; $n = 82$. Study period: 2010–2011. Variables analyzed: age, sex, main complaint and final diagnosis made by psychiatrist, previous psychiatric diagnosis and treatment.
Results.– $n = 82$ (women: 68.3%, men: 31.7%). Mean age: 78.9 ± 3.05. Main complaint: depression (40.2%), abnormal behavior (15.8%), anxiety (8.5%), delusions (7.3%), attempted suicide (2.4%). Psychiatric diagnosis: depression (29.2%), Alzheimer's disease (17.0%) (associated with affective disorder [38.3%], behaviour disorder [15.3%], delusions [15.3%] and anxiety [7.3%]). 32.9% had previous diagnosis of depression, nearly 60% of them had no psychiatric follow-up. 90.2% of patients has previous psychiatric treatment: antidepressants (60.9%), benzodiazepines (41.4%), atypical antipsychotic (4.8%).
Conclusions.–:
– affective disorders are the most frequent both in patients with Alzheimer's disease as those without dementia;
– a third of patients diagnosed by depression had never been treated by a psychiatrist;
– most patients have a first therapeutic approach with antidepressants by geriatricians;
– benzodiazepines are still widely used in this population.

PC-370
Delirium and functional decline in elderly hip fracture

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Aim.– To determine whether patients who developed delirium after hip fracture surgery were at risk of functional impartment. Also we want to describe the prevalence of delirium in our sample and to analyze the relationship between the baseline characteristics and discharge of patients and the functional impact of delirium.
Material and methods.– Transversal study. Inclusion criteria: age > 65 years. Patients after hip surgery who were evaluated by the geriatric consultant unit (during 12 months). Barthel Index and Functional Ambulation Classification (FAC) scale determined the functional status; we established that a loss of more than 20-points in Barthel, must be considered as a relevant functional impairment at hospital discharge. Delirium was defined as prolonged time and intensity of confusion, needing treatment. Exclusion criteria: baseline Barthel < 40, moderate-to-severe dementia, complex fracture or other fractures beside the hip fracture. Statistical analyses considered a level of significance $P < 0.05$ (CI95%). SPSS 15.0.
Results.– n: 327. Mean age: 83.9 y.o.; (78% women). Baseline functional status: Barthel: 85.3; FAC: 4.4. The prevalence of delirium was 27.5%. After surgery procedure a decline of 33.5 points in the Barthel scale was observed in all patients; and the delirium cohort had a decline of 4 added points ($P < 0.001$) in this scale. Some baseline characteristics (Parkinson disease, ischemic heart disease and depression) do not show any effect in the prevalence of delirium nor the caused functional impact (P = NS). We described two main delirium-related syndromes in this sample: the association of post-surgery anaemia, hypotension and cardiac congestive heart failure, and constipation plus acute urinary retention with or without urinary infection. The impact of the anaemia-cardiac failure syndrome was higher in the functional impact of de delirium than the constipation or urinary syndrome was ($P < 0.05$).
Conclusions.– The main component of functional decline observed after a hip fracture surgery in the elderly seems to be an intrinsic component. Delirium is a prevalent situation and contributes slightly to an added-functional decline in our sample. Certain preventable syndromes in postoperative period can partially explain the high prevalence of delirium and their subsequent added impairment.

PC-371
Perspectives on sleep disorders of the elderly with chronic insomnia complaint. A qualitative study

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Introduction.– Psychotropic drugs use among elderly people is common (33% of men, 55% of women > 80 years) despite of an adverse risk/benefit balance. Decreasing this inappropriate use is a public health priority and may require patient education.
The objective of our study was to assess the perspectives on sleep and its disorders among elderly people with chronic insomnia complaint and their educational needs.
Method.– Elderly outpatients (age > 75 years) with chronic insomnia complaint (> 3 months) were interviewed using a semi-structured interview procedure. Exclusion criteria were cognitive impairment and severe psychiatric disorder. Interview data were analyzed from transcripts using thematic content analysis. Two investigators analyzed the transcripts independently and then conclusions were confronted. Disagreements were resolved by consensus.
Results.– Seven patients were interviewed (mean age 84 ± 6 years, 3/7 men). They had 6.7 ± 0.6 chronic diseases and 4.5 ± 1.7 daily chronic medications. One was long-term user of benzodiazepine hypnotics, two were occasional users, one had history of long-term use and three were non-users. All patients self-rated the severity of insomnia from moderate to very severe. Whether hypnotic use or not, "good sleep" was defined as: immediate (5/7), continuous (7/7) and well-being-producing (4/7). On the opposite, sleep disorders were defined as difficulties falling asleep (6/7), discontinuous sleep (7/7) and ill-being producer (4/7). The "internal" factors (diseases 6/7, anxiety 6/7, age 5/7), as opposed to "external" factors (noise 3/7, discomfort 3/7), were considered as the main causes for sleep disorders. Perspectives on hypnotics were linked to the overall drug perspectives of each individual. All those interviewed expressed an ambivalence: the patients complain about their sleep in reference to the "good sleep" norm and do not report any adverse effect of the sleep disturbances in reference to the "normal sleep" considering their age or their diseases.
Conclusion.– This study suggests the need to develop an educational program on sleep disorders for the elderly, focused on this ambivalence with motivational counselling.

PC-372
Underdiagnosed and undertreatment dementia among elderly people admitted by acute medical condition: an observational pilot study

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Objective.– The aim of this study is to know prevalence of underdiagnosed and undertreated dementia among elderly people admitted in medical acute medical wards.
Patients and methods.– Elderly patients consecutive admitted from march 1st to may 1st of 2011 were evaluated. Sociodemographic, clinical, functional, and pharmacological variables were included.

Dementia diagnosis was performed using DSM-IV criteria and Resiberg scale. Folstein test and Confusional Assessment Method were accomplished in all patients. In addition, medical visits and hospital admissions were entered. ACOVE-3 criteria and STOPP criteria were used. Statistical analyses were performed using SPSS 19.0 package.
Results.– One hundred and eighty-seven elderly patients (mean age: 82.5 y.; women: 56.7%; APACHE score: 6.7; Charlson index: 2.8; Hospital Admission Risk Profile: 3.5; Delirium: 32.6%) were evaluated. Dementia was presented in 119 (63.6%) patients. Incidence of underdiagnosed dementia was 56.3%, and incidence of undertreated dementia was 87.2%. In the last year, 88.7% of patients had contacted with a health service. Inhibitors of aceticholinesterase was used in 10.7% and memantine 5.9%, respectively. Treatments with anticholinergic effects was prescribed previous admission in 21.4% of patients. ACOVE criteria for dementia was observed in 27.4% of patients, and STOPP criteria for central nervous system was performed in 47.4%.
Conclusions.– Incidence of underdiagnosed and undertreated dementia among elderly people admitted in hospital by medical conditions is very high. Admission to hospital is an opportunity for an accurate diagnosis and also to start an appropriate treatment.

PC-373

Delirium optimization determined health resources?

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Objective.– To determine the differential characteristics of geriatric patients who have delirium during hospitalization for those who do not have.
Material and methods.– Cross-sectional study of patients admitted to Sacred Heart Hospital of Huesca and have delirium at admission in 2010. The analyzed variables included in the MDS: age, sex, usual residence, discharge destination, origin, unit of income (high, medium-stay unit with and without rehabilitation, palliative care unit), functional status (Barthel Index) and cognitive (ECRM and Pfeiffer) prior to admission and discharge, principal diagnosis, comorbidity, falls, polypharmacy and hospitalization. Excel database. Statistical analysis Chi^2 test for qualitative variables and t-test for quantitative.
Results.– A total of 966 patients, 290 (30.1%) had acute delirium during hospitalization. Of this group of patients, mean age 85.04 + 7.6 years, 52.7% women. 38.6% lived at home and 34.1% in nursing homes. Fifty percent came from the emergency room, followed by general hospital in 32.1%. 17.2% measured by high comorbidity I. Charlson > 3. Polypharmacy in 75.2%. 42.4% severe functional impairment (Barthel Index < 40). 40.7% moderately severe prior cognitive impairment. Fifty-three percent admitted to acute ward. Twenty-four percent died in income. Statistical significance was found with sex, delirium aiming higher in men, older age in patients with confusional sd 85.04 versus 82.18 years, usual residence residence 34.1% versus 25.14%, have worse functional status and cognitive before admission and at discharge, 24% higher mortality compared with 14.7% of patients without delirium. Highest average length of stay 22.73 days vs. 20.3 days. Higher admission diagnosis in stroke, hip fracture, infections and exacerbation of COPD.
Conclusions.– Delirium is a condition that worsens the prognosis, increased mortality and institutionalization. Older age, male gender, functional impairment and cognitive advance, plus the presence of neurological disorders, musculoskeletal and infectious, are factors that contribute to the development of this table The confusion generated sd brunt of social and health consequences (increased length of stay, greater institutionalization...), so this syndrome should be assessed to ensure good value for money.

PC-374

The development of a shortlist of risk factors for delirium which can be used by nurses on admission in a general hospital

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Background.– Delirium is a common problem in hospital settings and the prevalence of delirium varies among different hospital inpatient populations (5 to 87%). Identification of predisposing risk factors for delirium is important in the first step for delirium prevention. The role of nurses in establishing if a patient on admission is at risk of developing a delirium is of major importance. Nursing recognition ranges from 26 to 83%. Inouye concluded in 2001 that the risk of underrecognition increased with the number of risk factors present. The goal is to develop a short list of the most important predisposing risk factors for delirium, which can be used by nurses to establish how much a patient is at risk for delirium on admission.
Methods.– The study is a retrospective cohort study, 332 nursing charts (admission interview) of elderly patients (> 65) with the diagnosis of delirium (geriatrician and DSM-IV) were examined on 15 independent associated predisposing risk factors for delirium.
Results.– In total 191 nursing charts of patient with the diagnosis of delirium during hospital admission were screened. One hundred and forty-one charts were incomplete and not useable for screening. No signs or written statements were found of how much a patient is at risk for delirium. Most patients 74.9% were acute admissions, age > 75 years 73.8%, visual and hearing problems 71.7%, more than 2 co-morbidities 68.1%, 5 or more medicines 49.2%, cognitive problems 45.5%, ADL dependent 47.1%, dehydrated 40.3%, 29.8% were institutionalised and 28, 3% had a fracture on admission, alcohol use (>3e dd) 22%, delirium in medical history 10.5%. Not all risk factors were found in all the nursing chart.
Conclusion.– In the nursing interview there is no risk assessment for delirium by nurses. But based on the nursing interview nurses can establish how much a patient is at risk for delirium by using a shortlist of predisposing risk factors for delirium. This shortlist makes it easy for a nurse to do a risk assessment for delirium on admission. This short list must be more validated in another studies.

PC-375

Dementia and dysphasia in an outpatient geriatric department

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Aim.– Analyze characteristics of geriatric outpatient with dementia and dysphasia.
Methods.– Analyze retrospective dementia in the outpatients geriatric department. The characteristics evaluate: age; sex; environment; socials data: marital status, the coexistence, nurmaing type, and social risk measured by shortened Gijón score (SGS), mental status: MiniMental Folstein (MMSE), type dementia and specific treatment cholinesterase inhibitors; functional status by Barthel Index (BI) and Lawton Index (LI), attends of dysphasia and analytical (albumin, cholesterol and lymphocytes) 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 neoplasic.
Results.– Sixty patients were analyzed, 81.67% women. Mean age was 82.22 ± 5.5. The 41.67%% were married, 41.67% widower, 10.63% single. The 10% livedalone with supervision, 35% with partner, 26.67% by progenitor, 21.6% in nursing home, 1.67% rotatory. 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' 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 antecedents and vascular risk factors: 53.33% HTA, 28.33% DM, 31.67%. In 34.2 were dysphasia slight-moderate. The group dysphasia were worse functional status (I Barthel previous 45vs35) and cognitive impairment and geriatric syndromes (sd immobility, incontinence, malnutrition). Biochemical values: albumine < 3.5 mg/dl 42.4% and < 3 mg/dl 32.8%, cholesterol < 160 mg/dl 39.4%. 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 institutionalisation risk (SGS) ($r = 0.9$; $P < 001$).
Conclusions.– Geriatric outpatients needed from a nurse making. Patients had high comorbidity associated to the worse GDS stage. Vascular risk factors, polipharmacy, and worse previous functional status were frequently associated. Moderate-severe dementia presented high social risk of institutionalisation. Most dementias were moderate-severe GDS 4-5. The dysphasia was prevalent to a major disability and geriatric syndromes.

PC-376

Delirium in the hospitalized patient: a Portuguese context

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Introduction.– "Delirium", also known as Acute Confusion (AC), is associated to significant incidence rates and weak outcomes, with great impact in the patient. It is a complex syndrome frequently subdiagnosed by the interdisciplinary team. Due to such problems our purpose in this work is to: translate and validate to Portuguese a scale capable of diagnosing the syndrome; identify the frequency of patients and their characteristics in a university hospital; perform a patient's follow-up one month after the evaluation of the "delirium" episode.
Method.– In this descriptive-exploratory study of quantitative nature, the selected scale was the NeeCham Confusion Scale (NeeCham), translated and validated using the International Society for Pharmacoeconomics and Outcomes Research method. Data collection occurred in two moments: the first was done using a transversal cut, with a non-probabilistic by convenience sample; the second moment is relative to the patients' follow-up.
Results.– High internal consistency (Alpha Cronbach = 0.913), was found in the scale's psychometrics properties. From the 530 patients, 20.5% ($n = 113$) provided evidence of "delirium". The majority of these patients were men (52.3%), had an average of 75 years and were illiterate (40%). From the follow-up we observed that 32.7% from the patients diagnosed with "delirium" died in the hospital, 10.2% were transferred to nursing homes, 19.4% were transferred to elder care institutions, and 17.3% ($n = 17$) returned to their home ("delirium" was observed in four of these patients).
Conclusions.– The *NeeCham* showed to be a good instrument to the "delirium" diagnosis, allowing a quick evaluation of the syndrome, without burden for the patient and health professionals. As so, the *Neecham's* use is an adequate strategy for the reduction of the subdiagnosis rates and, consequently, promotes care focused on these patients' needs.

PC-377

Delirium in patients with hip fracture in hospital universitario de getafe between 2008 and 2010

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Introduction.– Hip fractures are an important cause of morbidity and mortality for elderly people. Delirium is one of the most common complications and it is associated with functional decline, mortality and longer length of hospital stay.
Hypothesis.– Patients who develop delirium during hospitalization after hip fracture have worse functional status, more complications and higher mortality.
Objectives.– We aimed to describe the population of geriatric inpatients who suffered from delirium after a hip fracture.
Methodology.– Medical records of 112 patients over 75 years old who were hospitalized in the trauma department for hip fracture between 2008–2010 were revised and data were analysed with SPSS 17.
Results.– Delirium appears as diagnosis in 27 of the 112 patients, namely, 24.11%. Most of them were women (85.1%), over 90 years old (48.15%), with less of 3 co-morbidities (55.55%), with a previous Barthel index when between 60 and 85 points (36%). The average stay was 10.54 days, with a 48.15% greater than 10 days and an 11.11% under a week and 66.67% of the patients were operated on 5 or fewer days. During hospitalization, it was noted heart failure in 33.33% of them, anaemia that needed transfusion in 66.67%, malnutrition in 76% and vitamin D deficiency in 25%. The 25% of the patients with delirium suffered from functional decline and a 48% had a Barthel index < 60 points at discharge. Mortality was 12% (it was 7.06% without delirium). Significant statistical differences were not found between subjects with and without delirium.
Conclusions.– A high proportion of patients with delirium suffered from malnutrition, severe anemia that required transfusion and to a lesser extent with vitamin D deficiency and heart failure and functional impairment. All this underline the importance of prevention, early diagnosis and treatment of delirium and other complications, nutritional status and comprehensive geriatric assessment aimed at minimizing the deleterious effects on functionality.

PC-378

Alladin project: a technology platform for the assisted living of dementia elderly individuals and their carers

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Introduction.– The great impact on daily life activities of patients suffering from Alzheimer disease, as well as on their relative is well known. Aladdin is a European project funded by European Commission that aims to improve quality of life of patients and their carers through the use of a technologic platform installed at home.

Methods.– A randomised controlled trial has been started since 9th May 2011 with 60 participants divided in two groups of 30 controls and 30 cases, spread among 3 pilot sites in Greece, England and Catalunya (10 + 10 participants). The main objective is to improve quality of life and secondary outcomes are delaying nursing home admission and detecting behaviours disorders and burden of carers. Mild to moderate dementia reaching MMSE > 9 and Barthel index > 35 has been used as inclusion criteria. Intervention has begun with monitoring of vital signs, register of physical activity and the assessment of behaviour disorders following the Memory and Behaviour Checklist, as well as Zarit scale. The technologic platform will allow patients perform cognitive activities and the monitoring and assessment by the specialised team along 6 months. Impact on quality of life, clinical impact and user satisfaction are items registered as well.
Conclusions.– Thanks to the changes searched by this tool in the assessment and monitoring of dementia patients and their carers, quality of life and burden of the carers are outcomes expected to improve.

PC-379

Haemoglobin level and cognitive function in Korean hospitalized elderly patients

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Keywords: Cognitive function; Mini-mental status; Haemoglobin levels; Anemia
Introduction.– Anemia is a major risk factor for adverse health-related events in elderly people. The aim of this study was to find and evaluate the relationship between anemia and cognitive decline in Korean hospitalized elderly patients.
Methods.– The study was based on the population of 202 elderly patients (over 65 years) discharged from CHA Bundang Medical Center between March 2002 to February 2008. They all underwent a Mini-mental Status Examination-Korean (MMSE-K) at the time of admission to hospital for cognitive function; MMSE-K < 24 defined cognitive impairment. Logistic regressions were performed to evaluate the association between haemoglobin levels and cognitive function.
Results.– Mean age of the population ($n = 202$) was 77.0 years. Patients with cognitive decline showed a lower level of haemoglobin compared to those without cognitive decline (11.5 g/dL vs. 12.4 g/dL, $P < 0.01$). Unadjusted regressions presented a significant and positive association between haemoglobin level and cognitive decline, and also after adjustments for potential confounding factors including age, sex, education level, comorbidity, the significant association was remained (OR 0.761, 95% CI 0.627–0.923).
Conclusions.– Low haemoglobin levels are an independent risk factor for cognitive decline in Korean hospitalized elderly patients.

PC-380

Correlation between cognitive tests and the diagnosis of Alzheimer's disease in a group of autonomous residents

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Aim.– The aim of this study is to find out the prevalence of Alzheimer's disease (AD) and its correlation with various cognitive tests used in our centre.
Methods.– A cross-sectional study carried out in the Residencia San Prudencio in February and March 2011.
Variables studied.– Age, sex and Barthel index.
Cognitive tests.– Folstein's Mini Mental State Examination (MMSE), Clock Drawing test (CDT), Semantic Verbal Fluency Test (animals in one minute) (SVFT), Memory Impairment Screen (MIS) and uni- and bilateral Gesture Imitation Test. The clinical diagnosis of dementia and AD was established according to the DSM IV and NINCDS-ADRDA criteria.
Results.– Sixty-eight residents took part (28 M; 40 F), their average age being 82.9 years (range: 64–101).
Functional state.– Barthel's average score: 91 points (range: 55–100).
Prevalence.– Prevalence of dementia (DSM-IV): 47.7% (IC 95%; 35.4–60%). Prevalence of AD (NINCDS-ADRDA): 46.2% (IC 95%; 33.8–58.5%).
Correlation of the NINCDS-ADRDA and DSM-IV criteria with the cognitive tests.– the correlation is strong with MMSE (Spearman's Rho > 0.7, $P < 0.001$) and MIS (Spearman's Rho > 0.6, $P < 0.001$), moderate with CDT and SVFT (Spearman's Rho 0.4-0.6, $P < 0.001$) and is not significant with the uni- and bilateral Gesture Imitation Test ($P > 0.05$).
Correlation between MMSE and cognitive tests.– strong correlation with MIS and CDT (Spearman's Rho > 0.6, $P < 0.001$) and moderate with SVFT and gesture imitation: (Spearman's Rho 0.4–0.6, $P < 0.001$).
Conclusions.–:
– the correlation between the various cognitive screening tests (MMSE, CDT, SVFT, MIS) is strong with the diagnosis of AD;
– the MMSE test is the screening test that has the highest correlation with the NINCDS-ADRDA and DSM-IV criteria;
– the CDT and MIS test have a high correlation with the Folstein's MiniMentalState examination.

PC-381

Interaction between heparan sulfate proteoglycan 2 locus and Alzheimer's disease: a case-control study

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Introduction.– Proteoglycans are associated with all kinds of amyloid deposits in the human central nervous system. These complex macromolecules, in particular heparan sulphate proteoglycans, have also been implicated in several features of the pathogenesis of Alzheimer's disease (AD), including the genesis of senile plaques, cerebrovascular amyloid, and neurofibrillary tangles. Single nucleotide polymorphisms (SNPs) in the Heparan Sulfate Proteoglycan 2 (HSPG2) gene have been variously suggested to be risk factors for AD. The aim of this study was to verify whether HSPG2 SNPs, rs2229491, rs2229475 and rs3767140, are genetic risk factors for AD and to investigate their interaction with the common APOE polymorphisms.
Methods.– A total of 198 clinically diagnosed AD patients and 172 cognitively intact age-matched controls were included in the study. All patients and subjects included in this study were Caucasians with most individuals at least two or more generation living in Central and Southern Italy. Diagnosis of AD was made according to the National Institute of Neurological and Communicative Disorders and Stroke – Alzheimer's disease and Related Disorders Association Work Group (NINCDS-ADRDA) criteria. All control patients were free of cognitive impairment (MMSE score ≥ 28). The genetic analysis was made by TaqMan® technology. All the statistical analysis were made with the SPSS statistical package version 16.0.2 for Windows.

Results.– A significant under representation of rs2229475 G/A genotype, independent from sex and age, was observed in AD (3.54% vs. 9.30%, $P = 0.030$; OR = 0.357, 95% CI 0.147–0.869). Despite no patients with the A/A genotype were found, a significant difference was observed for the allele A that result underrepresented in AD (1.77% vs. 4.65%, $P = 0.032$; OR = 0.369, 95% CI 0.154–0.884). However, after adjustment for APOE genotype status, this difference became at risk for AD ($P = 0.029$; OR = 3.021, 95% CI 1.118–8.164). The estimation of the three-point haplotypes spanning 46 kb at the HSPG2 locus didn't show any difference between AD patients and controls.
Conclusions.– Further studies on wide samples of AD patients and cognitive intact controls are needed to clarify the role, if any, of the HSPG2 locus in AD.

PC-382

Hearing and vision of nursing-home residents with cognitive decline: pilot study

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Keywords: Vision loss; Hearing loss; Dual sensory impairment; Aging; Older adult
Prevalence of visual and hearing problems increases with age and handicapping vision and hearing loss impact negatively on active aging. Although Galicia is the Spanish region where the percentage of older adults is growing faster, no studies exist with regard to their dual sensory state (vision and hearing).
Objective.– Take into account the demographic horizon for Galicia, we have developed a pilot study to determine the magnitude of sensorial deprivation (vision and hearing loss) among "our" older adults.
Method.– Two different groups of older people were evaluated: nursing-homes residents (201) versus non-residents (182). Both groups aged 60 years and over. Vision screening involved Presenting Visual Acuity measurement for distance and near vision. Tonal Audiometry and Whisper Test were used in the evaluation of hearing capacity. Statistical analysis was carried on with the SPSS 1.7 program.
Results.– 25.3% of non-institutionalised older subjects have hearing loss (Ventry & Weinstein criteria), 11% of them have impaired presenting visual acuity (Presenting Visual Acuity < 0.5; better eye) and near 6% suffer dual sensory loss. Higher percentages of single and combined sensorial impairments were observed among nursing-homes residents.
Conclusions.– Untreated hearing loss is more common than presenting visual acuity impairment among Galician older adults. Single sensorial deprivation is higher among nursing-home residents as well as the prevalence of Dual Sensory Impairment.

PC-383

Sleep disturbances and neurocognitive performance in older adults with mild cognitive impairment of neurodegenerative or vascular profile

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Aims.– The consideration of sleep disturbances as a core non-cognitive symptom of Mild Cognitive Impairment (MCI) has developed a growing scientific interest in demonstrating their association with cognitive deficits. The aim of the study is the identification of presence and prevalence of sleep difficulties, cognitive and functional performance and neuropsychiatric symptoms in MCI patients of neurodegenerative (MCI-n) or vascular (MCI-v) profile.
Methods.– Fifty-eight patients (MCI-n: 30; MCI-v: 28) completed the Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS) and a neuropsychological battery in Hospital Clinico San Carlos' Geriatrics Memory Unit. The main caregiver was interviewed regarding patients' functional status (Katz index, Lawton & Brody scale), Neuropsychiatric symptoms (Neuropsychiatric Inventory; NPI), sleep difficulties (NPI-Sleep) and excessive daytime sleepiness (EDS) via ESS. Studenťs *t*-test was performed for quantitative, Pearsońs χ^2 for categorical variables, and the degree of correlation was calculated through Pearsońs correlation coefficient.
Results.– Groups were equivalent in educational level, sex and age. No statistical differences were found on functional situation, NPI, NPI-Sleep, PSQI and ESS scores between groups, although 40% of MCI-n and 35.7% of MCI-v reported low sleep quality (PSQI > 5). Moreover, higher scores in ESS are associated to higher NPI results. The MCI-n had a better performance in Clock Drawing, Phonological and Category Fluency Tests, while delayed memory performance was positively correlated w PSQI in MCI-v.
Conclusions.– MCI patients do not suffer from EDS symptoms, but they complained of sleep disturbances and low sleep quality, although there are no differences in specific nocturnal sleep covariates between groups. There is a lack of significant functional impairment related to MCI's different etiology, which does not exclude the possibility of clinically significant impairments when compared to controls. Regarding neurocognitive data, MCI-n subjects showed better performance in tests related to frontal lobe functions. Finally, worst sleep quality is unexpectedly associated with better delayed memory performance in MCI-v, possibly due to a compensatory cognitive effort.

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Mild cognitive impairment: are there gender differences in subjectively reported sleep difficulties?

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Aims.– Sleep complaints, in the form of insomnia and daytime drowsiness, are highly prevalent and associated with adverse outcomes among older persons. This work aims to register the sleep difficulties in Mild Cognitive Impairment (MCI), their association with hypnotic drug consumption, future dementia diagnosis and possible differences among men and women.
Methods.– Fifty-eight patients (men: 39.7%; women: 60.3%) completed the Pittsburgh Sleep Quality Index (PSQI) and Epworth Sleepiness Scale (ESS) in Hospital Clinico San Carlos' Geriatrics Memory Unit. The main caregiver was interviewed regarding patients' sleep difficulties and somnolence (NPI-Sleep, ESS-c). The conversion rate was obtained 6 months after the sleep assessment. Student's t-test was performed for quantitative variables, Pearson's χ^2 for categorical, and the degree of correlation was calculated through Pearson's correlation coefficient.

Results.– Groups were equivalent in educational level and age. ESS scores, from the sample as a whole, are within the normal range (ESS < 10) and are positively correlated with the information provided by caregivers. Future dementia diagnosis correlates with higher rates of ESS-c and lower hypnotic drug consumption. Further analysis regarding gender influences indicates that despite the lack of differences in ESS scores in men and women, caregivers report higher patient's excessive daytime sleepiness (EDS), which is statistically significant only in men ($P = 0.002$). Higher rates of future dementia diagnosis are observed in men (40.90%) than in women (15.62%). Moreover, when higher EDS symptoms are present in men, they correlate with a higher conversion rate. The use of hypnotic drugs is significatively higher in women ($P = 0.039$).
Conclusions.– The evaluation of the nature of EDS symptoms is exceedingly important, since they are associated with dementia conversion, especially in men. Even when both genders face sleeping difficulties, there is a higher frequency of hypnotic drug consumption in women. The fact that MCI patients' use of hypnotic drugs is related to lower rates of dementia diagnosis six months after sleep assessment, requires further research to clarify this finding.

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Cognitive domain evolution quantified by screening test after a physical activity program intervention in Alzheimer desease (AD) subjects

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Objetivo.– El propósito del presente estudio fue analizar la evolución de los aspectos cognitivos, a través de la aplicación de diferentes test de screening, de pacientes diagnosticados con Demencia Tipo Alzheimer (*DTA*) que fueron sometidos a un programa de actividad física específico.
Material y método.– Se valoraron 36 sujetos (27 M y 9 H) diagnosticados con *DTA* (grado leve y moderado) distribuidos en un grupo intervención-*GI* (12 M, 6 H, edad: 75.3 ± 5.6 años) y un grupo control-*GC* (15 M, 3H, edad: 79.1 ± 6.5 años). La muestra correspondía a sujetos pertenecientes *Asociación Alzheimer Canarias*. El grupo experimental participó en un programa de intervención de actividad física de 3 meses de duración distribuidos en 5 días a la semana con un total de 60 sesiones de 50 minutos de duración cada una. Las tareas del programa desarrollaron el equilibrio, la coordinación, la movilidad articular, la eficiencia metabólica y el tono muscular. Los test de screening utilizados para evaluar los aspectos cognitivos pre-intervención y pos-intervención fueron el Mini Mental State Examination (MMSE), el CRICHTON que indica nivel de deterioro cognitivo, el Set Test Isaac (STI) de fluencia verbal y el Clock Drawing Test (CDT) o test del dibujo del reloj.
Resultados.– Los resultados obtenidos en el MMSE no presentaron cambios significativos en ninguno de los grupos. Los datos del CRICHTON sólo mostraron diferencias estadísticamente significativas en el*GI* (*GI: $P = 0.022$; $TE = 0.5$*). En STI los cambios significativos correspondieron al *GC* (*$P = 0.027$; $TE = 0.5$*). Por su parte, el CDT apenas presentó cambios. En resumen, podemos ver como se detectaron resultados positivos en algunos sujetos del *GI* en determinados test mientras que la mayoría de los sujetos del *GC* empeoraron en los test utilizados.
Conclusiones.– Los pacientes diagnosticados con *DTA* que participan en un programa de actividad física específico muestran una ligera estabilización de sus capacidades físicas y cognitivas y, por consiguiente, ralentizan el deterioro cognitivo. Entendemos que la participación en programas de actividad física adaptada tienen un efecto protector contra el deterioro cognitivo, permitiendo una mejora de la calidad de vida de los pacientes diagnosticado con *DTA*.

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Physical activity program effects on the functional efficiency of flexors and extensors' knee and ankle in Alzheimer's patients

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Objetivos.– El propósito del presente estudio fue analizar los efectos de un programa de actividad física sobre la eficacia funcional de la musculatura flexora y extensora de la rodilla y el tobillo de pacientes diagnosticados con Enfermedad de Alzheimer (EA).
Método.– Se controlaron 18 pacientes (12 mujeres y 6 hombres) con una edad media de 75.3 años (± 5.6), con enfermedad de Alzheimer (leve o moderado). Las actividades se desarrollaron, durante 3 meses (5 días a la semana con un total de 60 sesiones), en las instalaciones de la *Asociación Alzheimer Canarias*. El procedimiento utilizado fue la Tensiomiografía (*TMG*), analizando la *velocidad de respuesta (Vrn)* de los músculos: extensores (Vasto Lateral – *VL*, Vasto Medial – *VM* y Recto Femoral – *RF*) y flexores (Biceps Femoral – *BF*) de la articulaciones de la rodilla y flexores dorsales (Tibial Anterior – *TA*) y plantares (Gastronemio Lateral – *GL* y Gastronemio Medial – *GM*) de la articulación del tobillo.
Resultados.– Se observó una variación de *Vrn* respecto a los datos que presentaban los sujetos antes de la intervención en los músculos siguientes: mejora en *RF* ($P = 0.000$; $TE = 2.54$ en pierna derecha y$p = 0.000$; $TE = 1.91$ en pierna izquierda); *BF* ($P = 0.000$; $TE = 2.35$ en pierna derecha y $P = 0.001$; $TE = 2.43$ en pierna izquierda); *GM* (GM: $P < 0.013$; $TE = 0.90$ en pierna derecha) y *GL* (*GL*: $P > 0.005$; $TE = 0.85$ en pierna derecha). No se detectaron modificaciones relevantes en *VL, VM* y *TA*.
Conclusiones.– Un programa de ejercicios enfocados al fortalecimiento de la musculatura extensora y flexora de la rodilla, el trabajo de propiocepción, el desarrollo del equilibrio, la coordinación dinámica general, la movilidad articular y la eficiencia metabólica produce un aumento de *Vrn* en *RF*, *BF*, *GL* y *GM*, sin modificaciones en *VL, VM* y *TA*. La *TMG* resultó una herramienta útil, y fiable para evaluar y controlar, en sujetos de edad avanzada, la capacidad funcional de la musculatura flexora y extensora de la rodilla y tobillo mediante la evaluación de la *Velocidad de respuesta muscular (Vrn)*. Su utilización resulta una estrategia especialmente sensible para determinar las pequeñas alteraciones en la calidad de los desplazamientos y la disminución de autonomía de las personas mayores.

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Mixed methods for generating best practice strategies in dementia care: a European project

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Background.– The *Right Time Place Care* (RTPC) is a 7th Framework European project. It comprises six Work Packages (WPs).

Aim.– The general aim is to develop best practice strategies for dementia care throughout Europe, focusing on the transition from formal professional home care to institutional long-term nursing care facilities. Each WP has specific aims: the purpose of WP 2 is to build up a joint terminology, to describe the different health and social systems, and to explore the intersectorial communication in dementia care; WP 3 aims to describe the living and caring situation of persons with dementia and their informal caregivers in the community and at long-term care facilities, and to analyse risk factors of nursing home admission; WP 4 comprises an economical evaluation; WP 5 aims to review the literature existing on best practices for dementia care and to synthesise and interpret the results of all WPs in order to generate recommendations on best practice strategies. WP 1 coordinates the flow of information and WP 6 disseminates the progress and results.
Methods.– Eight countries and several disciplines including nursing scientists, physicians and economists are involved in the project. Qualitative and quantitative research methods are combined. Focus groups are used in WP 2 for exploring intersectorial communication; a quantitative extensive survey is used in WP 3; a systematic literature review is used in WP 5 and a Delphi Method for the generation of recommendations. An advisory board of experts accompanies the study and an overview is kept by WP 1.
Results.– The project is ongoing. The WP3 study protocol, the WP2 description on health and social care systems and the WP5 systematic review have been finalised and prepared for communication with the European Commission and internal use. Final results are expected in summer 2013.
Conclusions.– The combination of different methods is a promising approach for research in the area of dementia. We expect to develop valuable best practice recommendations based on rich information on the potentials how to improve intersectorial communication and arrangement in dementia care in Europe. These will be forwarded to the relevant European decision makers and stakeholders.

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The cognitive impairment induced by the hypothyroidism versus Alzheimer's disease

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Introduction.– Hypothyroidism is a frequent disease in elderly, which clinic manifestations could be atypical comparative with adults. Sometimes the cognitive disorders could dominate the clinic picture, generating confusions with the Alzheimer's disease. In this study we purpose to highlights through a case presentation, the importance of differential diagnosis of Alzheimer's disease with somatic affections, which could determinate cognitive disorders, although the most common cause of dementia is a degenerative process.
Method.– In this study we present a woman at 80 years old, who was brought by her family for a geriatric consult for memory disorders and temporal-spatial disorientation. After the clinical and psyhogeriatrics evaluation which contents: MMSE, GDS scale, Hachinski scale; we suspected an Alzheimer dementia. Applying the criteria National Institute of Neurological and Communicative Diseases and Stroke/Alzheimer's Disease and Related Disorders Association (NINCDS-ADRDA) sustains the diagnosis of probably Alzheimer's disease. The preclinical investigation included: complete blood count, lipid profile, TSH, vitamin B12, HIV, ionogram, glucose, urea, creatinin, SGOT, SGPT, LDH, CK, total protein, ECG, CT brain.
Results.– The tests values were in normal limits, with some exception: TSH = 48.86 mU/L; cholesterol = 295 mg/dL; LDL = 172 mg/dL; triglyceride = 275 mg/dL, brain CT – cerebral atrophy, internal and external hydrocephalus. After the laboratory results obtained, we performed the endocrinological consultation, and we decided to initiate the hormonal replacement therapy.
Conclusion.– The possible correlation between thyroid dysfunction and cognitive disorders, they often remain secondary. Equally important in order to find a positive diagnostic faster, in Alzheimer's disease, is carrying out a thorough differential diagnosis so that patients can quickly benefit from specific medications.

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Death anxiety in nursing homes

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Keywords: Death anxiety; Scale DAS; Nursing homes; Depression; End-of-life care
Introduction.– The old people's environment is surrounded by situations that generate stress and anxiety: morbidity, functional limitation, loneliness, which, in the institutionalized elderly is becoming more evident by a particular social problem. This is currently triggering the latest admission in Nursing Homes.
Objective.– Detecting death anxiety in Nursing Homes.
Material and methods.– Descriptive cross-sectional studies were conducted between April and June 2008 in three different Nursing Homes in Sevilla. The inclusion criteria were: voluntary participation, be over 65 and not present cognitive impairment. "The study was conducted by presenting a questionnaire to the eligible participants consisting of 64 items distributed in the following paragraphs": Death Anxiety Scale – DAS, demographic, geriatric assessment, personal relationships, subjective state of health and frailty criteria with the intention to detect relationship between levels of AAM and parameters collected.
Results.– A total of 253 residents were interviewed 65 (39 women and 26 men), participation rate 0.85, average age: 82.4 years; scale DAS average score of 5.0 (SD = 3.7); 6 2% of respondents showed high levels of DA. From the data collected and analyzed, we find a significant dependency of DA with depression ($P = 0.02$), with loneliness ($P = 0006$) and with functional dependence ($P = 0036$) respectively. We did not find significant dependency of DA with gender, age, frailty or religious/belief.
Conclusions.– The prevalence of Death Anxiety through the DAS scale in the survey population is low and related to depression, loneliness and functional impairment. Most of them are ready for death and they live it without anxiety, although they have fear of suffering symptoms.

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Sex steroid levels and androgenic axis of elderly men with Alzheimer's disease

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Background.– Research suggests that androgens may have neuroprotective effects. Baltimore Longitudinal Study, which included men without dementia, showed that during follow up, men who developed AD had lower free testosterone (FT) levels. There are few studies regarding association of FT levels and cognitive functions and these studies have conflicting results.

Purpose.– We aimed to assess the relationship between cognitive functions and levels of sex steroid hormones in elderly men with or without AD.
Methods.– We enrolled 33 elderly with AD according to DSM-IV criteria (4 severe, 20 moderate, 9 mild) and 33 elderly men without dementia. Mini mental state examination (MMSE) and geriatric depression scale (GDS) scores; prolactine, luteinizing hormone (LH), follicle-stimulating hormone (FSH), sex hormone binding globulin (SHBG), dihydroepiandrosterone-sulphate (DHEA-S), estradiol (E2), progesterone, androstenedion (AS), total testosterone (TT), and free testosterone (FT) levels were assessed. Exclusion criteria were vitamin B12 or folic acid deficiency, hypothyroidism, stage IV or V chronic renal failure (GFR < 30 ml per minute calculated by MDRD formula), liver cirrhosis, intravenous drug abuse, additional central nervous system disease, alcohol abuse, alcohol use within the last month and antiandrogenic drug use.
Results.– Levels of all the hormones tested were similar in AD and control groups. Mean age and GDS scores were higher and creatinine clearance levels estimated with modified MDRD (modification of diet in renal disease) formula were lower in the AD group compared to controls. Cardiovascular disease prevalence was significantly higher in the control group. Ratio of cases with decreased FT levels tended to be higher in the AD group. Among cases with decreased FT levels, mean FSH level and ratio of cases with increased FSH levels were significantly higher in the control group compared to AD group. Although not significant, this finding was also valid for LH levels and ratio of cases with increased LH levels.
Conclusion.– Appropriate gonadotropin response to decreased FT levels may be influenced in elderly men with AD. This may be due to decreased brain androgen sensitivity of individuals with AD. More comprehensive studies are needed to show the relationship between AD, androgen sensitivity and secondary hypogonadism.

Nutrition 2/*Nutrición 2*

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Physical fitness in elderly - Relationship with regular exercise and nutrition

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Background.– Physical fitness is an important feature for mobility and independent living. We were interested whether nutrition and the age at which regular exercise programs started are of influence on exercise capability in elderly.
Methods.– Based on a bicycle exercise test 100 elderly patients (32 women, 66 men) were assigned to a group with more than 80% of the maximum exercise test capability ($n = 66$, $102.7 \pm 15.0\%$) and a group reaching less than 80% ($n = 34$; $64.6 \pm 12.0\%$). Age did not differ between both groups (79.6 ± 13.7 years, 78.9 ± 12.8 years). Nutrition was evaluated by use of a semi quantitative food questionnaire.
Results.– The actual extent of weekly exercise was 1.59 ± 1.6 hours in the group with a high and 1.83 ± 2.4 hours in those with a low capability. The start of regular exercise was at the age of 41.8 ± 20.4 years in the high capability group and at the age of 58.6 ± 20.7 years in the lower group ($P < 0.0001$). The Body Mass Index (BMI) and percentage of body fat were both lower in patients with a high exercise capability compared to those with a low capability. Patients with a high exercise capability reported about a higher daily calory (1879 cal) and protein intake (80.8 g) compared to patients with a lower capability (1735 cal, 75.2 g).
Conclusion.– The results of our evaluation indicate that an earlier star of regular exercise and a high protein intake both support the maintenance of a high exercise capability at an advanced age.

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Assessing validity of a short food frequency questionnaire on present dietary intake of elderly Icelanders

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Introduction.– Few studies exist on the validity of food frequency questionnaires (FFQs) administered to elderly people. The aim of this study was to assess the validity of a short FFQ on present dietary intake, developed specially for the AGES-Reykjavik Study, which includes 5.764 elderly individuals. Assessing validity of FFQs is essential before they are used to study diet-related disease risk and health outcomes.
Method.– One hundred and twenty eight healthy elderly participants ($74y \pm 5.7$; 58.6% female) answered the AGES-FFQ, and subsequently filled out a 3-day weighed food record. Validity of the AGES-FFQ was assessed by comparing its answers to the dietary data obtained from the weighed food records, using Spearman's rank correlation, cross-classification and a Jonckheere-Terpstra test for trend.
Result.– For men a correlation ≥ 0.4 was found for potatoes, fresh fruits, oatmeal/muesli, candy, dairy products, milk, pure fruit juice, cod liver oil, coffee, tea and sugar consumption ($r = 0.40–0.71$). Lower, but still acceptable correlation was found for consumption of whole-wheat bread, raw vegetables and cakes/cookies ($r = 0.30–0.39$). The highest correlation for women was found for consumption of rye bread, oatmeal/muesli, raw vegetables, candy, dairy products, milk, pure fruit juice, coffee and tea ($r = 0.40–0.61$). Acceptable correlation was also found for fish topping/salad, fresh fruit, blood/liver sausage, whole-wheat bread, cod liver oil and sugar ($r = 0.28–0.37$). Questions on meat, fish meals, cooked vegetables and soft drinks were not found to have a significant correlation to the reference method. Using cross-classification for the two different methods, an average of 42% of subjects were classified into the same group, 73% in same or adjacent group and 4% were grossly misclassified.
Conclusion.– Majority of the question in the AGES-FFQ had an acceptable correlation and can be used to assess consumption of several important foods/food groups, and rank individuals according to their level of intake. Questions with lower or insignificant correlation should not be ruled out or considered invalid without further assessment. The AGES-FFQ on present diet may therefore be used to study the relationship between consumption of several specific foods/food groups and various health related endpoints gathered in the AGES-Reykjavik Study.

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Weight loss associated to health problems and social environment in community dwelling elderly

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Objective.– Weight loss appears to occur frequently in older adults, and has been associated with increased morbidity and mortality.

However, the significance of weight loss per se and the optimal approach to outpatients who are losing weight is not completely understood. This article describes the relationship between weight loss and different health problems and social factors in a population of community dwelling elderly.
Methods.– A review of clinical records was made in a geriatric outpatient service, data of weight loss criteria and related health problems and social facts were documented. A total of 174 patients' records were review.
Results.– A total of 47% patients meet criteria for weight loss, however only a 41.9% of these patients complain of weight loss. Of the patients that lost weight 57% were female, 34.9% single, 13.2% married. Our population was mostly from urban area a 78%. The health problems that we find most related to weight loss were, cerebrovascular disease, cancer, chronic pulmonary disease and poor dentition. Of the 15 patients with cerebrovascular disease 80% meet criteria for weight loss, as well as 63.6% of the 11 patients with cancer. Almost half of the patients had poor dentition and 60.2% of them presented with weight loss. A total of 28 patients had the diagnosis of chronic pulmonary disease and 60.7% meet criteria of weight loss. Diseases that usually are link to weight loss like diabetes mellitus, chronic kidney disease (CKD), hearth failure, mild cognitive impairment and depression sown no significance in our series, on the contrary of the 43 patients with dementia only 48% had weight loss, 15 were in a moderated stage representing a 65.2% of does who lost weight.
Conclusions.– Based on our findings almost half of the patients that lost weight did not complain of it, suggesting that we should encourage the assessment of weight loss. Poor dentition and cerebrovascular disease had in our series the strongest association with weight loss, and diseases that usually are associated like diabetes, CKD, depression and hearth failure did not had a significant relationship.

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Nutritional assessment in elderly institutionalized people: Comparison between body mass index (BMI) and mini nutritional assessment short-form (MNA®-SF)

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Introduction.– Malnutrition is a common problem in long-term care units with prevalence between 20 and 60% depending on the screening tool used for determination. Although the MNA®-SF is recommended in clinical guidelines for nutritional screening in geriatrics, the BMI as a stand-alone measurement of nutritional status is frequently used. The objective of the study was to compare the MNA®-SF to BMI and its identification of nutritional status.
Methods.– The BMI and the MNA®-SF were assessed in 3299 elderly residents by the nursing staff. Nutritional status was classified by the MNA®-SF into 4 categories: 12–14 points: adequate nutritional status; M1: 8–11points: risk of malnutrition without weight loss; M2: 8–11points: risk of malnutrition with weight loss; and M3 $<$ 8 points: malnourished. Using BMI as designated by the ESPEN guidelines, nutritional status was classified as follows: severe malnutrition $<$ 18.5, mild malnutrition 18.5–19.9, risk of malnutrition 20–22, normal weight 22–27, overweight 27–30, obese $>$ 30.
Results.– BMI was measured in all 3299 residents and the MNA®-SF was obtained from 3293 residents. According to BMI criteria, 12% of the residents were at risk of malnutrition 13% were malnourished (BMI $<$ 20), 37% had normal weight, 17% were overweight and 20% were obese. Using the MNA®SF, 51% of the residents were at risk (M1 + M2) and 17% were malnourished (M3). From residents with a BMI $>$ 22, 8% were found in M3, 16% in M2 and 34% in M1. The main reasons for lower MNA®-SF points were weight loss (94%), neurological problems (77%) and reduced food intake (55%).
Conclusion.– A four-fold higher prevalence of at risk residents and a slightly higher prevalence of malnutrition were found when the MNA®-SF was used vs. BMI alone. This higher rate of at risk and malnourished residents is mainly due to weight loss, neurological problems and diminished food intake. The early recognition of weight loss and neurological problems makes the MNA®-SF an especially valuable tool for early detection of both malnourished and at risk residents. Therefore the MNA®-SF is a more suitable tool for early detection of nutritional issues and allows for more timely intervention than the BMI alone.

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Self reported dental state, BMI, and albumin - Is there a relation?

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Introduction.– The purpose of the present study was to compare self reported dental health to BMI (body mass index) and albumin in geriatric patients.
Method.– Ninety-nine patients, 70 women, and 29 men, mean age 84.2 hospitalized in the geriatric department between June and September 2010 were included. The study was made as a questionnaire consisting of eight main questions, each with 2–4 answering possibilities that in general could be answered in monosyllables. All answers were the patient's own experience, and the patient's mouth and teeth were not examined. The questions were read out loud by one of the investigators, and the questionnaire was filled in by the investigator. BMI and albumin were taken from the patient's medical record.
Results.– Seventy-one patients had a denture, 26 patients had natural teeth. 29 patients had partial denture, 42 had full denture, and 2 patients had no natural teeth and no denture. 40.8% mentioned problems with the denture, and 18 (44.1% of these patients) complained that their denture fitted badly. 15% of the patients thought that their dental health was bad the rest thought that their dental health was good (61) or acceptable (22). 77.7% never experienced toothache, 17.2% had toothache now and then, and two patients had constant pain. All patients but one with natural teeth consulted a dentist regularly. There was no statistical difference in albumin or BMI between patients with natural teeth and a denture, even though albumin was slightly higher in patients with natural teeth than in patients with a denture, (P = 0.12 and 0.23, respectively). There was no significant difference between albumin and BMI in patients who reported a bad tooth health and the rest. Generally patients with a bad dental health had a lower BMI and albumin than the rest of the patients though. Patients with a denture were significantly older than patients with natural teeth (P = 0.02).
Conclusion.– Undoubtedly geriatric patients would benefit from access to a dental hygienist to optimize their general comfort and dental hygiene in order to keep their dental state as optimal as possible and thus presumably minimize malnutrition.

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Vitamin B12 deficiency. Prevalence in elderly hospitalized patients

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Objective.– To estimate the prevalence of vitamin B12 deficiency among hospitalized patients in an Internal Medicine Department aged 60 years or more.
Methods.– The sample size was calculated for an estimated prevalence of 15%; 338 patients were needed, finally 350 were selected. Past medical history, diagnosis, and laboratory values including among others haemoglobin, mean corpuscular volume (MCV), vitamin B12 and folic acid were recorded. The prevalence of vitamin B12 deficiency (cobalamin $<$ 200 pmol/L) was calculated. The differences between the group with a normal serum cobalamin level and the one with a low one were analysed using the Chi Square test or the Fishers' exact test for categorical variables, and the Mann Whitney-U test for continuous variables.
Results.– Out of the 350 patients, 200 (57%) were men and 150 (43%) women. The mean age was 78 years (SD: 8.2; range 60 to 100). The prevalence of vitamin B12 deficiency was 12.6% (CI 95% 8.9–14.7) (44 out of 350 patients). 22.6% (CI 95%: 18.1–27.1) of patients had B12 levels between 200 and 300 pmol/L. The folate deficience was present in 11 patients (3.1%) and folate and B12 deficiency coexisted in 4 patients (1.1%). The most prevalent comorbidities were hypertension (70.3%), diabetes (41.4%), dyslipidemia (36.6%), isquemic heart disease (20.9%), dementia (14.6%) and stroke (14.3%) with no differences between the patients with and without B12 deficiency. Patients with cobalamin deficiency were older (81.5 vs. 77.6 years, $P = 0.003$) and had significantly lower levels of haemoglobin (11.6 vs. 10.7 mg/dl, $P = 0.014$). Although 75% had anemia the difference was not significant compared to patients without deficiency (63% $P = 0.12$). Mean MCV, mean stay and mortality did not differ between patients with and without vitamin B12 deficiency.
Conclusions.– Approximately one in 10 hospitalized patients aged 60 or older have a vitamin B12 deficiency, most of the times without typical manifestations. Patients with this deficiency are older and often have anaemia (3 out of 4 case)

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Nutritional status is a predictor of functional recovery after a hip fracture in a geriatric rehabilitation unit

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Background.– Malnutrition is common in elderly hip fracture patients and has been linked to poorer functional recovery.
Objective.– This study investigates the relationship between nutritional status on admission and functional gain obtained at discharge of hip fracture patients admitted in rehabilitation unit of a geriatric nursing home.
Methods.– This is a prospective study of patients with hip fracture admitted to our geriatric unit since August 7 to December 10 to gait rehabilitation. We analyzed age, gender, MNA (Mini Nutritional Assessment) and Barthel index at admission and at discharge and discharge functional gain by the index of Heinemann, Tinetti scale and Functional Ambulation Classification (FAC). It examines the destination on discharge. Exclusion criteria were patients who died during their stay and referred to the hospital.
Results.– During the study period a total of 128 patients are admitted for gait rehabilitation after a femoral fracture. Of these 13 patients (10.15%) died during hospitalization, 3 patients (2.34%) were referred to hospital. Finally, 112 patients were discharged, 77 at home (60.15%) and 35 to a residence (27.34%). The average age of the sample was 83.24 years (68–100). Data we collected at admission were MNA mean: 19.2 (presenting malnutrition 17.8% of patients at risk and being 80.35%), Barthel index mean: 31.08. Discharge assessment: MNA mean: 22.8, Barthel index mean: 70.98, Heinemann index mean: 62.97, Tinetti scale mean: 18.45 and FAC mean 3.47. Discharge patients back to the home had better scores on all variables. MNA scores at admission were significantly correlated to Barthel index ($P = 0.50013$), to Heinemann index ($P = 0.47717$), to FAC ($P = 0.50013$) and Tinetti ($P = 0.31343$) at discharge.
Conclusions.– (1) On admission to our unit after hospital discharge, patients with hip fractures have a poor nutritional status and a high level of dependence. (2) In our unit made the admission MNA behaves as a predictor of functional gain, recovery of the march, and even for discharge in patients who have suffered a hip fracture. (3) Nutritional assessment measured with standardized tools such as MNA has to be included in comprehensive geriatric assessment at admission in rehabilitations units to elderly patients.

PC-398

Assessment and treatment of malnutrition in Dutch geriatric practice: Consensus through a modified Delphi study

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Introduction.– Malnutrition is an important problem in geriatric patients. However, scientific evidence regarding its optimal management is scarce. Our aim was to develop a consensus statement for geriatric hospital practice concerning six elements: 1. Definition of malnutrition, 2. Screening and assessment, 3. Treatment and monitoring, 4. Roles and responsibilities of involved healthcare professionals, 5. Communication and coordination of care between hospital and community healthcare professionals, 6. Quality indicators.
Method.– A modified Delphi study was performed. Eleven geriatricians with special interest in malnutrition participated. A nutritionist supervised the process and analyzed the data. Based on a literature review a list of 204 statements was composed. In four rounds the experts rated the relevance of these statements on a 5-point Likert scale. After the responses were received, means and 95% CIs were calculated. Consensus was defined as a lower 95% confidence limit $\geq$ 4.0.
Results.– The panel reached consensus that malnutrition should be considered a geriatric syndrome and that the nutritional status should be assessed by Comprehensive Geriatric Assessment combined with the Mini Nutritional Assessment. Nutritional therapy should be combined with interventions targeting underlying factors, resulting in a multifaceted intervention. Specific goals for nutritional therapy and ways to achieve them were agreed upon. According to the experts, malnutrition is best managed by a multidisciplinary team (geriatrician, geriatric nurse, dietician and nutrition assistant) with specified roles and responsibilities. At discharge written information about the nutritional problem, treatment plan and goals should be provided to patient, caregiver and community healthcare professionals. The

process of developing quality indicators was started but consensus was not yet reached.
Conclusions.– This study shows that a qualitative study based on a modified Delphi technique can result in a national consensus on essential ingredients for a practical malnutrition guideline for hospitalized and outpatient geriatric patients.

PC-399
Nutritional state of elderly people in outpatient geriatric service, must we take action?

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Objectives.– To describe nutritional state of patients who are treated in outpatient geriatric service. To know nutritional risk factors of them.
Methodology.– Descriptive and prospective study in patients who have been treated in first visit in outpatient Geriatric Service (July 2009–December 2010). Variables: demographics, comorbidity, polypharmacy, nutritional risk factors, Short Portable Mental Status Questionnaire (SPMSQ), Barthel Index (B.I). Body Mass Index (BMI), short Mini Nutritional Assessment test (sMNA) (6 items) and biochemical parameters. SPSS 11.0.
Results.– One hundred and thirty patients, average age: 81.9, 67.7% women. Origin: home 81.5%. Live alone 17.7%. Comorbidity: heart disease 53%, depression 43%, dementia 45.4%, diabetes 29%, cancer 7%. Dysphagia 6.2%, eating disorders 5.4%, hyporexia 33%, bowel movement problems 35.4%. B.I. < 20: 12.3%, B.I. > 60: 23.8%. SPMSQ > 3:?? 49.2%. Autonomy of feeding: 83%. Normal texture: 46.2%, soft 43.8%, crushed 10%. Protein supplements 3.8%, thickeners 3%. Edentulous: 69% (prosthesis 70%). Show evidence of weight loss for 6 months: 35.4%. Influence of mental state on appetite: 33%. BMI < 22: 13.8%, 22–30: 50.8%, > 30: 30%. Polypharmacy (> 6 drugs): 53%, Omeprazole 58.5%, anorectics 61%. Albumin < 3.5: 7.7%, Cholesterol < 150: 12.3%, vitamin B12 < 200: 9.2%. Folic acid < 6: 24.6%. MNA < 7: 24.6%, MNA 7–11: 75.4%. Patients with MNA < 7: have dysphagia ($P = 0.01$), lower cognitive ($P = 0.02$) and functional levels ($P = 0.001$), no autonomy of feeding ($P = 0.001$), hyporexia ($P = 0.005$), low albumin levels ($P = 0.001$). Correspondence between dysphagia and dementia ($P = 0.014$) and B.I. < 20 ($P = 0.001$). Dementia and eating disorders ($P = 0.028$). Mouth disease and B.I. < 22 ($P = 0.042$), and Albumin < 3.5 ($P = 0.025$). Weight loss for 6 months and effects on appetite by mental state ($P = 0.001$), hyporexia and depression ($P = 0.015$).
Conclusions.– (1) Low prevalence of malnutrition on elderly seen in outpatient service, except in those with lower cognitive and functional level in connection with dependence on food intake, presence of dysphagia and eating disorder. (2) The influence of mental state and mouth condition on food intake and recent weight loss requires the treatment of those processes with the objective of preventing malnutrition.

PC-400
Nutritional biological markers in patients with dementia admitted in a geriatric unit

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Objective.– To assess the nutritional status in patients with dementia admitted to the Geriatrics Department of the Hospital Clínico San Carlos (HCSC), Madrid. To determine the values of the nutritional biochemical parameters. To see the values of these parameters in subgroups of severity of dementia. To see if there is any correlation between the severity of dementia and malnutrition from the parameters analyzed. To see if there is a higher rate of mortality among those malnourished. To see the decisions made for the nutritional management of these patients.
Methods.– Descriptive study of the clinical cohort of patients with dementia admitted in the Geriatrics Department of HCSC, Madrid, during one year. Variables: gender, age, severity of dementia, biological nutritional parameters, severity of malnutrition, malnutrition treatment at discharge, death.
Results.– There are a total of 629 discharges, 239 diagnosed with dementia (37.9%). The average age: 85.5 years. Gender: 43.1% male and 56.9% women. Severity of dementia: 27.8% severe stage, 19.5% moderate-severe, 15.1% moderate, 17.1% mild-moderate, 20.5% mild. Prealbumin and albumin coincide to diagnose 63.2% of the patients as malnourished and 17.0% as non-malnourished (Kappa = 0.501; $P = 0.00$). There is a tendency for malnutrition to occur more often (depending on prealbumin) as the severity of the dementia progresses ($P = 0.078$). There is a tendency for severer malnutrition to occur (depending on albumin) as the severity of the dementia progresses ($P = 0.066$). We found a trend to higher mortality among malnourished patients depending on albumin ($P = 0.064$). No therapeutic indication is made to 53.2% of malnourished patients.
Conclusions.– A high percentage of patients admitted to the geriatrics unit have dementia (37.9%). The prevalence of malnutrition among these patients is high, reaching 63.2%. A worsening of nutritional markers is observed as dementia progresses, but without a statistically significant correlation. A high percentage of patients diagnosed with malnutrition do not receive any specific treatment. There is a tendency towards higher mortality among patients with low values in serum levels of albumin.

PC-401
Nutritional status of Dutch older Parkinson patients: Prevalence and associated factors

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Introduction.– Aim of this study was to determine the prevalence of malnutrition and its associated factors in older patients with Parkinson's disease (PD). Up till now, little is known about malnutrition in Dutch PD patients. Furthermore, this is one of the first investigations to study the association between malnutrition and functional, psychological, and social factors besides disease-related factors.
Method.– We prospectively assessed 102 PD outpatients 65 years or older of the Department of Neurology with the Mini Nutritional Assessment (MNA), the Cumulative Illness Rating Scale for Geriatrics, the Council of Nutrition Appetite Questionnaire, the Katz-15, the Parkinson's Disease Dementia Quick Scan and the Geriatric Depression Scale-15. In addition, socio-demographic characteristics and disease specific factors (parts of the Unified Parkinson's Disease Rating Scale and the Non-Motor Symptoms-quest) were investigated.
Results
Of the 102 patients 52.9% was male, mean age was 76.4 ± 6.3 years, mean disease duration 6.4 ± 5.1 years and nobody was institutionalized. The prevalence of (risk of) malnutrition was 22.6% (MNA ≤ 23.5). Poor nutritional status was associated with co-morbidity, polypharmacy, depressive symptoms, cognitive impairment, falls, and loss of

independence with increased use of care (e.g. home-care, informal care, dietician, speech-therapist, physiotherapist). Poor nutritional status was not associated with motor-symptoms (e.g. rigidity, tremor, dyskinesia) or levodopa equivalent dose. Dependency (OR, 0.77, 95%CI, 0.66–0.91; $P = 0.002$) and poor appetite (OR, 0.82; 95%CI, 0.70–0.95; $P = 0.008$) were the most important predictors of a poor nutritional status.

Conclusions.– One in five older Dutch PD patients had a poor nutritional status. Poor nutritional status was associated with geriatric syndromes such functional impairment, cognitive impairment, falls, depression, and care-dependency rather than motor symptoms. Thus, older Parkinson patients with a poor nutritional status can be characterized as "geriatric" patients, which should have implications for their management.

PC-402

Arterial lactate levels are more predictable of in-hospital mortality when stratified by nutritional status in elderly patients with severe sepsis/septic shock who visit the emergency department

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Introduction.– Older people are at risk of malnutrition that adversely affects the outcome of infectious diseases. Our aim was to investigate whether the nutritional status assessment adds prognostic value to arterial lactate levels when predicting mortality risk in emergency department (ED) patients admitted for severe sepsis/septic shock.

Methods.– This was an observational study of elderly patients ($\geq$ 65 years of age) who had serum and arterial blood testing in the ED and were admitted for severe sepsis or septic shock during a 1-year period. The study institution is an urban academic hospital with an approximate 30.000 annual ED census. The endpoint was in-hospital mortality.

Results.– One hundred fifty-eight patients had blood testing in the ED and an admitting diagnosis of severe sepsis or septic shock. The subjects were divided by arterial lactate levels and nutritional status as follows: (1) lactate level less than 4.0 mmol/L and no or minimal malnutrition, (2) lactate level greater than or equal to 4.0 mmol/L and no or minimal malnutrition, (3) lactate level less than 4.0 mmol/L and apparent malnutrition, and (4) lactate level greater than or equal to 4.0 mmol/L and apparent malnutrition. In a logistic regression model, patients with a lactate level greater than or equal to 4.0 mmol/L and apparent malnutrition had an increased risk of in-hospital mortality (odds ratio 10.2; 95% confidence interval 2.9 to 36.7).

Conclusions.– In this cohort, patients with both hyperlactatemia and malnutrition had a higher mortality rate than patients with either of the abnormalities in isolation.

PC-403

Pilot study of the nutritional condition of elderly patients with fracture of femur by the questionnaire MNA

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Aims.– Analyze nutritional condition of population patients with fracture femur valued by Functional Unit interdiscipline Socio-sanitaria Geriatrics (UFIS) by questionnaire MNA.

Patient and method.– Study observational of 34 patients, 75-year-old with fracture of femur admitted in COT's service of hospital the third level. Analyzed variables: age, means days, functional capacity measured by Barthel's index (IB) and Lawton's index (IL), cognitive impairment for Pfeiffer's test (TP), comorbidity by Charlson's index (I Ch), presence polydrugstore, geriatric syndromes, clinical - pathological precedents, mean days and target stay to the discharge. Nutritional evaluation: Mini nutritional Assessment (MNA).

Results.– Thirty-four patients included, 61.7% women. Middle ages of 85.3. Mean days 8.8 days. I of Ch of 2.45. Presence of more 3 geriatric syndromes, 85%. Functional capacity: IL: 2.3 and previous I.B preadmission: 60.3. To the revenue IB: of 24.5 and to the discharge 36.8. Results T. P. of 3 mistakes. Principal clinical - pathological precedents: infection respiratory/pneumoniae: 17 (50%), cardiology 7 (20.5%), infection urinary 4 (11.7%), insuffic. renal sharp 1 (2.9%), other 5 (14.7%). Problems of swallowing in 38.9%. According result MNA: 20 patients (58%) had risk malnutrition (MNA between 17–23.5), 8 patients (23.5%) malnutrition (MNA $<$ 17), 6 patients (17.6%) not risk of malnutrition (MNA $>$ 24). The patients with severe and moderate functional status and severe cognitive impairment were major risk malnutrition or were situated malnutrition ($P < 0.05$). Destinations discharge: geriatric convalescence units 28 (82.3%), return home 3 (8.8%), institutionalisation 2 (5.8%) and exitus 1 (2.9%). Significant differences patients who were presenting worse functional previous situation, risk malnutrition and malnutrition and I deposit in unit convalescence. Good correlation between days of stay and risk of malnutrition.

Conclusion.– High incident patients' with malnutrition or at the risk of malnutrition in elderly geriatric hospitalized population The risk malnutrition associates to functional status dependence, cognitive impairment and comorbidity associate. Due to the discharge prevalence of malnutrition, the status nutritional should fulfil in a routine way the elderly patients who join the hospital to be able to realize, if it proceeds, a suitable nutritional intervention

PC-404

The prevalence of hospital malnutrition in Spanish elderly patients

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Introduction.– Elderly patients are at an increased risk of malnutrition due to physiological changes as well as associated to comorbidities and polymedication. Prevalence of hospital malnutrition (HM) is reported higher in older populations when compared to the general one.

Methods.– PREDyCES® is a transversal, observational, national multicentre study, under clinical practice conditions. It assessed the prevalence of HM by means of the Mini-Nutritional Assessment (MNA®) screening test at admittance and discharge of patients, together with in-hospital stay and economic cost associated to HM. This sub-analysis examines the prevalence of HM and ascribed costs in elderly patients ($\geq$ 70 years old) included in the main study.

Results.– Seven hundred and forty-two elderly patients were included in the analysis, mean age was 78.7 $\pm$ 6 years and 51.6% were females. Mean weight and BMI were 64.8 $\pm$ 15.6 kg and

24.9 ± 5.9, respectively. Upon admittance, 36.5% of patients were at risk of malnutrition (MNA® = 8–11 points) and 20.6% were malnourished (MNA® < 8 points). Prevalence of malnutrition risk (MR) and malnutrition was even higher upon discharge 40.4% and 39.7% respectively). At admittance, the prevalence of either malnutrition or MR was significantly higher in women than in men 60.6% vs. 53.4%; $P < 0.05$) and in urgent vs. programmed admittances (61.8% vs. 40.6% $P < 0.001$). Elderly patients at MR or malnourished had significantly higher age and lower weight, BMI, arm and leg circumferences, albumin levels and lymphocyte count than those not at risk ($P < 0.001$). Upon discharge, average length of stay (LOS) in hospital and costs were significantly higher in malnourished elderly respect to those not malnourished (MNA > 11): 10.5 ± 6.6 days vs. 7.3 ± 4 days; $P < 0.001$ and 7.714 ± 5.654 € vs. 5.233 ± 3.207 €; $P = 0.001$. 74% of patients malnourished or at MR didn't receive any nutritional support.

Conclusions.– 57% of elderly patients admitted into Spanish hospitals are found to be malnourished or at MR. 13% of those not malnourished at admission are found malnourished or at risk at discharge, rising malnutrition/MR figures to 70% of all elderly patients at discharge. Elderly patients with HM have longer LOS in hospital with a higher associated cost than those without nutritional risk.

PC-405

Assessment of the nutritional and functional in patients admitted in a geriatric rehabilitation unit

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Objectives.– To assess change in nutritional status of patient admitted in our unit and to analyze the relationship with functional situation at discharge.

Method.– Prospective observational study of the patients admitted from Dec 15th, 2010 to April 15th, 2011. Data were collected at baseline and at discharge: anthropometric, Mini Nutritional Assessment (MNA), comorbidity, (HTA, DM, dislipemia, stroke, oncology pathology, cognitive impairment and gastrointenstinal pathology), social status and functional status (Barthel), laboratory data (albumin, cholesterol, lymphocytes and proteins), kind of diet (soft-food, shredded, average) type and grams of protein supplement. We excluded patients who died or were discharged in the first month. SPSS 15.0.

Results.– Sixty-seven patients. Mean age: 79.80 ± 9.39DE. Male 58.2%. Length of stay 51 days ±20 DE. Diagnosis at admission: fracture (31.3%), stroke (25%), immobility (13.3%). Comorbidity: HTA (73%), cognitive impairment (35%), DM (29%), stroke (25%), gastrointestinal pathology (25%), active oncology pathology (8%). Functional status: Barthel at admission 32, discharge 51. There is a clear relationship between the improvement of protein values at discharge and the improvement of functional status (Barthel) ($P < 0.001$). Social status: at admission 42% lived alone, at the end of the study 26% were discharged at home with carer. 12% died. Patients who died had lower protein values ($P < 0.001$). Mean MNA 22. Mean weight at admission 64.83 kg ± 18.81 DE and at discharge 60.64 kg ± 24.82 DE. Laboratory data: albumin at admission 2.8, discharge 3; proteins at admission 5.5, discharge 5.9; lymphocytes at admission 1489, discharge 1561; cholesterol at admission 151, discharge 163. Improvement in number of nutritional parameters, but without statistical significance. Patients with better laboratory parameters (albumin, cholesterol, proteins, lymphocytes) at admission ($P \leq 0.001$) improved them at discharge. 49.4% received protein supplements. 29% presented exacerbations. There is a significant relationship between ($P < 0.001$) lower albumin level at admission and exacerbations. Differences have not been found based on diet, supplementation or proteins.

Conclusion.– The gain in the nutritional status (proteins) improves the functional situation (Barthel) at discharge. A better nutritional status (laboratory) at admission improved them at discharge. Patients with lower albumin value at admission have higher probabilities of exacerbations during stay. Protein supplements in our survey have not proved any improvement in the nutritional status.

PC-406

Nutritional and general status at admission to pluripathological hospital unit

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Introduction.– Nutritional status is the situation in which a person is in relation to food intake and physiological adaptations that occur after the entry of nutrients. It is determined through the collection or interpretation of information obtained from dietary studies, biochemical, clinical, anthropometric, or others. The overall assessment by different scales allows us to have information about dependence and possible risks of malnutrition, ulcers and falls.

Description and methods.– Cross-sectional descriptive study of 119 pluripathological patients admitted to convalescence unit in a 3 months period. Nutritional study: weight, height, body mass index (BMI), calf circumference (CC), Mini Nutritional Assessment (MNA) and a blood test. Overall rating: Barthel, Braden and Downton.

Objectives.– Know the nutritional status at admission. Geriatric assessment at admission. Understand changes in weight during the period of income. Determine the most common diet in the hospitalized geriatric patient.

Results.– The sample consisted of 119 patients (56.3% female). Ulcer was present in 26.9% of the admission. Average of measured values: age 81, weight at admission 65.06 kg, weight at discharge 64.52 kg, height 1.62 m, CP 30 cm, 24.74 BMI, MNA 6, 1.53 × 10.9 lymphocytes, albumin 3.15, total cholesterol 171. Average rating scales: Barthel 30, Braden 15, Downton 5.58% of patients take salt-free diet. The patients take diabetic diet in 39% of cases. And a 27% take blender diet.

Conclusions.– Admitted patients lose an average of 0.540 g at discharge, although this loss is not significant. They have an average Barthel indicating severe dependence and an average Downton that alerts us to fall risk. According to average Braden there is low risk of pressure ulcers. The MNA results indicate risk of malnutrition, but they have a BMI within the normal CC. The value of lymphocytes indicates potential malnutrition. Serum albumin and cholesterol values are normal. The blended diet is the most prescribed.

PC-407

Relations between nutritional parameters, fall risk and disability

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Introduction.– When studying nutrition in the elderly, the inappropriate diet that predominates in this population group is

remarkable. A bad nutritional state causes physical weakness that may increase disability and fall risk. One way to quantify fall risk in the elderly is the risk Downton scale (JH Downton, 1993).
Description and methods.– Cross-sectional descriptive study of 119 pluripathologic patients admitted convalescence unit in a 3 months period. Nutritional study: weight, height, body mass index (BMI), calf circumference (CC), Mini Nutritional Assessment (MNA). Fall risk assessment: Downton scale. Disability assessment: Barthel scale and Braden-Bergstrom scale.
Objectives.– Identify a potential relationship between fall risk and nutritional parameters in patients admitted to a convalescent unit.
Results.– The sample consisted of 119 patients (56.3% women) admitted to a medium-stay unit, with an average Barthel 30, Braden 15, and Downton 5. Ulcer was present in 26.9% of the admission. Average of measured values: age 81, weight at admission 65.06 kg, weight at discharge 64.52 kg, height 1.62 m, calf circumference (CC) 30 cm, body mass index (BMI) 24.74, Mini Nutritional Assessment (MNA) 6. Our study performed the nonparametric correlation analysis by Spearman's Rho test with the following statistically significant relationships: the higher the Downton, the greater the age of the patients, they have a lower Braden and Barthel.
Conclusions.– The higher the fall risk, the greater the age, the lower the functional independence and the higher the risk of developing pressure ulcers. There is no relationship between Downton and BMI, or between Downton and the MNA.

PC-408

Influence of nutrition status in hip fracture recovery

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Objective.– Hip fracture is a high prevalence illness in elderly people and is the source of a high disability, morbidity and mortality. In previous studies, elderly patients who were given a diet with increased protein following a fragility fracture were found to have decreased postfracture bone loss and reduced medical complications during their hospital stay. This study wants to evaluate the effect of previous nutritional status in hip fracture recovery.
Methods.– Observational retrospective study.
Results.– We reviewed the clinical records of 87 patients admitted in the Hospital Virgen de la Torre for the recovery program after hip fracture. The mean age was 82.19 years (69–101) and 77.5% were women. We applied the CONUT to assess the nutritional risk and evaluated different outcomes at discharge.

	Without risk and mild risk	Moderate and severe risk	*P*
Number of subjects	64	23	
Age	83.06	86.13	> 0.05
Sex (women)	84.4%	70%	< 0.05
Situation at admission			
Cognitive impairment	36.2%	33.5%	> 0.05
Barthel prior fracture	80.4	76.3	> 0.05
Functional impairment[a]	10.5	19.5	< 0.05
Institutionalization	26%	35%	< 0.05
Length hospital Stay (d)	22.3	36.7	< 0.05

[a] Barthel index prior fracture minus Barthel at discharge.

Conclusions.– Patients with poor score in the nutritional risk assessment have a worse functional recovery and greater hospital stay and institutionalization. Nutritional supplements have demonstrated a significant improvement in these outcomes. However its use in our clinical setting is not formalized. An implement protocol in nutrition is a priority for action in these situations.

PC-409

Nutritional status associated to life space in institutionalized patients

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Objectives.– Nutritional status in the elderly is influence by many factors, mobility its one of them. Life Space refers to the area throughout which an individual moves during a set period of time. This study was designed to assess the nutritional status of institutionalized elderly patients and its association with their life space.
Methods.– Nutritional status and life space diameter was assessed in elderly institutionalized in a nursing home facility in Mexico. The Mini Nutritional Assessment (MNA) and MNA-Short Form were used to determine the nutritional status. Life space diameter was assessed based on the Nursing Home Life-Space Diameter, instrument that included components of frequency and extend of mobility.
Results.– Of the 95 elderly, 64.3% were females, the median age of our population study was 84.2 years old, with the MNA-SF 60% were at risk of undernutrition (≤ 11) and 40% not at risk (12–14). The complete form of MNA show that of those at risk, 11.5% had undernutrition and 48.5% were at risk of undernutrition. All the no risk patients moved within their room and within the unit more than 1 a day, and 81% were independent to do it in their room and 89% in the unit, only 44% moved outside the unit throughout the facility more than 1 a week, and 32% went out of the facility at least weekly. Of the undernutrition elderly, 81% moved within their room and unit more once at day, 72% (room) and 63% (unit) were dependent, 36% never went outside the unit and 66.6% of the facility. Those at risk of undernutrition moved within their room and unit more than once a day, half of them need help, 34% went outside the unit throughout the facility more than once a day, 83% need help to do it, only 16.3% go outside the facility at least weekly, 95% depend on family or other to do it.
Conclusions.– Elderly in our series that are with out risk of undernutrition move more independently and with more frequency outside of the unit, but no difference were sown between the groups fore movement within the room and unit.

PC-410

Performance-based preference for a novel xanthan gum-based thickener among clinicians treating dysphagia patients

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Introduction.– Diet modification is an evidence-based intervention recommended by healthcare professionals (HCPs) as part of dysphagia patient management. Commercial thickening agents are used to decrease the flow rate of liquids, and allow patients more time to initiate airway protection while swallowing. Yet, the various thickening agents commercially available have different performance characteristics with unique implications for product ease of use and acceptance by patients and caregivers. The objective of this study was to investigate the product performance of various commercial thickening agents as judged by HCPs who treat dysphagia patients.

Methods.– Two separate studies were conducted among HCPs involved in the care of dysphagia patients. A novel xanthan gum-based thickener (Resource® Thicken Up Clear, Nestlé) [XANTHAN] was compared with a traditional starch-based thickener (Thick & Easy®, Fresenius Kabi) [STARCH], and a thickener incorporating a blend of starch and gums (Nutilis®, Nutricia) [BLEND]. Four different liquids (water and ice tea, each prepared at 2 different viscosity levels, syrup and custard) were assessed. All liquids were presented in an unbranded and randomized manner to HCPs.
Results.– Among a multidisciplinary group of HCPs ($n = 130$; 50 physicians, 50 nurses, and 30 speech-language therapists), 71%–81% reported preference for the XANTHAN-based thickened product vs. the BLEND. In a separate test (n = 134; 53 speech-language therapists, 51 dieticians, and 30 nurses), 9 out of 10 HCPs reported preference for the XANTHAN- compared to the STARCH-based thickener. The following performance characteristics contributed to product preference: visual appearance, taste, and consistency in mouth. Of the participating clinicians, 96% agreed that the XANTHAN thickener "*will help make patients feel more normal as thickened products look more natural*", and 98% agreed that the XANTHAN thickener "*will help improve patient compliance*".
Conclusions.– HCPs who care for dysphagia patients judged a novel xanthan gum-based thickening agent superior to comparable products incorporating different thickening ingredients. Preference for the XANTHAN-based thickener was attributed to product performance characteristics linked to patient compliance and quality of life.

PC-411
Vitamin D in elderly with fractures

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Introduction.– In the last years it has been published different studies, that are based on meta-analysis, which highlighted the relationship between falls, fractures and vitamin D deficiency. The conclusions of these studies have been included in the guides from several sanitary entities in order to reduce de numbers of these events.
Hypothesis.– Though daylight hours are longer in Spain which should promote adequate blood levels of vitamin D, the results of these studies are also valid in our environment.
Objectives.– We aimed to study this relationship in our environment (we measured vitamin D levels in patients who have suffered a fracture to take appropriate measures to increase Vitamin D levels in blood)
Methodology.– Vitamin D levels have been collected from medical records of patients over 75 years old who were hospitalized in the trauma department for fractures from 2009 to 2010, because vitamin D levels were not registered systematically before because the Ortogeriatric unit was not working yet. Data were analysed data with SPSS 17.
Results.– The sample consisted of 30 patients, of whom 86.7% were women, 30% were between 75–80 years old, 53.3% between 81 and 90 years and 16.7% over 90 years. All of them showed some degree of hypovitaminosis D: 23.3% had a severe deficiency (< 10 ng/mL), 70% deficiency (10–19 ng/mL) and 6.7% insufficiency (20–30 ng/mL). 55.6% of the sample showed a functional deficit and less than 3 comorbid conditions was 33.3%, from 3 to 5 43.3% and over 5 23.4%. Analysis of dependence between variables is statistically not significant.
Conclusions.– The existence of deficiency of vitamin D was confirmed in the study population which depends on neither sex nor age, nor functional status or comorbidity. There should be more studies in the general geriatric population, with or without pathologies, to assess the validity of the reference levels, and if this is confirmed, make an early treatment.

PC-412
Anthropometric measurements and acid folic deficiency in elderly hospitalized patients

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Introduction.– Elderly are a vulnerable group to nutrient deficiencies, particularly folic acid. The frequency of deficiency of this vitamin in the elderly Portuguese is not known, so their study is of the utmost importance. Classical picture of malnutrition in the elderly is one of low body mass and muscle wasting. However, it is now recognized that besides a clinical malnutrition, selective nutrient deficits are much more frequent. So, older people may be able to maintain body weight on a low energy intake, but will be at risk of specific acid folic deficiency.
Methods.– Eighty-four elderly hospital patients (> 65 years old), 38 men and 47 women. We evaluated acid folic measuring and anthropometric measurements. BMI was estimated by dividing weight (kg) by height^2 (m^2). We considered malnourished if their BMI was less than 21.
Results and conclusions.– The average of age was 78.57 ± 7.066 years; the average of folic acid was 8.135 ± 6.209 ng/mL. The average for BMI, arm circumference and waist circumference was 25.88 ± 5.63 kg/m^2, 26.35 ± 4.12 cm, 96.98 ± 17.65, respectively. 12.6% has low levels of acid folic; 9.24% were malnourished. The average body mass index for different age group was within the normal range. However a reduction in the body mass indexes with an increase in age was observed. Looking at the age and sex percentile distributions for arm circumference indicated a trend related to aging. Abdominal circumference was the only measurement, which showed a significant correlation with body weight in this elderly group.
Conclusions.– Micronutrient deficiencies can occur without generalized malnutrition. The lack of association between anthropometric measurements and micronutrient status in this population indicates that screening tools that focus anthropometric measurements may not be useful for identifying those at risk of micronutrient deficiency. The high prevalence of marginal deficiency in this population demonstrates that there is a need for dietary advice about intake of micronutrient supplements for those at risk. Anthropometry is a technique that can easily evaluate status of nutrition; however it is necessary to consider other factors such as elder morbidity, mortality and quality of life to determine threshold values for anthropometric measures in the elderly population.

PC-413
Oral nutritional supplements and quality of life in nursing home residents with malnutrition or at risk

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Introduction.– Oral nutritional supplements (ONS) are regarded an efficient way to improve nutritional status. However, the impact of nutritional interventions on quality of life (QoL), especially in elderly, was seldom investigated; it is unknown if an improved

nutritional status also affects general well-being of aged, often multimorbid and cognitively impaired subjects. This study aimed to investigate the influence of ONS on QoL of nursing home residents with malnutrition or at risk.

Methods.– In a randomized controlled trial, 45 (IG) residents with (risk for) malnutrition received daily 2 × 125 mL ONS (600 kcal total) for 12 weeks and 42 (CG) routine care. QoL was measured at baseline (T1) and after 12 weeks (T2) with QUALIDEM, a dementia-specific questionnaire with 40 questions in nine subscales, rated by nursing staff; a higher score indicates higher QoL (100 max.).

Results.– Seventy-seven residents (87 ± 6y, 91%?) who completed the study were characterized by a high level of functional disabilities, with 44.2% being immobile, 77.6% demented (MMSE < 17p) and 54.5% fully dependent (ADL£30p). The QUALIDEM-subscale ''being busy'' resulted in the lowest QoL-score at baseline, significantly decreased in CG and remained stable in IG. ''Positive self-perception'' significantly increased in IG and deteriorated in CG, ''Negative affect'' slightly decreased in CG. ''Care relationship'', ''positive affect'', ''restlessness'', ''social relations'' and ''isolation'' remained stable in both groups (Table 1).

Conclusions.– Results indicate that supplementation with ONS might also positively influence QoL of elderly subjects. We observed slight changes of different QoL dimensions of the QUALIDEM, a tool particularly designed for demented. The feeling of positive self-perception increased in supplemented residents. Contrary, in non-supplemented QoL decreased with respect to having something to do. To better understand effects of nutritional interventions on well-being of residents, further research is needed.

	T1 IG (n = 42)	T2	T1 CG (n = 35)	T2
Care relationship	86 (10–100)	83 (19–100)	90 (33–100)	86 (33–100)
Positive affect	81 (0–100)	67 (22–100)	89 (17–100)	83 (44–100)
Negative affect	67 (0–100)	67 (0–100)	78 (22–100)	67 (0–100)
Restlessness	56 (0–100)	67 (0–100)	56 (0–100)	67 (0–100)
Positive self-perception^{+}/**	78 (0–100)	83 (0–100)*	100 (33–100)	89 (11–100)
Social relationship	69 (6–100)	64 (0–100)	61 (28–100)	67 (28–100)
Social isolation	78 (22–100)	78 (11–100)	89 (33–100)	89 (22–100)
Feeling at home^{+}	92 (25–100)	83 (17–100)	100 (42–100)	100 (17–100)
Being busy	17 (0–100)	0 (0–100)	33 (0–100)	0 (0–100)*

med (min-max); *$P < 0.05$ Wilcoxon-rangsum-test; differences within groups; $^{+}$/**$P < 0.05$ Mann-Whitney-U-test; differences at baseline ($^{+}$) and ΔT1-2 (**).

PC-414

Impact of oral nutritional supplements on nutritional and functional status of nursing home residents with malnutrition or at risk

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Introduction.– Oral nutritional supplements (ONS) are regarded as effective to treat or prevent malnutrition, but studies in nursing homes (NH), in particular with respect to functional benefits, are rare. Objective of this randomized-controlled intervention trial was to investigate effects of ONS on nutritional and functional status of NH residents.

Method.– Forty-five NH residents with MN or at risk received 2 × 125 mL nutrient-/energy-dense ONS (2.4 kcal/mL) daily for 12 weeks, the control group (CG, n = 42) routine care. Weight (BW), upper-arm/calf-circumference (UAC, CC), Mini Nutritional Assessment (MNA-SF), handgriPC-strength (HGS, vigorimeter), gait speed (GS, 4-m), cognition (MMSE), depressive mood (GDS) and activities of daily living (ADL) were assessed at start (T1) and after 12w (T2). Differences (T1-T2) were analyzed within and between groups.

Results.– 11.5% deceased, 77 residents (87 ± 6 years, 91%?) completed the study. BW and UAC significantly increased in intervention group (IG) vs. no differences in CG. Change of nutritional parameters (BW, UAC and CC) was significantly higher in IG compared to CG (Table 1). 77.6% showed severe cognitive impairment (MMSE < 17p.), 54.5% were highly dependent (ADL 0–30p.) at T1. Disabilities in cognition and mobility hampered performance of functional tests (HGS, GS, GDS) in 37.7, 49.4 and 45.5%, respectively. ADL-score decreased in both groups, other functional outcomes did not change (table).

Conclusions.– Results confirm a high effectiveness of ONS to improve nutritional status of NH residents at nutritional risk. Positive influence on functionality could not be confirmed, however functional impairment restricted data collection and thereby significance of results. A more differentiated approach to better target this functionally highly disabled group is advisable for further studies.

	IG (n)	T1	T2	KG (n)	T1	T2	ΔIG-KG
BW [kg]§	42	54.5 ± 9.9	55.8 ± 9.7*	35	52.7 ± 8.4	52.2 ± 8.4	0.002
UAC [cm]†	42	25.0 (18.5–33.4)	25.0 (17.5–34.0)*	35	25.0 (20.5–40.0)	24.8 (17.5–42.4)	0.015
CC [cm]§	42	30.6 ± 4.3	31.0 ± 4.4	35	30.9 ± 3.5	30.3 ± 3.3	0.018
MNA-SF (p.)†	42	9.0 (2.0–12.0)	9.5 (1.0–13.0)	35	9.0 (4.0–12.0)	9.0 (2.0–13.0)	0.800
MMSE [p.]†	41	6 (0–29)	7 (0–29)	35	5 (0–29)	6 (0–29)	0.430
GDS [p.]†	22	5 (0–15)	5 (0–15)	20	5 (0–11)	5 (0–12)	0.102
ADL [p.]†	42	30 (0–100)	25 (0–100)*	35	30 (5–95)	25 (0–95)*	0.979
HGS [kPa]†	28	32 (4–78)	34 (2–78)	20	40 (10–70)	43 (12–80)	0.407
GS [m/s]†	22	0.40 (0.15–1.33)	0.44 (0.14–1.33)	17	0.44 (0.12–0.80)	0.33 (0.17–0.80)	0.609

Mean ± SD/med (min-max), *$P < 0.05$: §: paired-t-test, †: Wilcoxon-test; Δ: IG-KG, §: unpaired-t-test, †: Mann-Whitney-U-test.

PC-415

Vitamin D In hospitalized elderly and its relationship to cardiovascular disease and renal failure

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Objective.– Determine the prevalence of vitamin D in a sample of hospitalized elders and describe their relationship with the PTH, cardiovascular disease and kidney failure.

Method.– Descriptive study conducted between February 1 and March 31, 2010. PTH and vitamin D levels were determined to all patients admitted during this period in the Geriatric Unit of Hospital Virgen del Puerto, Plasencia (Cáceres). The readmission, were not included. Subsequently reviewed the medical records and recorded the presence or not of cardiovascular disease and renal failure.

Result.– In the period of study determined levels of PTH and vitamin D to a total of 141 patients, being 54.6% women. The median age was 85.47 years (78–99). The average vitamin D was 11.47 and PTH in 111.69. Cardiovascular disease was present in 89.36% of the sample being more common in women (90.9%) than in men (87.5%). 32 patients had renal failure (22.69% of the total) with a prevalence virtually unchanged in both sexes. 83 patients (58.86% of the total) had vitamin D deficiency (≤ 10 ng/mL). Only had acceptable values (≥ 30 ng/mL) 7 patients (4.96% of the total). 86.74% of patients with deficit had any cardiovascular disease as well as 7 patients who had recommended levels. 19.26% of those with deficient levels of vitamin D had renal failure. Of 7 patients

with recommended levels of vitamin D only one showed renal failure. PTH levels were higher in those with renal failure (147.72 versus 113.16).
Conclusions.– In our study the deficit of vitamin D is present in more than 50% of patients. This is a sample with a high incidence of cardiovascular disease and patients with kidney failure have higher levels of PTH with respect to those who do not have.

Pharmacotherapy 2/*Farmacoterapia 2*

PC-416

Epidemiological, cross-sectional, multicenter study to describe the characteristics of chronic pain and its treatment in institucionalized elderly patients. Dolores study

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Objectives.– Main objective: To describe the characteristics of pain symptoms in institutionalized elderly population. Secondary objectives: To describe the analgesic groups used in the study population, the relationship between comorbidity and polypharmacy and pain management in these patients, to study the relationship between the characteristics of pain and neurological assessment and status of functional dependence and to link pain assessment with the different geriatric syndromes.
Method.– Eight hundred and thirty patients have been included and 33 nursing homes participated in this epidemiological, cross sectional, multicenter study. Basic sociodemographic data was collected, as well as pain characteristic and treatment data.
Results.– Patients had a median age of 85 years and were mostly (75.3%) women. The median length of stay in the nursing homes was 26 months. The median time of progression of pain was 36 months. The (89.5%) of patients reported nociceptive pain, primarily somatic (74.3%), mainly affecting the lower limbs (71.7%) and back (54.8%). Most patients without cognitive impairment (MMSE > 24) referred pain intensity as moderate (42%) or severe (38.7%), while the majority of patients with suspected cognitive impairment (MMSE ≤ 24) considered the pain intensity mild (45.5%) or moderate (33.1%). By pharmacological group, the most common was the group of analgesics / antipyretics (64.1%), followed by strong opioids (23.8%) and NSAIDs (21.5%). 41.5% of patients used non-pharmacological treatments for pain. Neurological assessment: In patients with cognitive impairment it was observed that the lower the MMSE score, pain intensity was greater (Median of Abbey in moderate dementia = 7, Median of Abbey in mild dementia = 4). Functional Dependence: directly related to the pain intensity, so that the greater the functional dependence (lower score on the Barthel Index) pain intensity was higher punctuated. Regarding non-analgesic treatment, patients received a median of 6 drugs ($n = 584$).
Conclusion.– The observed results seem to corroborate that the underreporting of pain in this population is common. There is no significant difference in pain intensity between patients with or without cognitive impairment. In patients with mild to moderate dementia, pain intensity, seems to be higher as it increases the degree of cognitive impairment.

PC-417

Drug prescribing in geriatrics: A critical review...

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Objective.– To study the relationship between polypharmacy and chronicity of pharmacological treatments, in relation to prevalence of symptoms and iatrogenic risks involved in a geriatric center.
Methods.– Chronic prescriptions in 88 patients of our center were carefully revised. An initial hypothesis was established by observing that, in most cases, such patients had an elevated number of prescribed drugs (> 7), which was also associated with several risk factors possibly attributable to a RAM (drowsiness, falls, constipation...). We first started a prevalence study on potentially inadequate medical prescriptions, taking into account Beers criteria and RAM risk factors in elderly patients. The Hamdy questionnaire was taken into account in our conclusions, thus focusing on the relevance of the "prescription time" factor. Data collection (last quarter of 2010): number/percentage of prescriptions and starting date, diagnoses, psychophysical evaluation (Dawton, Pfiffer-Cornell, Yessavage, Barthel, Falls).
Results.–
Polypharmacy.– 80% of the patients had more than 7 prescribed drugs.
Causality-based criteria attributable to ram:
– drowsiness: 42%;
– falls: 7%;
– constipation: 38%;
– extrapiramidal motor symptoms/ gait instability: 12%;
– confusion / cognitive impairment within the last 6 months: 18%.
Potentially inadequate medication groups:
– benzodiazepines 36%;
– coadministration of antipsychotics and anxiolytics 28%;
– antidepressants 22%;
– heparines 9%;
– proton pump inhibitors (PPIs) 42%;
– non-steroidal anti-inflammatory drugs (NSAIDS) 62%;
– oral hypoglycemics 16%.
100% of all these 7 medication groups may entail high **RAM risk**.
Groups of long-lasting medication:
– benzodiazepines > 2 years 42/88 patients;
– antipsychotics > 2 years 36/88;
– antidepressants >2 years 16/88;
– heparines > 2 years 4/88;
– PPIs > 2 years 57/88;
– NSAIDs > 2 years 52/88;
– oral hypoglycemics > 2 years 7/88;
– Antibiotics > 2 years 1/88.
Groups of drugs underutilized according to our criteria:
– antidepressants;
– analgesic drugs/morphine derivatives.
Conclusions.– We have clearly shown that a lack in global and periodical revision of chronic treatments correlates with an increased risk of adverse effects. The conclusions derived from the present study have led us to adopt a novel adequate protocol in our center according to the mentioned criteria, establishing a surveillance management after prescription suppression or interchange.

PC-418

Inappropriate prescribing and strategies for correct use of drugs in the elderly

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Background.– Elderly individuals are vulnerable for inappropriate prescribing (IP) because of the increase prevalence of chronic

degenerative diseases an and important raise of comorbidity. These conditions lead to polypharmacy and make this patient group particularly vulnerable to adverse drug reactions.
Objectives.– The primary aim of this study was to assess the IP in outpatients older than 75 years old.
Methods.– A total of 90 outpatients older than 75 years age were randomly selected and recruited. The STOPP criteria (Screening Tool of Older Person's potentially inappropriate Prescriptions) were applied to these patients.
Results.– The mean age of this group was 81.4 years and 62.22% were female. The mean number of medicines prescribed was 5.91. Potentially inappropriate medication was identified by STOPP in 47.77% of the patients. The more frequent mistakes were the use of ASA (acetylsalicylic acid) more than 150 mg per day and the long-term use of NSAID (non steroidal anti-inflammatory drugs) more than three months for mild pain in arthrosis.
Conclusions.– IP is frequent in aged population. The use of instruments like STOPP criteria for the correct drug use can help to decrease the prevalence of inappropriate prescribing and play a decisive role for improving the quality of the care in aged population.

PC-419

Study of the use of statins in primary prevention in the institutionalized elderly

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Objectives.– To review the use of statins in primary prevention in institutionalized elderly. Assess whether the treatment is justified and if there is an analytically appropriate monitoring.
Methods.– We selected residents who have been treated with statins in primary prevention during the month of April 2011 and data were collected from: sex, age, smoking, Diabetes Mellitus (DM), blood pressure, lipid profile, dose and pattern of the statin and the reason for the prescription. We have calculated the cardiovascular risk (CVR) using the table SCORE project based on total cholesterol/HDL, according to recommendations of the Fourth Task Force European for the Spanish population. For the assessment of the treatments we used the Clinical Guide of dyslipidemia in Fisterra. Treatment in primary prevention with high RCV or with DM was considered to be directly justified. In the rest of cases we assessed the quality of life and life expectancy of the residents.
Results.– The study population included 603 elderly, of which 24 (4%) were treated with statins (atorvastatin and simvastatin) as primary prevention; 79% (19) were women. Seven patients (29%) had high CVR, three (13%) were moderate and 14 (58%) low. In cases of primary prevention with low CVR, the treatment was not justified in 7 patients (50%) and therefore, we suspended the treatment; in 1 case the dose was reduced and 6 patients will depend upon the results of a new analytical. In the 3 patients with moderate CVR: 1 kept the same treatment, another had a reduction in the dose and it was increased for the third one. As a result of the revision analyticals were requested in 21 patients: 11 as a follow-up, in 4 after modification of the statin dose and 6 after treatment discontinuation.
Conclusions.– The revision of the treatment with statins revealed an overuse of the pharmacological treatment in patients treated in primary prevention and with low cardiovascular risk. In addition, it was demonstrated that follow-up analysis were carried out less frequently than desired.

PC-420

Prescription drug's assessment before entering an nursing home regarding the STOPP / START protocol

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Objectives.– To evaluate, using the STOPP protocol (Screening tool of older people's potentially inappropriate prescriptions) / START (Screening tool of older people's potentially inappropriate prescriptions), the adequacy or inadequacy of medication given to residents entering at the Centro Gerontológico de Ablaña.
Methods.– Retrospective and descriptive study of the residents who were taken up in the center in 2010, including social and demographics variables and by using the STOP / START protocol.
Results.– Ninety-two residents hospitalized (65.2% female, average age: 83.5 ± 6.35, Barthel index: 52.91 ± 33.81), took an average of 6.6 ± 3.1 drugs. 75% of the patients met at least one inappropriate prescription criteria, the most frequent being the use of long life span benzodiazepines in 46.7% of the cases, followed by the prolonged use of the proton pump inhibitor in gastroesophageal reflux in 31.5% of the cases, 14.1% were using benzodiazepines increasing their risk of falling, prolonged use of neuroleptics as hypnotics14.1%; 12% use a higher than 150 mg Acetil salicylic acid dosage and 8.7% loop diuretics as monotherapy in hypertension. According to the START protocol 67.4% were detected with a prescribed treatment for their condition, as well as 34.8% not receiving any suitable treatment for their condition. Furthermore 21.7% received antihypertensive treatment while suffering from systolic blood pressure above 160 mmHg. 19.6% of atherosclerotic disease patients received antiplatelet therapy and statins 17.4%, while 4.8% did not receive any antiplatelet therapy. The proper use of proton pump inhibitors in the treatment of gastroesophageal reflux disease was 8.7%. In addition 15.4% of diabetics with cardiovascular risk factors did not receive statins, 7.6% of patients suffering from osteoporosis did not receive a calcium and vitamin D supplement and 6.5% who had atrial fibrillation did not receive warfarin.
Conclusions.– The STOPP / START protocol detect a high number of inappropriate prescriptions, especially the excessive use of psychotropic drugs, and a deficit in cardiovascular protection.

PC-421

Influence of hospitalisation on drug prescription, including inappropriate medication, in the elderly

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Polypharmacy is frequent in the elderly, despite an important iatrogenic risk. Furthermore, it is often associated with Potentially Inappropriate Medications (PIM). The aim of this study is to explore the influence of hospitalisation on drug prescription of patients older than 70 years in Internal Medicine. Prescriptions before hospitalisation (B) and after discharge (D) were prospectively collected and analysed. We considered polypharmacy and references to Beers list of PIM. One hundred and seventy-four patients (mean age 83 years) were included. Quantity of drugs in each prescription remained nearly the same (B = 6.7; D = 6.6; $P > 0.05$) but we noted frequent modifications (84.6% of the patients). For example, 78.0% of level 2 analgesics were changed into paracetamol. Data analysis reveals a significant augmentation in laxative treatment (B = 11.5%; D = 25.9%; $P = 0.001$). We observed also an important part of the population concerned by PIM's prescription (B = 50.8%; D = 49.4%; $P = 0.37$). The number of PIM amounted to 2.1 before hospitalisation and 1.8 at discharge

($P = 0.08$). We noticed numerous modifications in PIM's prescription. Dextropopoxyphene's prescriptions were totally cancelled (6 patients) and psychotropics with anticholinergic properties in 10 cases out of 17. The most important modifications concerned benzodiazepines (BZD), which are present in 52.2% (B) and 70.6% (D) of psychotropic treatments ($P = 0.006$). Long life BZD were stopped in 60.7% and Z-BZD initiated for 20 patients. Dose of BZD recommended in elderly is never respected, neither before hospitalisation nor after discharge. Moreover, nearly 13% of prescriptions contained 2 or more psychotropics of the same chemical class. Unless patients treated for their dementia by anticholinesterasic should not receive BZD or anticholinergic drugs, they did (B = 12.1%%; D = 9.8%; $P = 0.14$). This study confirms polypharmacy in the elderly. The hospitalisation doesn't act on this parameter but breeds numerous modifications in drug therapy. Some sorts of PIM are cancelled by the hospitalisation, but other ones are introduced at discharge. The context of hospitalisation may bring some disorders (nervous, intestinal...) and justify temporary prescriptions (Z-BZD, laxative...). However, this study shows that clinician's awareness on polypharmacy and PIM's existence is necessary to optimise the safety of the medications and decrease iatrogenic events.

PC-422

Generic substitution of oral tablets in elderly in Denmark

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Introduction.– Generic substitution in Denmark means that the pharmacy must provide the cheapest medicine. Every time you buy a drug, the drug name or brand name may have changed. Consequently tablet or packaging appearance has changed. Substitutions therefore make many patients uneasy. Our aim is to describe the number of substitutions of oral tablets used by the elderly.
Method.– Substitutions were counted in the medicine used by 183 persons aged 65 years or older living in Aarhus, Denmark. The elderly were selected consecutively from a control group in a Danish compliance study, Methods for Improving Compliance with Medicine Intake. Substitutions were counted manually in the prescription database for one year in 2008–2009. Only substitutions for oral tablets were included.
Results.– In one year 183 elderly bought 837 drug (4.6 (1–9) per elderly). Purchase per elderly was 20.3 (3–64). Purchase per drug was 4.4 (1.5–11.0). The number of substitutions of drug name or brand-name was 837. Substitutions per drug in one year were 1.0 (0–14). Substitutions per purchase in one year were 0.2 (0–0.9). Each elderly was exposed to 0–4 substitution per drug or 0–0.6 substitution per purchase. The name was changed in 48% of the drugs.
Conclusion.– Nearly half of the drugs used by an elderly population in Denmark changed drug name and/or brand name during one year. This may be a substantial problem in the elderly. The impact of substitution in drug name or brand name will be further investigated in relation to compliance.

PC-423

Antibiotherapy in nonagenarians admitted in a middle stay unit

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Objectives.– Nonagenarian patients represent an increasing proportion of patients admitted to middle stay units. This group usually is not covered by the clinical guidelines. This means that the therapeutic behaviours, such as antibiotic use (4–10% of admissions), are poorly defined in this population. Our goal is to analyze whether some therapeutic antibiotic prescribing is associated with increased mortality
Methods.– Nonagenarian patients admitted during 2010 in a middle-stay unit of 350 beds, we collected age, sex, reason for admission and variables of the comprehensive geriatric assessment (CGA), comorbidity (Charlson Index), functional status (Barthel Index) and cognitive (Pfeiffer). We reviewed antibiotic treatment, including antibiotics used in hospitals (piperacillin-tazobactam, carbapenems, etc.) or bi-therapy, the indication, and the localization of the infection. Finally, we analyzed the association of these variables with mortality
Results.– One hundred and ninety-five patients were evaluated (mean age $\pm$ SD 93.2 $\pm$ 2.7, 65.6% female) hip fracture was the most frequent diagnosis (27.7%). Prior Barthel (mean $\pm$ SD) = 60.9 $\pm$ 31.9, admission = 26.8 $\pm$ 25.6, discharged (survivors) = 49.0 $\pm$ 33.1, Charlson = 2.77 $\pm$ 2.05 and Pfeiffer = 3.7 $\pm$ 3.3. The average stay was 49.8 $\pm$ 35.9. 55.9% ($n = 108$) received antibiotics. Of these, 79.6% on an empirical basis, a mainly amoxicillin-clavulanic (50%), 6.4% hospital antibiotics and 2.5% ($n = 5$) bi-therapy. Neither the empirical treatment ($P = 0.096$) nor the hospital antibiotic use ($P = 0.174$) was associated with increased mortality. Neither localization most prevalent, respiratory and urinary, were associated with increased mortality risk ($P = 0.276$ and $P = 0.116$). The mortality in the group treated with bi-therapy vs. monotherapy ($P = 0.0178$) is not relevant, given the rarity of bi-therapy. Conversely, worse prior Barthel ($P = 0.0004$) and admission ($P < 0.001$) and higher Charlson ($P = 0.037$) were associated with increased mortality.
Conclusions.– Increased nonagenarian patients admitted compels us to review the therapeutic behaviour. In our series, with high use of empirical treatment or use of specific antibiotics was not associated with increased risk of death, and possibly the clinical and functional criteria remain crucial to the choice of treatment.

PC-424

A qualitative analysis of patients' and pharmacists' opinions of benzodiazepines

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Introduction.– In Ireland, almost 12% of adult patients receive regular prescriptions for benzodiazepines or the non-benzodiazepine hypnotics. Benzodiazepines are licensed for the short-term treatment of anxiety and insomnia. Negative effects of benzodiazepines include a decrease in cognitive function, an increased risk of road traffic accidents and an increased incidence of falls in the elderly. Prescribing guidelines such as NICE recommend the short term use of benzodiazepines and advise against their use in panic disorder. Guidelines published in Ireland by the Department of Health and Children also recommend short-term use. Previous research has shown that approximately 50% of patients would like to discontinue this medication. Despite this, patients often believe withdrawal from benzodiazepines would be difficult to achieve. The aim of this study was to investigate patients' knowledge about benzodiazepines and to determine pharmacists' opinions of benzodiazepine prescribing practices and the role of a pharmacist in benzodiazepine cessation.
Methods.– Qualitative research in which twenty patients and eight pharmacists were interviewed using semi-structured, open-ended interviews. Patients must have received three months supply of benzodiazepines within the previous six months.

Results.– Patients have poor knowledge and acceptance of the negative effects of benzodiazepines. Many patients exhibit tolerance and dependence although they do not understand it. Pharmacists feel that prescribing practices are improving and that pharmacists should have a role in benzodiazepine cessation.
Conclusion.– Patient education regarding benzodiazepines needs to be improved. Pharmacists are ideally placed to educate patients and to assist patients who are discontinuing benzodiazepines.

PC-425

Functional polymorphisms in the CYP2D6 gene may influence clinical response to tramadol administered as post-surgery analgesia

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Introduction.– Tramadol is an opioid analgesic drug commonly used to relieve moderate-to-moderately/severe pain, including pain after surgery. Tramadol is administered as inactive molecule, and metabolized in the active molecule *O-desmethyltramadol by the hepatic enzyme cytochrome P450 (CYP) 2D6.* Aim of this study was to evaluate the influence of the functional polymorphisms in the CYP2D6 gene on the efficacy of tramadol-based protocols in post-surgical pain treatment.
Methods.– This was a prospective cohort study of 40 consecutive Caucasian patients who underwent thoracic/abdominal surgical operation and treated with tramadol-based protocols for post-surgical pain. In prevision of post-surgical pain of mild (M1), moderate (M2) or severe (M3) pain, M1 patients were treated with tramadol 200 mg, ketoprofen 320 mg, ranitidine 100 mg, metoclopramide 20 mg in 48 hrs, M2 patients were treated with tramadol 400 mg, ketoprofen 640 mg, ranitidine 200 mg, metoclopramide 40 mg in 48 hrs, and M3 patients were treated with tramadol 400 mg, ketoprofen 640 mg, ranitidine 200 mg, metoclopramide 40 mg, morphine 20 mg in 48 hrs. Levels of analgesia has been evaluated by means of the Verbal Numerical Rate (VNR) scale. At 24 hrs a peripheral blood sample was obtained from all patients. Genetic analyses of the 16 clinical relevant polymorphism in the CYP2D6 was made using the INFINITI™ Analyzer (Auto-Genomics, USA) with the INFINITI™ CYP4502D6-I Assay. Hierarchical longitudinal linear model statistic analysis was used to evaluate differences in the estimated means ($\pm$ SE) of VNR scores as compared with CYP2D6-associated metabolizer phenotypes.
Results.– The analysis revealed that 18 subjects with CYP2D6 mutations possibly leading to an extensive metabolizer phenotype (EM), 17 subjects had mutations possibly leading to an intermediate metabolizer phenotype (IM), and 5 subjects had mutations possibly leading to a poor metabolizer phenotype (PM). The analysis demonstrated a significant difference in the response to post-surgical analgesia. The VNR estimated mean was significantly higher in IM than in EM subjects (3.332 ± 0.191 vs. 2.657 ± 0.189; $P = 0.015$), and in EM subjects as compared with PM subjects (2.657 ± 0.189 vs. 1.741 ± 0.343; $P = 0.024$). Accordingly, the VNR estimated mean was significantly higher in IM subjects than in PM subjects ($P = 0.002$).
Conclusions.– The analysis of the CYP2D6 gene may be useful to identify subgroups of patients with a different response to post-surgical analgesia.

PC-426

The association of the use of anticholinergic drugs with various components of cognition measured with CERAD test

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Introduction.– Many potentially inappropriate drugs prescribed to older people have anticholinergic properties and are known to cause cognitive decline. Their effects on various dimensions of cognition are less understood. Our aim was to study the association of anticholinergic drugs with various dimensions of cognition.
Method.– Cross sectional analyses of data based on the baseline assessments of the Drugs and Evidence-Based Medicine in the Elderly (DEBATE) study. Participants were 400 home-dwelling individuals aged 75 to 90 (mean age 80 years, 65% women) with a history of stable atherosclerotic disease living in Helsinki, Finland. Use of drugs with anticholinergic properties (DAPs) was estimated using data of previous scientific literature. CERAD test was used to compare various dimensions of cognition between the users ($n = 295$) and non-users ($n = 105$) of DAPs in year 2000.
Results.– Of the participants 74% used at least one (DAP). In bivariate analyses the use of DAPs was statistically significantly associated with low score in verbal fluency, naming and MMSE. The difference remained for low verbal fluency (OR 1.8, 95%CI 1.0–3.2, $P = 0.03$) and naming (OR 2.0, 95%CI 1.2–3.3, $P = 0.004$) but not with MMSE after adjusting for age and gender. When further adjusted for education no statistical differences between the users and non-users of DAPs could be seen.
Conclusions.– In our study naming and verbal fluency were most affected referring to possible impairment of semantic memory and executive functioning. Dimensions of CERAD tests assessing episodic memory, those most sensitive to detection of early Alzheimer's disease – did not show differences between users and non-users of DAPs.

PC-427

Zoledronic acid. Is it used as we should?

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Introduction.– Zoledronic acid has demonstrated a significant decrease in risk of vertebral and hip fracture in the elderly. It is the only bisphosphonate that reduces mortality (HORIZON-PFT Study) besides offering the advantage of being intravenously administered once per year.
Objectives:
– showing the protocol used in our Falls and Fractures Clinic;
– evaluating the treatment feasibility in our clinical setting;
– describing the infusion tolerance and to identify possible side effects.
Methods.– Retrospective observational analysis (15/5/2010–10/5/2011) of patients over 75 years under Zoledronic acid with recent admission for hip fracture.
Results.– During this year 122 patients were admitted in the Ortogeriatric Unit. Just 31 (25.4%) were treated with Zoledronic acid in our Day Hospital (by protocol, being reported to the Hospital Medical Direction to get authorization). 90.32% (27) were women and 12.90% (4) males, the mean age was 84 years old and all of them had, at least, three comorbid conditions. The infusion was performed without side effects in all patients. We have reported one death (by pneumonia) and two cases of readmission (heart failure and renal failure) within the three months after infusion. All of them were considered independent events.
Conclusions.– Zoledronic acid is a feasible and safe option for the osteoporosis treatment in the elderly in our clinical setting. Despite this, only 25% of patients with hip fracture were treated with zoledronic acid. In order to increase its use we should standardize

it, avoiding steps to delay the treatment and promoting the loss of patients.

PC-428

Medication changes in hospital - Are these communicated to primary care providers?

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Introduction.– A previous audit presented at Frankfurt EUGMS showed that communication of in-patient medication changes between secondary and primary care physicians is poor. Lack of communication leads to polypharmacy and inappropriate continuation/discontinuation of drugs. Resultant changes were introduction of a compulsory box on our hospital electronic discharge summary indicating whether medication changes had been made, and an electronic prompt following completion of the box to encourage the discharge summary writer to explain reasons for medication changes.
Aims.– Re-audit to determine whether the above changes have led to an improvement in communication.
Methods.– Retrospective analysis of 50 case notes and accompanying electronic discharge summaries. Ten sets of notes for consecutive discharges from each of our five elderly care wards were reviewed. Explanations for starting, stopping and changing doses of medications were assessed. Inadequate explanations were sub-divided into 'major' omissions or 'minor' (failure to explain simple analgesia, aperients, anti-emetics, etc.).
Results.– Medication changes were made during 92% of admissions. The mean numbers of admission and discharge medications were 7.1 and 7.4 respectively. An average of 1.7 drugs were stopped, 1.5 were started, and 1.5 were altered by dose. Explanations for medication changes were only satisfactory in 17.4% of cases. Adequate explanation of all drugs started and stopped was present in 31.3% and 9.1% of discharge summaries respectively; explanation of dose alteration was present in 50%. ''Major'' omissions in explanation of drug changes were noted in 63% of discharge summaries, while ''minor'' omissions were present in 19.6%.
Conclusions.– While our data suggest that improvements in communication have resulted from changes to the electronic discharge summary, full explanation of reasons for medication changes is still lacking. This is particularly evident in cessation of medications, with only 9.1% explained adequately. Further education of secondary care physicians is needed. This will (a) encourage senior doctors to ensure that the rationale for drug changes is explained fully to juniors; (b) persuade junior doctors of the necessity of passing on this information to their colleagues in primary care.

PC-429

Association between prescribing procedure and rate of re-evaluation of drug treatment

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Introduction.– Continuous re-evaluation of drug treatment according to the present medical condition is important in older people, since they often suffer from multiple diseases and are treated with numerous drugs. In Scandinavia, multi-dose drug dispensing (MDD) is a common alternative to ordinary prescriptions (OP). For patients on MDD, drugs are delivered in unit bags for each dose occasion. The prescribing procedure differs between MDD and OP, and no data are available as to whether this affects the rate of re-evaluation.
Objectives.– To compare changes in drug treatment between patients on MDD and patients on OP.
Methods.– From a cohort of 199 hip fracture patients $\geq$ 65 years of age, all patients on MDD at both discharge and at six-month follow-up and all patients on OP during the same period were extracted ($n = 154$). Hip fracture patients were considered a relevant patient group to analyse, since the fracture should call for re-evaluation of drug treatment, especially as regards drugs with fall-risk increasing and fracture-preventing properties. Changes in drug treatment from discharge to six months were considered as an estimate of re-evaluation. Drug treatment was thus analysed at discharge and after six months. For each patient, all prescribed drugs were registered as unchanged, withdrawn, dosage adjusted, or newly prescribed.
Results.– A total of 1396 drugs in 107 MDD patients (74% female, median age: 87 years) and 568 drugs in 47 OP patients (74% female, 79 years) were analysed. The average number of drugs was (i) at discharge: 11.4 *vs.* 9.8 ($P = 0.008$), (ii) at six-month follow-up: 8.3 *vs.* 6.8 ($P = 0.04$). From discharge to six-month follow-up, 47% of the drugs in MDD patients and 33% of the drugs in OP patients remained unchanged (mean number of drugs: 5.6 *vs.*3.5, respectively; $P < 0.0001$). The remaining drugs were either withdrawn (45% *vs.* 56%; 4.9 *vs.* 5.2 drugs; $P = 0.002$) or dosage adjusted (8% *vs.* 11%; 0.95 *vs.* 1.0 drugs; $P = 0.2$). At six months 21% *vs.* 36% of the drugs were newly prescribed (1.8 *vs.* 2.3 drugs; $P = 0.001$), respectively.
Conclusions.– MDD is associated with less re-evaluation of drug treatment compared with OP when measured as changes in drug treatment over time.

PC-430

The green light scale: A cholinergic deficiency rating scale for dementia: A novel way to discriminate between responders and non-responders for the treatment with acetylcholinesterase-inhibitors

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Objectives.– To study the effectiveness of a cholinergic deficiency rating scale (CDRS) for discriminating between responders and non-responders for the symptomatic treatment of dementia patients with cholinesterase inhibitors.
Design.– A prospective cohort trial.
Setting.– Eight hundred bed general teaching hospital.
Participants.– A total of 109 Alzheimer dementia patients of 65 years and older receiving symptomatic treatment for dementia with cholinesterase inhibitors.
Intervention.– Before the treatment with Ach inhibitors patients were screened with the CDRS (cholinergic deficiency rating scale). The scale is based on the symptoms of patients with a cholinergic deficiency syndrome. Patients with a CDRS score of $>$ = 12 were considered to be highly deficient of Acethylcholine (ach) and patients with a CDRS score $<$ 12 low deficient of Ach. Patients with a high score are considered to profit most of treatment with Achesterase inhibitors.
Measurements.– The primary outcome was responding to the symptomatic treatment with cholinesterase inhibitors as seen on no setback (on at least two of three) on the MMSE, IDDD and the RMBPC. The trial time was one year.
Results.– Of 46 patients' results were available for analysis after one year. 23pts (50%) worsened on all 3 domains. 17 (27%) one of the 3 domains stable. 4 (8.7%) 2 of 3 domains stable. 2 (4.3%) all 3 domains stable! Of the domains only IDDD scores showed a

significant improvement of function in the higher CDRS group ($P = 0.026$).
Conclusion.– 50% of treated patients remained stable on at least domain after one year of treatment with cholinesterase inhibitors. This is consistent with the literature. 13% of the patients were stable on 2 or more domains. At the cut-off level of 12 on the CDRS only patients in the high score group of IDDD improved significantly in function. The CDRS does not seem to differentiate between responders and non –responders.

PC-431

Which factors influence the decision of oral anticoagulation in elderly patients with atrial fibrillation?

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Objectives.– Evaluation of the level of oral anticoagulation (OAC) according to clinical guidelines, and factors that influence it, in patients with chronic atrial fibrillation (AF) visited for the first time in a geriatric outpatient clinic.
Methods.– We reviewed all patients seen for the first time during the period from January to December 2010. We select patients with history of AF, permanent and paroxysmal. We collect demographic variables (age, gender), comorbidity (CRF (creatinine > 1.4), liver dysfunction, dementia (classified with GDS-FAST scale), previous bleeding and chronic heart failure (CHF), functional status (Barthel scale), cardiovascular risk factors (hypertension, DM2, HCVs previous DLP) and polypharmacy. Cardio-embolic risk is analyzed with CHADS2 score (when the score is = 1, CHA2DS2-VASc index is also made) and the risk of bleeding with HAS-BLED scale. Patients are classified into high, medium and low risk (cardio-embolic and hemorrhagic). We collected if the patient receives some form of OAC therapy (warfarin) or antiplatelet therapy (ASA). Statistical Analysis is done with SPSS 16 version MAC.
Results.– One hundred and one patients were assessed for the first time. Twenty-seven patients with a history of AF. Mean age 82 (SD 5) years. 52% were female. 89% hypertension, type 2 diabetes 44%, 26% previous stroke, CHF 30%, 11% renal failure, none ventricular dysfunction were collected on clinical history, 15% valve disease. 22% had paroxysmal AF. The classification as CHADS 2 index: high risk 92.6%, moderate 7.4%. For the index CHADS2VAS 100% are at high risk. In relation to the HAS-BLED index, 63% were at high risk of bleeding. Cognitive impairment: 55.6%. History of falls: 26%. Previous bleeding: 7.4%. Medium Barthel index 79 (SD 28.6, median 90, IQR: 75–100). Regarding treatment 40.7% were anticoagulation, antiplatelet agents 51.9% and 7.4% no treatment. Paroxysmal AF in univariate analysis was the only variable significantly associated with a lower OAC (0% vs. 52.4%), $P = 0.005$.
Conclusions.– In our sample, the percentage of OAC is low. Those who receive OAC are the permanent AF. The decision of OAC is not associated or to age or to the presence of any geriatric criteria, nor is in line with the recommendations of the clinical guidelines.

PC-432

Optimization of pharmacological prescription in Benquerencia nursing home, Toledo (Spain)

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Introduction.– The intervention is being carried out in a nursing home with 120 permanent residents. The population is characterized by its complexity, showing a high prevalence of chronic pathology, pluripathology, advanced functional impairment and a high incidence of cognitive impairment linked to cognitive and behavioural symptoms, involving the use of large number of drugs (risk of polypharmacy), and thus increasing the risk of drug related problems (DRPs).
Aim.– To implement optimization measures in the prescription and follow-up of therapeutic regimes in the elderly institutionalized patient, as an improvement tool for the quality of care and the integral care.
Patient and methods.– A total of 30.8% of prescriptions were reviewed during 6 months in interdisciplinary meetings between pharmacists and doctors. Firstly, we applied a general filter based on pharmaceutical care criteria to detect DRPs, and then we suggested interventions. Secondly, we assessed potentially inappropriate drug prescriptions using STOPP/START criteria. Thirdly, prescriptions were fitted to the pharmacotherapeutic guide of reference in our field. These data were compiled in four database tables (DRPs Table, DRPs Intervention Table, START Table, STOPP Table). And lastly, we drew up individual documents of treatment according to each patient's features.
Results.– An analysis of 37 cases showed an average use of 8 drugs. We detected 25 DRPs, with the inappropriate drug use (52%) being the most common. A total of 32 interventions on DRPs were performed; the most frequent of them was that aimed to stop the use of inappropriate drugs (46.87%). Regarding the use of STOPP/START criteria, we developed 21 interventions (80.95% aimed to STOPP criteria and 19.05% aimed to START criteria). In the decision-making about the use of these optimization criteria, the cardiovascular system was the most commonly involved physiologic system (42.85% of the interventions).
Conclusions.– By applying treatment optimization tools (DRPs detection, STOPP/START criteria), we can reduce polypharmacy, avoid DRPs and inappropriate prescriptions, improving the control and follow-up of therapeutic regimes and the quality of drug handling in a nursing home.

PC-433

Mistreatment in the elderly leads to acute renal failure and toxic hyperkalemia

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Background.– Inappropriate drugs prescription occurs within 20% of general practice in the elderly, and is also a predictor of hospital length of stay, readmission and death. Most drugs are eliminated through kidneys; therefore a common cause of adverse drug events or worsening of renal function is associated with the inappropriate dosage adjustment.
Case presentation.– A 75-year-old female, with hypertension, dyslipidemia, chronic renal disease of unknown etiology with creatinine 1.57 with right kidney ectopic. Her usual daily drugs were ibersartan/hydrochlorothiazide 300/12.5 mg/day; nevibolol 5 mg/day and spironolactone 100 mg/day and fluvastatin. She was admitted with 48 hours dyspnea and oliguria. Over the last 2 weeks, she described increasing muscle weakness, treated with nonsteroidal anti-inflammatory drugs (NSAIDs), without improvement. Her blood pressure was 100/60, HR 55, pulse oximetry 95%. She was alert and tachypneic. Her lungs showed hypoventilation at the base, heart sounds normal, bilateral lower limb edema. Labs showed Creatinine 5.4. Urea 176 and potassium 8.97 with metabolic acidosis (pH 7.08, pCO2 37, HCO3 11). Radiographic' signs of congestive heart failure were observed. EKG showed slow

atrial fibrillation with incomplete left bundle branch block. Hyperkalemia is due to prolonged treatment with diuretic plus NSAIDs, and renal failure itself. She was treated for correction of hyperkalemia getting diuresis without requiring dialysis with clinical improvement. Renal ultrasound findings excluded obstructive etiology. Heart failure is probably secondary to bradycardia in relation to hyperkalemia and beta-blockers. Leucocituria could guide acute tubular interstitial nephritis (TIN) associated with NSAIDs intake (even without typical findings), but with resolution and improvement of renal function to previous levels after removal of the same. Progressive improvement potassium levels, diuresis and renal function to previous values.
Conclusion.– Geriatrics have developed several methods for managing medication (e.g. BEER's criteria drugs) in order to detect and evaluate which drugs are potentially dangerous to patients and should be eliminated. The problem increases with wrong interpretation of unrecognized adverse drug events as a new medical condition, prescribing another cascade of unnecessary medications.

PC-434

Potential inappropriate prescription in elderly in primary care

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Objective.– Inappropriate prescription (IP) of drugs is a significant problem, particularly in the older patients. Different screening tools have been formulated to identify potential IP. This study investigates drug utilization and estimates the prevalence of IP in a Spanish population. We compared the performance of three different tools (Beers's Criteria, Mc Leod criteria and STOPP/START) in the detection of potentially inappropriate drugs and prescribing omissions of appropriate drugs in older patients.
Methods.– A cross-sectional study was undertaken on a total of 407 patients (population aged 65 years or older) who accepted face-to-face questionnaires in home interviews. Study setting: 14 public primary care clinics in Lanzarote (Spain). Multistage sampling. Data recorded included socio-demographic characteristics, clinical status, Charlson comorbidity index, disability scales (Katz index), Pfeiffer, frequency of medical assistant use, information about drug intake (active principle, ATC group, schedule, therapy duration, adverse effects, self-medication, compliance), social support (Duke-UNC test), family support (APGAR test), and self quality of life measure (SF-12). All prescriptions were reviewed and the Beers's criteria, McLeod criteria, STOPP and START tools were applied.
Results.– Mean age was 79.3 (range 65–100) and 233 (57.2%) were females. The total number of medicines prescribed was 1844; median 4.5 (range 0–14). McLeod criteria identified 30 IP in 7.1% (29) of patients, whilst Beers' identified 119 IP in 24.3% (99) of them and the IP rate identified by STOPP was 35.4% (144) in respect of 174 potentially inappropriate prescriptions. A total of 303 prescribing omissions of appropriate drugs were identified in 41.8% (170) of patients using the START tool. The most frequent IP were diazepam using McLeod criteria, NSAID (Beers) and long acting benzodiazepines using STOPP. In addition, the most frequent prescribing omission using START criteria was metformin with type 2 diabetes.
Conclusions.– IP is a prevalent problem in Lanzarote. STOPP identified a much larger number of subjects with potentially inappropriate drug prescription than Beers and McLeod criteria. START identified numerous prescribing omissions that would not have been identified by using Beers or McLeod Criteria.

PC-435

Warfarin versus dabigatran for stroke prevention in a geriatric day hospital: Do the "up front" costs alone justify a change in clinical practice?

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Introduction.– Recent studies have suggested the usefulness of dabigatran as an alternative oral anticoagulant to warfarin. It is associated with less intracranial haemorrhage and is shown to be more effect than warfarin in low to moderate risk patients. Warfarin has a narrow therapeutic index and in order to prevent stroke, patients must be kept within a therapeutic range. This is associated with significant cost and imposition on patients. However the unit cost of warfarin is significantly less than dabigatran. We investigated, whether the immediate cost "uPC-front" would justify converting to dabigatran in our day hospital.
Methods.– We reviewed the charts of all patients with non-valvular atrial fibrillation attending our day hospital for INR (International Normalised Ratio) monitoring of warfarin over a three month period. All patients were on warfarin for at least 3 months. eGFR (estimated Glomerular Filtration Rate) was calculated based on the MDRD (Modification of Diet in Renal Disease). We liased with hospital stores and the laboratory department to estimate cost. Costs for INR monitoring such as the use of outpatient services/ potential for admission or cost of complications or treatment failure/patient convenience were excluded. Warfarin was calculated at € 7 versus € 872 for dabigatran per 3 months (British National Formulary).
Results.– Sixty-three patients were established on treatment (primary prevention $n = 46$, secondary $n = 17$). Median age was 72 (range 29–91). The average no of visits to the warfarin clinic was 5 over 3 months, (range 1–39). The average estimated costs for INR testing and transportation for one patient was € 65/ visit (€ 26 for laboratory processing and € 32 for transport and sundry patient expenses). For 3 months direct costs averaged € 20,865 for warfarin and € 54,936 for dabigatran. Only 2 patients (3%) had CKD (Chronic Kidney Disease) stage 4 or less making them unsuitable for dabigatran.
Conclusion.– "UPC-front" Dabigatran appears to be twice as expensive as warfarin. However given the growing evidence for the utility and effectiveness of dabigatran, it would be unwise to judge its cost effectiveness without carefully accounting for opportunity costs, expense of treatment failure and patient satisfaction. Few patients had an obvious contra-indication.

PC-436

An audit of warfarin usage in community-dwelling adults attending the geriatric day hospital

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Introduction.– Warfarin (an oral anticoagulant) inhibits vitamin-k dependent clotting factors II, VII, IX and X. It is indicated for cardio-embolic strokes (for which atrial fibrillation is the most common cause), venous thrombo-embolic disorders and prosthetic cardiac valves. The International Normalised Ratio (INR), which is a comparative rating of a patient's prothrombin time (PT) ratio, is used as a standard for monitoring appropriate Warfarin therapy.

We assessed Warfarin use and INR control in community-dwelling adults attending a geriatric day hospital.
Methods.– A retrospective audit of medical records of patients attending a geriatric day hospital for Warfarin management, was conducted from 4/10/2010 to 03/11/2010 inclusive. Data on patient demographics, indications for Warfarin therapy, duration of treatment for deep vein thrombosis (DVT)/pulmonary embolism (PE), INR control and Adverse Drug Reactions (ADR) were collated. The percentages of the number of visits in therapeutic levels, known as Time in Therapeutic Range (TTR), were calculated for all patients (target INR of 2.5).
Results.– One hundred and nine patients on Warfarin attended the day hospital during the study period, with a mean age of 80 $\pm$ 8 years (range 40–93). The youngest patient was admitted under the Stroke service with a superior sagittal sinus thrombosis (SST). 94 (86.24%) patients had AF, 4 (3.67%) had a cardiac valve replacement, there were 3 cases each (2.75%) for DVT, PE and cardio-embolic strokes (other than AF) and 1 case each (0.92%) for patent foramen ovale and SST. Of the 107 patients with a target INR of 2.5, 13 (12.15%) had an INR $<$ 2.0 (sub-therapeutic), 83 (77.57%) had an INR between 2–3 (therapeutic) and 11 (10.28%) had an INR $>$ 3 (over-coagulated). ADR was reported by 18 patients, 5 of whom had an INR $>$ 3. Patients with a target INR of 2.5 had mean TTR of 59% (range 37–73%), whilst 83 (78%) patients with an INR between 2–3, had a TTR of 65% (range 56–74%).
Conclusion.– Warfarin was prescribed primarily for stroke prevention. Over 75% of our patients were adequately anticoagulated. The use of TTR to evaluate the control of INR in patients on Warfarin is important as a measure of departmental quality.

PC-437
Polipharmacy in primary care

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Objective.– Polypharmacy is a topic of much concern for those looking to improve the quality of care for the elderly and has been linked to heightened risk of occurrence of drug-related problems and a detrimental health outcome. This study investigates drug utilization, estimates the prevalence of polypharmacy, and to determine patient characteristics that are predictive of exposure to polypharmacy, in a Spanish population.
Methods.– A cross-sectional study was undertaken on a total of 407 patients (population aged 65 years or older) who accepted face-to-face questionnaires in home interviews. Study setting: 14 public primary care clinics in Lanzarote (Spain). Multistage sampling. Data recorded included socio-demographic characteristics, clinical status, Charlson comorbidity index, disability scales (Katz index), Pfeiffer, frequency of medical assistant use, information about drug intake (active principle, ATC group, schedule, therapy duration, adverse effects, self-medication, compliance), potentially inappropriate prescriptions (Beers' criteria, McLeod, STOPP and START tools) social support (Duke-UNC test), family support (APGAR test), and self quality of life measure (SF-12). We defined polypharmacy as treatment with five or more medications.
Results.– Mean age was 79.3 (SD: 8) years (range 65–100) and 233 (57.2%) were females. The total number of medicines prescribed was 1844. In addition, the number of drugs prescribed for each outpatient was 4.5 on the average (SD: 2.9) (range 0–14). A total of 183 (45%) of outpatients were polimedicated. The bivariate model showed an statistically significant association between polypharmacy and conviviality model, 18 ATC groups (i.e. statins, different antihypertensive therapy, protom pumb inhibitors, antiplatelet or antidiabetic therapies), Yesavage, Katz and Charlson index scores, certain medical conditions (i.e. COPD, cardiovascular risk factors), flu vaccination, various geriatric syndromes (neurosensorial deprivation, falls of repetition, insomnia, cognitive impairment and urinary incontinence) and potentially inappropriate prescriptions. The association between polypharmacy and male sex (HR 1.67, 95% CI 1.04, 2.68), diabetes (HR 1.8, 95% CI 1.03, 3.06), and elevated Charlson index scores (HR 38.7, 95% CI 12.6, 118.97) remained significant after adjustments.
Conclusions.– This study evidence that the prevalence of polypharmacy in the elderly in Lanzarote is substantial. In our study, diabetes, high comorbidity and male sex were predictive of exposure to polypharmacy.

PC-438
Are anticholinergic drug effects additive?

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Introduction.– Many drugs prescribed to old people, display anticholinergic activity (AA), and high anticholinergic burden have been associated with increased risk of adverse effects in observational studies. The clinical effects of reduced anticholinergic burden are poorly studied in randomized interventional studies. In present study we aimed to evaluate the clinical effects of reducing the patients' anticholinergic drug scale (ADS) score by multidisciplinary drug reviews.
Methods.– This study was a multicentre, randomised, controlled, single blinded trial including patients from 21 nursing homes with ADS score 3. Exclusion criteria were inability to perform the tests, i.e. patients with severe dementia were excluded. Clinical characteristics were obtained from the patients' medical records. We sampled blood for determination of serum anticholinergic activity (SAA), assessed neuropsychiatric symptoms, measured mouth dryness and performed the cognitive tests; MMSE and CERADs wordlist tests for immediate recall, delayed recall and recognition. Immediate recall was the primary end point. The test battery was repeated after 4 and 8 weeks.
Results.– Of 1101 screened patients 230 had an ADS score $\geq$ 3, and 87 were included, 47 in intervention group and 40 in the control group. 20% of the patients dropped out to second follow up. Regression analyses of the baseline data showed that the overall ADS scores were significantly associated with mouth dryness (R^2 = 0.10, $P < .01$), but not with cognitive function, neuropsychiatric symptoms or SAA ($P > .05$). At the second follow up the median ADS score was reduced from 4 to 2 in the intervention group and remained 4 in the control group. The difference in the ADS scores did not result in significantly differences in the clinical endpoints ($P > .05$) between the groups. However, immediately recall was significantly approved within the interventional group ($P = .00$), but not in the control group ($P > .05$).
Conclusion.– In this cohort of nursing home patients, a reduction in ADS score did not significantly reduce mouth dryness or improve cognition functions, but a benefit on anticholinergic adverse effects might have been achieved if more patients had their ADS score reduced to 0.

PC-439
Do we adequately risk assess our elderly stroke patients in atrial fibrillation for anticoagulation therapy?

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Introduction.– Patients with atrial fibrillation (AF) have a 5 fold mean increase in risk of stroke than those in sinus rhythm.

Warfarin can reduce the risk of stroke by up to 68%. The elderly are the highest risk group for disabling strokes due to their multiple concomitant risks and yet they are the group that anticoagulation treatment is most difficult. National guidelines state that all patients in AF should have accurate risk benefit assessments to aid the decision to anticoagulate.

Methods.– Using the stroke register, discharge summaries and clinical coding data, we identified all patients diagnosed with Stroke/TIA and AF on discharge from our acute stroke ward in a district general hospital during 01/08/10–31/01/11. The charts were audited to assess the number of patients with known and new atrial fibrillation, the number of patients treated with warfarin, if the new risk assessment tools CHAD2VASC and HASBLED scores were used and if there was any documented evidence of risk-benefit assessments.

Results.– One hundred and eighty-six patients had the diagnosis of stroke/TIA. Data from 161 discharge letters was obtained. Forty-nine were identified to have atrial fibrillation. Forty-one of these charts were analysed. Twenty-five of these patients had a previous history of AF, 8 were on warfarin on admission. Ten of those not on warfarin did have evidence of documentation of risk benefit assessments having previously been carried out. Sixteen patients had new onset AF, only 7 of these patients had documentation of risk benefit discussions on anticoagulation. Two patients had CHAS2VASC and HASBLED scores documented. Of those admitted with previous AF, 8 had their risks for anticoagulation therapy reassessed. Overall 13 patients were commenced on warfarin. Twenty-one had valid reasons why warfarin was not commenced. Seven patients had no risk benefit discussion carried out.

Conclusion.– This audit highlights that up to one third of patients admitted with stroke/TIA have atrial fibrillation. Yet just over a quarter of patients are receiving anticoagulant therapy. Although the elderly population are a high-risk group for anticoagulation we do need to ensure that all patients are receiving thorough risk benefit assessments.

PC-440

Interdisciplinary geriatric and psychiatric care reduces potentially inappropriate prescribing in-hospital: Interventional study in 150 acutely ill elderly patients with mental and somatic co-morbid conditions

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Background.– Potentially inappropriate medications (PIM) and prescription omissions (PO) are highly prevalent in older patients with mental comorbidities.

Objective.– To evaluate the effect of interdisciplinary geriatric and psychiatric care on the appropriateness of prescribing.

Design.– Prospective and interventional study.

Setting.– Medical-psychiatric unit in an academic geriatric department.

Participants.– One hundred and fifty consecutive acutely ill patients aged on average 80 ± 8.1 years suffering from mental comorbidities and hospitalized for any acute somatic condition.

Intervention.– From admission to discharge, daily collaboration provided by senior geriatrician and psychiatrist working in a usual geriatric interdisciplinary care team.

Measurements.– PIM and PO were detected and recorded by a trained independent investigator using STOPP/START criteria at admission and discharge.

Results.– Compared to admission, the intervention reduced the total number of medications prescribed at discharge from 1.347 to 790 ($P < .0001$) and incidence rates for PIM and PO reduced from 77% to 19% ($P < .0001$) and from 65% to 11% ($P < .0001$) respectively. Independent predictive factors for PIP at discharge were being faller (odds ratio (OR) 1.85; 95% confidence interval (CI) 1.43–2.09) and for PO, the increased number of medication (OR 1.54; 95% CI 1.13–1.89) and a Charlson co-morbidity index > 2 (OR 1.85; 95% CI 1.38–2.13). Dementia and/or presence of psychiatric co-morbidities were predictive factors for both PIM and PO at discharge.

Conclusion.– These findings hold substantial promise for the prevention of IP and OP in such comorbid and polymedicated population. Further evaluations are however still needed to determine if such as intervention reduces potentially inappropriate prescribing medications-related outcomes such as ADE incidence, rehospitalization or mortality.

PC-441

Screening for elder mistreatment in the emergency department of a university hospital

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Introduction.– Elder Mistreatment (EM) is often an underdiagnosed serious health problem. The visits of elderly patients to Emergency Department (ED) are increasing in the last decades. ED professionals work in a privileged place to detect it, there is no consensus on screening for ED.

Objective.– To determine the probability of EM after screening program in ED of a university hospital.

Patients and methods.– We performed a prospective observational study of screening for EM in patients over 75 years old during an eight hours period, who visited the ED of the Hospital Clínico San Carlos in Madrid during April of 2010. We collected epidemiological, clinical and social variables recorded after triage. We used the Elder Assessment Instrument (EAI) as screening tool for EM.

Results.– We collected 70 patients over 75 years. EM was evident in nine (12.8%) patients and probable or possible in 16 (22.8%). There was no evidence in 34 (48.6%) patients and 11 (15.8%) patients were unable to be assessed. The evidence and type of EM according to the EAI is shown in Table 1. Within the group of suspected EM: 18 (72%) were women, average age 84 (SD 4.1) years old. The triage level of emergency was poor emergency in 17 (68%) and the reasons for consultation to the ED were: six (24%) dyspnea, six (24%) low back or extremities pain, three (12%) malaise, three (12%) dizziness, two (8%) chest pain, two (8%) urinary tract symptoms, one (4.0%) red eye, one (4%) decrease and one (4%) wound. Social variables: eight (32%) lived alone and ten (40%) had no type of social support.

Conclusions.– The probability of EM is high in our study, being clearly ruled out only in less than half of our sample. Highlight EM by omission (neglect or abandonment) against abuse. The EAI represent a useful screening tool for EM at ED. The EAI would be reasonable to apply it especially in frail elderly.

Table 1.

Evidence	Abuse	Exploitation	Neglect	Abandonment
Definite	0 (0%)	0 (0%)	0 (0%)	9 (12.9%)
Possible/probable	1 (1.4%)	4 (5.6%)	13 (18.6%)	8 (11.4%)
No evidence	58 (82.9%)	65 (93%)	57 (81.4%)	53 (75.7%)
Unable to assess	11 (15.7%)	1 (1.4%)	0 (0.0%)	0 (0.0%)

PC-442

Geriatric pharmacotherapy in Poland – PolSenior Project (preliminary report)

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Introduction.– The aim of the study was to characterize the pharmacotherapy of subjects who participated in national survey: "Medical, psychological, social and economic aspects of ageing in Poland (PolSenior)".
Method.– The analysed group consisted of 1181 subjects aged 55+ (average age – 8 ± 10.8 years; 635 female (F), 546 male (M). They were divided into three groups according to the age:
– I aged 55–59 years: 181 subjects;
– II aged 65–74 years: 444 subjects;
– III aged 75+: 556 subjects.
Results.– The average number of drugs taken by studied individuals was 5.2 ± 2.0 (0–24) and. In selected groups, it was: 2.9 ± 2.3 (range: 1–12), 5.0 ± 3.5 (1–23), 5.9 ± 3.8 (1–24), respectively [I vs II, II vs III, I vs III – $P < 0.001$]. More than one in every ten studied subjects [147 subjects (12.4%)] did not take any drugs while 41.0% [484 subjects] consumed more than five drugs daily [among them 100 individuals took more than 10 drugs]. The cardiovascular drugs [C], alimentary tract and metabolism drugs [A], central nervous system drugs [N] and musculoskeletal drugs [M] were taken more commonly (851 subjects: 72.1%; 578: 48.9%; 404: 34.2%; 228, 19.3%; respectively).
Conclusions.– The average number of drugs taken by the studied subjects was high and increased with the age. There is a need for the further analysis in order to detect the potential inappropriateness of treatment of the elderly.

Sarcopenia, falls and related aspects 2//*Sarcopenia, caídas y aspectos relacionados 2*

PC-443

Eccentric exercise as a preventive physical action in people over 65 years

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Objective.– Given the need to promote healthy aging, study physical activity and its forms is imminent. Therefore, make a systematic review of scientific evidence of the eccentric exercise (ECC) as a preventive action in over 65 years, helps to know the benefits that this training can provide.
Material and methods.–
– Cross sectional study.
– Descriptor used "MeSH" Elder "Age". Limit: "Human" and "people over 65 years". Using Tag title and summary of the ontology "eccentric exercise". Databases: Medline, Embase, ISI, Cinahl, Cochrane and Lilacs.
Inclusion criteria.– Randomised controlled trials published in journals indexed in international data base subject to review.
Exclusion criteria.– Documents do not base their study population target of interest and incorporating the use of drugs in its intervention. The search equations have developed in the MEDLINE database via PubMed, using Boolean connectors, subsequently adapted to other databases mentioned.
Results.– The ten items selected for review had an obsolescence of 7 years. Some based their study on healthy population or with diseases: cardiovascular, musculoskeletal, Parkinson, hemiparesis. The ECC forms applied were cycloergonometro training, cycling and knee exercises with dynamometer or platform, leg exercises and exercise with machines.
Conclusions.– The ECC is safe and effective to reduce and prevent the Sarcopenia. In addition, by its metabolic low cost and reduced oxygen consumption is optimal for cardiovascular diseases, chronic diseases and frailty. Reducing risk of falls and improving mobility and quality of life. While there are machines controlled for ECC, there are resources at low cost that can be used in level institutional or not as: bicycle, movements specific by segments with or without weight or walk in a decrease road.

PC-444

Osteoporosis treatment and clinical pathway following a hip fracture in older age

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Objectives.– The aim of our study is to analyse if osteoporosis treatment was prescribed at hospital discharge since implementation of a hip fracture pathway.
Patients and methods.– We included all patients discharged from December 2009 to April 2011 included in hip fracture pathway. We collected age, sex, Charlson index, Barthel index, previous osteoporotic fractures, previous drug therapy and at discharge, length of hospital stay, complications and mortality. Pathological hip fractures or those caused by traffic accidents were excluded.
Results.– We analysed 724 patients with a mean age of 83.34 years (43–104) 77.3% women, mostly living at home 73.3%. Mean Charlson index was 1.38 and mean Barthel index 79.29. Mean length of hospital stay was 14.03 days and 37.6% of patient had almost one complication. Mean of drugs per day was 5.56, 17.4% had had a previous osteoporotic fracture, 12.6% of patients received calcium and vitamin D, 6.8% had scheduled a bisphosphonate. Patients with a previous osteoporotic fracture 25.4% received calcium and vitamin D and bisphosphonates 16.7%. Excluding in-hospital patient died (4.6%), 95.2% of patients were discharged with the recommendation to take calcium and vitamin D, reasons for not prescribing were: advanced chronic renal failure, malignancy and hypercalcemia. A 71.9% of patients were cited at rheumatology service for considering initiation of bisphosphonates. There is a possibility of zoledronic acid for the comfort of annual dose. The main reasons for non-referral for study were: poor prognosis of less than one year, advanced dementia and severe chronic renal failure.
Conclusion.– Hospital hip fracture pathway could greatly improve osteoporosis treatment in elderly people.

PC-445

Vitamin d status and demographic features at outpatient clinic in Izmir – a sunny city in Turkey

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Introduction.– Vitamin D deficiency is traditionally common among community-dwelling elderly at higher latitudes, institutionalised elderly and patients with hip fractures. In recent years sunny countries are reporting vitamin D insufficiency. It can be assumed that vitamin D insufficiency can be partly explained by latitude and seasonal changes. Vitamin D production depends on both sufficient skin surface and exposure to sun. Izmir is at coastal area and mostly sunny all year. The aims of this study were to evaluate vitamin D levels in the elderly patients who attended internal medicine outpatient clinic and the association of some demographic data with vitamin D levels.

Method.– All the greater than 50-year-old patients who attended internal medicine outpatient clinic and vitamin D levels were assessed from January 1st, 2011 to March 15th, 2011 were enrolled in the study. Laboratory results were determined from their hospital records retrospectively. Each patient's demographic data (married, widow, whom does he/she live with; alone-with spouse-with relatives, with children-with children and spouse-with carer, does he/she goes out of the house regularly) were asked by telephone. Vitamin D status was estimated by measuring plasma 25-hydroxyvitamin D (25OHD) levels; deficiency and insufficiency were defined as values below 25 nmol/L and 50 nmol/L, respectively. The patients were classified into age groups.
Results.– Sixty greater than 50-year old patients were enrolled in the study. Among the patients, 86.7% ($n = 52$) were females, 13.3% ($n = 8$) were males. Mean age was 65.40 ± 10.57 years. Mean 25OHD, calcium, phosphorus, C-reactive protein levels were: 49.35 ± 25.15 nmol/L, 9.38 ± 0.4 mg/dL, 3.56 ± 0.34 mg/dL, 0.68 ± 1.13 mg/dL. The prevalence of hypovitaminosis D was 53.3% (40.0% insufficiency and 13.3 deficiency). 25OHD levels were significantly lower in patients living alone or widow (35.08 ± 19.57) and those who do not go out regularly (23.50 ± 13.62) than those who are married or not alone (52.92 ± 25.29) and going out regularly (51.20 ± 24.83); ($P = 0.008$), ($P = 0.007$) respectively.
Conclusions.– Our results suggest that hypovitaminosis D is common in Izmir. Mobile patients had higher 25OHD levels regardless of age.

PC-446

A description of elderly with multiple falls – the results of the national Polish study – Polsenior

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Objectives.– The aim of the analysis was to characterize the elderly subjects with a one-year history of multiple falling (MF).
Methodology.– The presented data is a part of the results of a nationwide study (Polsenior project), which has been carried out since 2006 in the Polish population of 55–104-year-olds.
On the basis of questionnaires, the following parameters were assessed: history of falling, cognitive functions (Mini-Mental Test Examination), functional status (Activity of Daily Living and Instrumental Activity of Daily Living), presence of cardiovascular disease (CVD), hypertension, arrhythmias i.e. atrial fibrillation, heart failure (HF), stroke, diabetes mellitus. For each respondent Body Mass Index (BMI) was calculated and waist circumference (WC) was measured. MF was defined as more than 1 fall in a 1-year-time before the interview.
Results.– The mean age of 5690 respondents was 76.56 ± 10.97 yrs (50.97% men). Falls were observed in 1210 subjects (21.27%) in 1 year's time. One falling incident was observed in 39.5% of people who reported falling, recurrent falls were as follows: two falls in 22.56%, three to five falls in 20.74%, six to ten in 5.45%, and more than ten falls in 4.38% respondents. Most subjects experienced falls during such activities as walking (64.88%), standing up or sitting down (26.86%) or performing routine activities (20.83%). MF was observed more often among women (14.8 vs 10.8%, $P < 0.0001$). Patients who reported MF were significantly older then patients without falls (75.2 ± 02 yrs vs respectively: 81.6 ± 0.6 yrs among respondents who reported two falls, 81.7 ± 0.7 yrs among those who reported three to five falls, 80.8 ± 1.3 yrs among those with six to ten falls, 81.0 ± 1.5 yrs among those with more than 10 falls; $P < 0.0001$). Respondents with MF had more frequently than non-fallers: atrial fibrillation (24.9% vs 16.5%; $P < 0.0001$), history of stroke (11.6% vs 6.6%; $P < 0.0001$) and diabetes mellitus (22.4% vs 15.2%; $P < 0.0001$). There were no significant differences in the prevalence of MF related to the presence of hypertension, CVD and HF. Patients who reported MF presented significantly worse functional status and impaired cognitive functions than non-fallers. Moreover, the association between the severity of dementia and the frequency of falling was noticed ($P < 0.0001$). There were relation between the frequency of falling and BMI results ($P = 0.01$) and waist measurements ($P = 0.02$).
Conclusion.– Female gender, older age, history of atrial fibrillation, stroke and diabetes mellitus, impaired cognitive functions and functional status were observed to be associated with recurrent falling among the Polish elderly subjects.

PC-447

Depression: a modifiable factor in fearful older fallers transitioning to frailty

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Introduction.– Fear of falling is one of the most common fears amongst the community-dwelling aged and has been suggested to be as serious a health problem as falls themselves. Understanding the psychological correlates of fear of falling in a group of fallers transitioning to frailty may help us identify effective strategies to reduce or prevent fear of falling in this vulnerable group of older people. The objective of this study was to evaluate the psychological factors that correlate with fear of falling in a group of fallers both non-frail and those transitioning to frailty.
Methods.– This study had a cross-sectional design where 301 fallers received a comprehensive geriatric assessment at the Technology Research for Independent Living (TRIL) Clinic in Dublin (http://www.trilcentre.org/). Fear of falling was measured using the Modified Falls Efficacy Scale (MFES) and frailty was measured using the Biological Syndrome Model described by Fried et al. Psychological measures were assessed using well-validated tools to include anxiety, depression, loneliness, personality factors, cognition and adverse life events.
Results.– Frailer fallers had lower mean MFES scores when compared to fallers considered robust indicating an increased level of fear of falling ($P < .001$). Age, female gender and lower cognitive scores were associated with greater fear of falling in the group of fallers considered robust. However for those fallers who fulfilled either pre-frail or frail criteria, higher depression score was the only factor associated with greater fear of falling on multivariate analysis. A separate sub-analysis identified that the odds ratio of having case level depressive disorder (CESD-8 ≥ 4) if you were a frailer faller fulfilling any of the frailty criteria was significantly higher than if you were classified as a robust faller (OR = 2.6, CI 1.3–5.2, $P = .006$).
Conclusion.– Our study suggests that fallers at a transitional level of frailty may represent a particularly vulnerable group psychologically who would may benefit most from interventional strategies that have specific intervention components to address depressive symptoms.

PC-448

Profile of old diabetic patients with repeated falls

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Objective.– Analysis of the profile of repeated falls (functional, mental, social and biomedical situation) in a diabetic population

over 65 years which has two or more falls during the last six months and compare it to a group of diabetics not having gone through any.
Materials and methods.– Retrospective, observational case-control study. The following items were evaluated as risk markers: functional situation and clinical tests of gait, cognitive condition, social situation and biomedical assessment (nutritional valuation and medicaments consumption). Results were analysed through the statistical method SPSS 15.00.
Results.– Ninety-two diabetic patients were tested. On the one hand, fifty-one out of them – group A – had two or more falls during the precedent six months. On the other hand, forty-one out of the – group B – had not gone through any. Group A's average was 76.41 years old (76.4% were women) whilst group B's was 77.76 (75.6% were women). Geriatric functional valuation KATZ $\geq$ 3 (A 31.7%, B 19.6%, *P* 0.18); clinical tests of gait: Tinetti $\leq$ 18 (A 55.4%, B 44.6%, *P* 0.16); TUG $\geq$ 20 seconds (A 53.3%, B 46.7%, *P* 0.77); speed of gait $<$ 39 cm/s (A 53.7%, B46.7%, *P* 0.77); cognitive situation: MME $\leq$ 24 (A 36.6% y B 30%, *P* 0.5); Yesavage $\geq$ 5 (A 42%, B 40%, *P* 0.84); social assessment: living alone (A 37.3%, B 22%, *P* 0.11); medicaments consumption $\geq$ 4 (A 78%, B 56.9%, *P* 0.02); nutritional parameters: albumin $\leq$ 3.5 g/dL (A 64.7%, B14.6%, *P* 0.01); total proteins $\leq$ 6.5 g/dL (A 74.5%, B 34.1%, *P* 0.01); total cholesterol $\leq$ 160 mg/dL (A 64.7%, B 47.8%, *P* 0.12); NMA $\leq$ 11 (A 76.7%, B 31.7%, *P* 0.001); IMC $\leq$ 21 (A82.9%, B 17.1%, *P* 0.01); Haemoglobin $\leq$ 12 g/dL (A 17.1%, B13.75%, *P* 0.05).
Conclusions.– There are no differences between group A and B regarding the functional and cognitive situation. Yet, they are obvious when examining nutritional parameters and number of taken medicaments.

PC-449

The relationship of fall with hand grip strength and 3-meter walking test in geriatric outpatients

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Aim.– To assess the relationship between handgrip strength, falling trends and the Timed Up and Go (TUG) test in geriatric outpatients.
Material and methods.– The age, body mass index (BMI), life forms, minimental scores (MMTs) of 73 consecutive geriatric patients were evaluated and grip strengths were calculated with a hand dynamometer, and 3-meter walking times (TUG) were determined. Fall risk factors were asked. 14 patients were excluded from the study because of various reasons. All patients divided into two groups of 35 non-fallers patients and 24 fallers patients. The statistical analysis for the comparison of the groups was performed with the student-t test and the Pearson correlation.
Results.– The mean age of 59 female patients was 70.8 $\pm$ 6.2. In both groups, while BMIs were increased, the TUG times were longer ($P < 0.001$). The mean value of TUG times in fallers and non-fallers were 11.68 $\pm$ 2.57 and 10.71 $\pm$ 1.86 respectively. The TUG time in fallers was greater than that of non-fallers but that was not statistically significant ($P = 0.07$). The non-fallers group's grip strength was decreased with age ($P = 0.007$) and mean values were 0.31 $\pm$ 0.07 bars (232.52 $\pm$ 52.5 mm Hg). Non-fallers group's grip strength was higher than the fallers group's. The mean value of the fallers group's grip strength was 0.38 $\pm$ 0.09 bars (285.02 $\pm$ 67.5 mmHg) and was statistically significant ($P = 0.003$). There was no significant relationship for the duration of the TUG time between two groups; but the non-fallers group's grip strength was higher than the other group and TUG times was increased ($P = 0.046$).
Conclusion.– In the elderly population, non-fallers group's grip strength was significantly higher than the fallers group. The grip strength may be a predictive, simple and useful test for tendency to fall.

PC-450

Femur fracture patients in an acute geriatrics unit

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Objectives.– To describe the results of proximal femur fracture patients that were seen in an acute geriatrics unit during a 6-month follow-up.
Methods.– This is a prospective follow-up study of patients older than 70 y/o, admitted and seen up to six months after discharge from an acute geriatrics unit from June 1st to November 30th. Sociodemographic data: age, gender, place of origin, and discharge destination. Functionality: Lawton Index (LI) and Barthel Index (BI). Plurypathology: Charlson Comorbidity Index (CI).
Results.– Forty-eight patients were followed up to 6 months after discharge: 36 women (75%), age 83.4. Mean preoperative time 2.4 days; 62.5% were operated before 2 days. Mean hospital stay: 7.6 days. BI previous to admittance 70.5, discharge 28 and after 6 months: 32.4. We found statistical significance in functionality loss at discharge and at 6 months (0.04) compared to previous functionality and functionality gain compared at 6 months to discharge functionality (0.000). Eleven died (22%) and only the patients with higher CI had statistical significance. Among the patients, 47.9% were living at their previous residence at 6 months.
Conclusions.–
– Important loss of functionality compared to previous functionality.
– Slight gain of functionality compared to discharge functionality.
– Mortality of 22% related to a greater CI.
– 47.9% still live at their place of origin.

PC-451

Haemoglobin values and blood transfusion in elderly hip fracture patients

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Introduction.– Several hip fracture patients receive blood transfusion during hospital stay. There is no consensus about indications, i.e. haemoglobin levels, for transfusion. The aim is to describe clinical characteristics of hip fracture patients receiving blood transfusions.
Method.– Cross-sectional observational study. Data was obtained from a quality register where demographic and medical information are collected by an interdisciplinary team. Data about haemoglobin values, blood transfusions, and the use of antithrombotic agents and anticoagulants were obtained from medical charts.
Results.– Six hundred and sixty-five patients, 492 women and 173 men aged 65–102 years, were included from 01 January 2009 to 31 December 2010. Mean Hb on admission was 12.3 g/mL (range 5.3–16.9). Lowest Hb registered during hospitalisation was mean 9.6 g/mL (range 4.7–15.4). One hundred and sixty-nine patients (26%) received blood transfusion. A larger higher proportion of the per-/subtrochanteric fractures that needed blood transfusion than the femoral neck fractures 40% vs 15% ($P = 0.001$). Neither waiting time before surgery, nor use of antithrombotic agents and antic-

oagulants were related to need for blood transfusion. Patients who received blood transfusions were older. The percentage of patients > 80 years was higher among transfused patients 13% vs 20% ($P = 0.036$). Transfused patients had a larger decline in Hb mean 2.5 vs 3.7 ($P = 0.001$). Transfused patients also had more chronic diseases mean 1.9 vs 1.7 ($P = 0.039$). Patients who were transfused had lower mean Hb on admission (11.1 g/mL) compared to those not transfused (12.7 g/mL, $P = 0.001$). Transfused patients also had more complications than patients not transfused; urinary tract infections OR1.7 (95% CI 1.2–2.6) and pressure ulcer OR 2.5 (95% CI 1.1–5.4), adjusted for age, chronic, diseases and other complications. Surgical wound infection was not related to blood transfusion. Transfused patients stayed longer in hospital mean difference 3 days (95% CI 2.1–4.8), and were more often discharged to a nursing home 36% vs54% ($P = 0.001$).
Conclusions.– Hip fracture patients who received blood transfusion had lower Hb on admission, had a lager decline in Hb after surgery, more chronic diseases, more complications, stayed longer in hospital and were more often discharged to nursing homes. Our data suggests that receiving blood transfusion is related to fracture type, comorbidity and frailty.

PC-452

Falls and iatrogenic drug in elderly people: A retrospective study in two short-stay wards

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Introduction.– The main objective was to analyse drug prescriptions among patients having experienced fall during hospitalisation in two geriatric short-stay wards in order to identify patients at higher risk of falling. The secondary objective was to compare treatments between admission and discharge, in accordance with prescription guidelines in order to identify iatrogenic risk.
Method.– Retrospective observational study set up between January 1st, 2008 and June 30th, 2009. Measurements included sociodemographic data (gender, age, place of residence...), stay information (length of stay, reason for hospitalisation), clinical characteristics (functional status, cognitive status, level of comorbidity, number and consequences of falls...), and treatment at admission and at discharge. Descriptive statistics were performed.
Results.– Forty-seven patients were included in the study. They were on average 85 ± 2 years with a majority of women (55%). Thirty-three patients were admitted directly from their own home and 14 from the emergency department. The main reasons for hospitalisation were falls ($n = 13$) and behavioural problems ($n = 22$). Falls were experienced by six patients before admission; 27 (58%) had dementia syndrome, 41 (87%) had high level of comorbidity, and 32 (68%) had impaired renal function. Mean number of drugs per patient was 7 ± 2 at admission and 10 ± 2 at discharge, that is to say an increase of 43% during the stay. There was no significant drug interaction, nevertheless a few drugs association known to increase risk of falling were found among 25 patients at admission, and among 30 patients at discharge.
Conclusion.– The 47 patients that had fallen during their stay had numerous factors predisposing to falls (age, polypharmacy, psychotropic drug use, cognitive impairment...). In general, drug prescriptions should be optimised during hospital stays because geriatric patient had numerous factors that lead to fall risk. These results underline the high complexity of geriatric population and the difficulties to manage well their treatments so as to avoid iatrogenesis leading to the downward spiral of loss of autonomy.

PC-453

Geriatric consultation in elderly hip fracture patients

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Introduction.– To assess the effects of the assignment of a part-time geriatric consultant to the trauma unit of the Hospital of Segovia for patients over 75 admitted for surgical treatment of hip fracture.
Methods.– Control group (188 patients admitted in 2007 received traditional care) was compared with intervention group (60 patients admitted between January and May 2011 evaluated daily by a geriatric consultant). SPSS 11 was the statistics program used to analyse results.
Results.– Statistically relevant differences between intervention and control group were:
– same age (mean 85.97 SD 6.131, 20% < 80 years, 57% 80–90 years and 23% > 90 years) and sex (76% female);
– reduction of average stay of 13.46 to 11.45 (P 0.040) and preoperative hospital stay of 4.62 to 3.82 (P 0.012).
Intervention group showed the following characteristics:
– 15.5% received only medical management and no patient proposed for surgery was refused. Ten percent died at hospital;
– comorbidity: 31% neurological disease, 68% dementia, 27% visual impairment, 31.7% hearing impairment, 58.2% heart disease, 30% pulmonary disease, 33.9% diabetes, 45% malnutrition, 27% rheumatic disease, 31% previous fracture;
– complications: 26% heart failure, 26% respiratory infection, 18% urinary tract infection, 53% blood transfusion;
– before fracture, 27% could walk down the street on their own, 21% walked with a cane and 7.4% with one person, 11.8% could only walk at home with a cane, 17.6% with a walker, 7.4% with one person aid and 3.2% couldn't stand up. At discharge, 1.5% walk down the street with a cane, 7.7% with a cane at home, 21.2% with a walker at home, 3.8% with one person aid, 25% transferred with personal aid and 40% couldn't stand up;
– 57.8% lived at home. Ten patients (16%) required admission to a nursing home at discharge, only one patient (1.7%) to a public nursing home.
Conclusions.– Most patients admitted for surgical treatment of hip fracture are very old, with important disability and comorbidity. Geriatric intervention can reduce hospital stay and preoperative time by evaluating patients early and daily. Effects have no relationship with early discharge to neither rehabilitation units nor nursing homes.

PC-454

An evaluation of adherence to the British orthopaedic association's standards for hip fracture care in older adults

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Introduction.– Fragility fractures are associated with significant morbidity and economic cost. In September 2007, the British Orthopaedic Association (BOA), in conjunction with the British Geriatrics Society, published guidelines on the optimal management of hip fractures and outlined 6 standards of care. The aim of this audit was to assess compliance to these standards for older

in-patients, in a Dublin teaching hospital with a joint Orthopaedic and Geriatric Medicine service.
Methods.– A prospective audit was conducted from 20th February 10 to 20th April 10 inclusive. All in-patients (> 65 years) with a neck of femur fracture were included. Data were extracted from patients' charts and nursing notes. The standards specified that:
– all patients should be admitted to an orthopaedic ward within 4-hours of presentation to the Emergency Department (ED);
– medically-fit patients should have surgery within 48 hours and during normal working hours;
– the risk of pressure ulcer development be addressed;
– patients be managed on an orthopaedic ward with access to orthogeriatric medical input;
– anti-resorptive therapy be considered;
– multidisciplinary team (MDT) intervention be offered, to prevent future falls. The Waterlow Pressure Risk Assessment Tool was used to evaluate the risk of pressure ulceration by nursing colleagues.
Results.– Twenty-nine patients (seven males, 22 females) were included (mean age 80.4 ± 7.45 years). One patient died one day post-surgery (intraoperative ischemic stroke). One hundred percent compliance was achieved in relation to reducing the risk of pressure ulceration and multidisciplinary team input. Three standards were partially met, 19 (67.9%) patients had surgery within 48 hours of admission, 20 (71.4%) patients had surgery during normal working hours (9 a.m.–5 p.m.), 20 (71.4%) patients were started on anti-resorptive therapy. Nineteen (67.9%) patients were managed on an orthopaedic ward, nine on surgical wards and 1 on a urology ward. No patient was admitted to the orthopaedic ward within 4-hours of presentation.
Conclusion.– This audit demonstrated that a combined orthopaedic surgery and geriatric medicine service facilitated adherence to these standards in older adults with hip fractures. The time from ED presentation to admission on an orthopaedic ward was the most significant shortcoming identified.

PC-455

Cohort for the study of falls (CEC-2 study): incidence of falls in the Spanish elderly population

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Introduction.– The objective of this study was to estimate the incidence of falls and fractures among elderly persons in the Spanish population.
Method.– This prospective cohort study included 770 subjects older than 64 years and not institutionalised, living in Spain. The sample was gathered using a multistage probability sampling procedure, stratified by sex, size of the residence location, geographic area and age (the later stratum was not proportional but with an oversized group of older-than-79 subjects, to facilitate estimations in this group). In the first sampling stage, towns of different sizes were selected in the pre-established geographic areas; afterwards, different districts were selected within towns; lastly, homes and participants were selected within districts. A baseline evaluation of participants was carried out by in-person interviews, where affiliation and sociodemographic data were collected, as well as information on several risk factors related with falls (data not shown). Telephone follow-up was carried out every three months, where participants were asked about the occurrence of falls and fractures and the fall direction. Total follow-up time was one year. The statistical analysis included the 628 patients, who completed the follow-up. The incidence of falls, repeated falls (> 1) and fractures was calculated for older-than-64 subjects by adjusting the age disproportion generated in the sampling procedure. These incidences were also calculated for older-than-79 subjects.
Results.– Within the older-than-64 group, 23.8% of the subjects had at least one fall (CI 95% 20.6–27.4%) while the percentage of repeated fallers in this group was 8.0% (CI 95% 6.0–10.1%). Within the older-than-79 group, 32.5% had at least one fall (CI 95% 28.1–37.0%), while the repeated fallers were 11.6% (CI 95% 8.6–14.1%). Women fell more often than men: RR = 1.66 (IC 95% 1.22–2.26%); Chi^2 test: $P = 0.001$. Subjects most frequently fell forward (44.5%), followed by lateral fall (23.8%). Overall, 9.4% (CI95% 5.1–13.7%) of the fallers had a fracture (3.3% had a hip fracture – CI95% 6.–0.7%)
Conclusions.– The incidence of falls, hip fracture and other fractures in the Spanish elderly population is high, with the highest rates affecting women. Regarding direction of the falls, subjects most frequently fall forward.

PC-456

Walking aids utilization and cognitive function after neck fracture rehabilitation program

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Introduction.– Hip fracture is common cause for admission of elderly patients to a geriatric convalescence unit (GCU). Cognitive impairment may be a limiting factor, but not a reason to exclude these patients from a rehabilitation program (RHB).
Objective.– To analyse the influence of cognitive impairment in the use (and type) of technical devices for walking after hip fracture and also the efficiency index (EI) of the rehabilitation process.
Patients and methods.– Two hundred and eighteen patients admitted to GCU after hip fracture were reviewed. Registered data: age, gender, Barthel (admission and discharge), Fosltein Mini-Mental (MMSE), Charlson, surgery, medical complications and discharge destination. According to MMSE scores, patients were grouped in ≤ 10 (severe cognitive impairment), 11–21 (moderate), ≥ 21 (no impairment). EI (ratio of the Barthel and the length of stay: < 0.50 (low intensity rehabilitation); ≥ 0.50 (high intensity rehabilitation).
Results.– Mean age 82.9 ± 7.1; women 165 (75.6%). Mean Barthel, MMSE, and Charlson were 32.8 ± 16.0; 19.54 ± 7.51 and 1.48 ± 1.34, respectively. Surgery: osteosynthesis 162 (74.3%), prosthesis 56 (25.6%). According to cognitive function there were 117 (53.6%) no impairment, 75 (34.4%) moderate, and 26 (11.9%) severe. In the same order, at discharge: mean Barthel 78 ± 18.2, 59.6 ± 24.1, 32.9 ± 23.4; walking ability 115 (98.2%), 57 (76%), 8 (100%) ($P < 0.001$); use of walking aids 110 (94%), 54 (72%), 8 (30.7%) ($P < 0.001$); Type of device for walking: walker 58 (49.5%), 44 (58.6%), 8 (30.7%) ($P < 0.001$); cane 52 (44.4%), 10 (13.3%), 0 (0%) ($P < 0.001$); EI: 0.85 ± 0.49, 0.49 ± 0.42, 0.22 ± 0.26, ($P < 0.001$). There were no significant differences between groups in medical complications and discharge destination.
Conclusions.– All groups showed improvement in functional capacity after RHB, although this is lower in patients with severe cognitive impairment. Use of walking aids is significantly lower in the severe cognitive impairment. Lower use of walking aids in severe cognitive impairment may be because perhaps these patients are less able to learn the correct use of the devices, and to lower functional capacity. Walker was necessary in all with severe cognitive impairment who achieved walk ability.

PC-457

Quantification of the pain and characteristics of patients with hip fracture

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Aims.– Quantification of the pain by means of numerical scale to patients with hip fracture and its relation with the realized surgery.
Method.– A descriptive study of 135 patients collected during the acute phase in a orthogeriatric unit. We analysed the variables age, sex, functional situation measured by Barthel's index, mental scale by means of Pfeiffer scale, the type of previous residence and to the discharge, visual analogy scale (VAS) of pain (from 0 to 10), and type of surgery.
Results.– The middle ages of the patients were 83.49 years, 74% were women (100 patients). The Barthel index before the fracture was 65.48 and to the discharge it changes to 33.87 and the average mistakes were 3.56 in the Pfeiffer scale. Before fracture up to 57% of patients were living alone or with couple, and in nursing homes 20%, but to the discharge the 43% of patients go to definitive residences or temporary stays. The pain according to the VAS was before the surgery of 7.57 and after surgery was 4.32, and to the discharge was 2.41. Of the 30 patients with dementia, 19 show signs and gestures of pain before the surgery, and only 3 after they were operated. In 86 patients, the surgery was trrochanteric nails (63.7%), in 41 partial protheses (30.4%), in four total protheses (3%), in three hip screws (2.2%), and in one a nail-plate was used (0.7%). The trocantheric nails wear associated with more pain, and the total protheses the less one.
Conclusions.–
– Usually the pain is underdiagnosed and under treated in elderly patients. Especially in patients with dementia.
– It is necessary to use scales of evaluation of the pain in ours patients who allow us to evaluate the treatment and to fit it according to the symptomatology that they present.
– A high incidence of patients with hip fracture lead to partial or permanent institutionalisation.
– The type of fracture and the practiced surgery can determine the appearance of more or less pain, and this influences in the rehabilitation of the patients.

PC-458

Fall. Profile of the geriatric patient who falls

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Objective.– To determine the incidence of falls and identify risk factors both intrinsic and extrinsic in hospitalised geriatric patients.
Patients and methods.– Descriptive study of patients who fall at Sacred Heart Hospital from April 2010 to April 2011. Variables analysed demographic, income unit (acute, convalescent, rehabilitation), functional status (Barthel Index) and cognitive (Test Pfeiffer), intrinsic factors related to falls. Excel database. SPSS statistical analysis.
Summary.– Total of 56 falls, the incidence is 5.1% of hospitalised patients. 55.4% men, mean age 78.3 ± 11.05 years. Had severe functional impairment (Barthel I: < 45) 73.2% and 51.9% cognitive impairment. Unit Activity: 50% rehabilitation, 25% Convalescence acute unit 23.2%. The fall schedule in the morning (44.6%), Monday to Friday (64.3%). The most common: 71.4% and bath room 25%. Extrinsic factors: flat floor and inappropriate footwear 45.2% 21.4% fall mechanism: slip 49.1% 38.2% sitting. The remaining 73.2% $n \leq 1$ minute 71.1% subject no, no technical support 60%. Intrinsic factors: polypharmacy: 93%. The most common antihypertensives: 67.9%, antidepressants, 44.6%, neuroleptics, benzodiazepines 35.7% and 38.2%. Comorbidity: neurological (67.1%), musculoskeletal (62.5%). Statistically significant: 68% of falls in patients not included in morning and evening hours, more frequent in the room or bathroom, while sitting or rising. RHB Unit and severe functional impairment. Lack of technical assistance for ambulation with inappropriate footwear and smooth surfaces. No relationship between functional status and cognitive activity, and mechanism of fall, or aids used, or existence of physical containment.
Conclusions.–
– The geriatric patient profile that falls are a patient with functional impairment was admitted to the Rehabilitation Unit.
– The efficacy of geriatric assessment and intervention will improve if we detect patients with intrinsic risk factors for falls, polypharmacy, comorbidity, neurological and musculo-skeletal.
– After detection of risk, we control the extrinsic factors: increased vigilance in the morning in the patient's room, advise use of proper footwear, avoid smooth floors and slippery, provide technical assistance to mobilize, to assess physical restraint, according to functional status and cognitive impairment of the patient.
– Active risk detection will allow us to reduce the incidence of falls and their consequences.

PC-459

The effects of a 12 weeks resistance training program on muscle strength, balance, gait and falls in the oldest- old frail institutionalised patients

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Background.– Progressive resistance exercise training has been shown to increase muscle strength in frail patients. Limited information is available about its effects on balance, gait and falls in the oldest old frail population.
Objectives.– To examine the effects of a12 weeks resistance program on muscle strength, balance, gait and decrease in number and risk of falls in oldest old frail institutionalised patients.
Participants.– Eight institutionalised elderly men and woman (age 92 ± 5 yrs; Body Mass Index 23 ± 5.2, mean Barthel Index, 88.2).
Methods.– Participants were included in the study using Fried Criteria. Measurements of upper and lower limb muscle strength (hand grip, flexor hip and knee extensor strength), gait speed (5 m walking test), dual task paradigm (verbal and arithmetic) balance performance (FICSIT-4Tests of static balance: parallel, semi-tandem, tandem, and one-legged stance tests) as well as Time up and Go and rise from a chair tests were conducted before and after intervention. Before starting the program all participants received Individual medical evaluation and were assigned to a twice-weekly 12 weeks progressive resistance program (8 to 10 reps of 40 to 60% of 1RM) combined with balance retraining exercises progressing in difficulty.
Results.– Significant decrease of incidence ($P < 0.01$) and risk of falls ($P < 0.001$) were observed. Strength training significantly increased hip flexor (25% $P < 0.01$) and knee extensor strength (22%; $P < 0.01$) and rise from a chair test (70%; $P < 0.01$). Strength training-induced gains were also observed in gait velocity and dual task performance (8% and 17%; $P < 0.10$ and $P = 0.09$, respectively). Significant increases in semi-tandem static balance test ($P < 0.01$) were also observed.

Conclusion.– Twelve-weeks progressive resistance program combined with balance exercises have positive effects on incidence and risk of falls, muscle strength, dual task performance, gait velocity and balance performance in very elderly institutionalised frail patients.
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PC-460

Nonagenarian patients with hip fracture: are they different of younger?

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Introduction.– There are very few studies about nonagenarians with hip fracture. Some of them discuss about the prescription of surgery in these patients depending of prognosis, but the differences between nonagenarians patients and younger were not evaluated.
Aims.– To compare the nonagenarian patients and younger admitted in an orthogeriatric unit during 2009.
Methods.– Retrospective observational study.
Results.– One hundred and twenty-one patients (82% women) were admitted in 2009 in the orthogeriatric unit, of them 29 (27.2%) were over 90 years.

	Over 90 years (%)	Under 90 years (%)	
Hospital stay beyond 10 days	39.10	40.70	$P > 0.05$
Readmission at first month	34.80	17.28	$P > 0.05$
Anemia requiring transfusion	47.01	40.60	$P > 0.05$
Malnutrition	59.70	48.18	$P > 0.05$
Delirium	56.60	52.40	$P > 0.05$
Mortality	9.09	7.95	$P > 0.05$

Conclusion.– The nonagenarian patients admitted in our orthogeriatric unit in 2009 were no different of younger. Age should not be the parameter to apply different management of the patients admitted in an orthogeriatric unit.

PC-461

Fear of falling in a geriatric rehabilitation unit and its correlation with functional status

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Introduction.– Functional recovery requires a multidimensional approach. Patients often demonstrate Fear of Falling (FoF), which deals to a restriction on their activity, a worse quality of life, isolation and depression. The prevalence in elderly patients in the community is between 21% and 85%, with few studies in hospitalised patients.
Objective.– To determine the prevalence of FoF in patients admitted to our unit and to determine if there is any correlation with the functional level.
Methods.– Observational study of prevalence. Demographic data, comorbidity, functional status. FoF dichotomous question (yes/no) and the translation of the questionnaire Falls Efficacy Scale (FES-International) (FES). Inclusion criteria: patients admitted from Feb 1st on, and discharged before May 1st, able to walk/stand. Excluded dementia, confusion or inhability to understand the test.
Sample description.– Population attended 57, selected 29 (51%), losses seven (12%), studied 22 (39%), mean age 77.4 years (59–90) sex: men 36.4% women 63.6%, average stay 29.95 days (5–53), comorbidity (Charlson) low ($<=2$)54.5%; high (3 or $>$), 45.5% Barthel Index: (BI) (Average), Basal: 88.41, 54.77 Admission, discharged 82.5, depression: yes 40.9%; no 50.1%, fear of falling (dichotomous): yes 45.5%; no 54.5%.
Results.– FES at admission: no fear (FES $<$ 70) 68.2% fear (FES $\geq$ 70) 31.8% FES at discharge: 72.7% No Fear 27.3% Fear There are differences between FES at admission and discharge ($P = 0.003$) (CI: 15.57 to 57.24). BI mean (admission) in patients with Fear (FES $\geq$ 70) is 48'57 and FES ($<$ 70) of 57.67. At discharge, the BI mean is 65 with fear, and without fear 89. Differences are not related to admission (significance = 0.404 (CI–32.21, 14.02) or discharge ($P = 0.099$, ((CI–52.4, 6.08). There is a correlation between the dichotomous question of FoF and FES on admission ($P = 0.010$).
Conclusion.– No relation between the FES values on admission and discharge and Barthel values, possibly due to insufficient sample. A correlation exists between fear of falling defined by FES and dichotomous question. The complexity of answering the FES has limited the number of people to be evaluated, so the dichotomous question may be a good screening tool.

PC-462

Descriptive study of falls in a hospital complex

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Objectives.– Analyse/understand the patients with falls. Emphasize the importance of comprehensive geriatric assessment (CGA).
Description and method.– Cross-sectional descriptive study of falls occurred during the year 2010 in a hospital complex consisting of three centres within Palma de Mallorca (a Mental Health hospital and two social sanitary hospitals), in collaboration with nursing staff and the Quality Unit. The screening method used to assess the fall risk is Downton scale and the entry is logged in a specific fall notification register.
Results.– The total number of falls of the study is 204, with 139 in health centres. The overall incidence of socio fall, considering there were 2.268 admissions, is 6.1%. Eighty percent of patients who fell had a Downton greater than or equal to 3. Fifty-five percent had had previous falls. Fifty-one percent were accompanied at the time of the fall. By gender: women 40% men 60%. By age range: $<$ 65 years = 23%, 65–75 years = 25%, 76–85 years = 37%, $>$ 86 years = 15%. By the level of dependency: total 17%, severe 19%, moderate 15%, light 45%, 4% autonomous. By the day of the week: working 67%, saturday 14%, 19% public holiday. By staff shift: 44% tomorrow, 35% late, 21% night. By activity: up 35%, 4% bed, take something out of bed 5%, walking 39%, 4% phase, others 6%. By place of the fall: 61% room, bathroom 13%, 7% hallway, living room 12%, 6% foreign. Fifty-five percent suffered some type of injury.
Conclusions.– We may consider as risk group patients with Downton greater than or equal to 3, ages 76 to 85 years old and with a slight dependence. Higher risk activities are getting up and walking, alone or accompanied (there are no significant differences), with the patient's room being the where most falls occur. Finally, we should mention that falls are a marker of frailty in the elderly. The identification and early intervention in risk factors is essential for prevention in those affected, for which is necessary health education (for the patient, family and profes-

sionals), the correction of intrinsic factors and specific prevention of falls.

PC-463

Eleven months of attention to femur fracture patients in an acute geriatrics unit

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Objectives.– To describe results of femur fracture patients older than 70 years old in an Acute Geriatrics Unit (AGU) 1st June 2010 to 30th April 2011.
Patients and methods.– Descriptive study of age, gender, origin, discharge and 6 month follow-up, Lawton Index (LI) Barthel Index (BI), Charlson Comorbidity Index (CI).
Results.– One hundred and thirty one patients; 76.3% women, 84.3 years, 75.6% from home, 20.6% from residence, LI 2.3, IB previous 72, discharge 29.9. IC 2.41. Extracapsular fractures: 53.5%. Preoperative time 2.11 days; 70.2% < 48 hours. Mean hospital stay 6.85 days. Mortality 1.5%. Discharge destination origin: 49.6%, Convalescence Unit 36.6%. Six-month follow-up: 48 patients; 75% women, 83.42 years. Convalescence unit 54.1%, no difference compared to rest. Mortality 22.9%, statistical significance: greater LI ($P = 0.0006$); and younger age ($P = 0.04$) in patients coming from home; lesser BI ($P = 0.06$) and LI ($P = 0.04$) in residence patients.
Conclusions.–
– AGU patient: woman 84'3 years old, coming from home, LI 2'3, BI 72, CI 2'41, with extracapsular fracture. Hospital stay 6.85 days.
– Six-month mortality: 22'9% related to greater LI and younger age in patients coming from home and lesser BI and LI in institutionalised patients.
– Discharge to: convalesnce unit: 36.6%. At 6 months with no difference compared to the rest.

PC-464

Hospital falls and its consequences

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Introduction.– A fall can be defined as the result of any event which precipitates the individual to the ground against his will. Can be sudden, unintended and unexpected, being the patient alone or accompanied. Nowadays is one of the major geriatric syndromes given its frequency, multifactorial etiology and the consequences that entails. In patient falls are an empirical fact and constitute a health problem.
Description and methods.– Cross-sectional descriptive study of falls occurred during the year 2010 in a hospital complex consisting of three centres within Palma de Mallorca (Mental Health hospital and two social sanitary hospitals), in collaboration with nursing staff and the Quality Unit. The entry is logged in a specific fall notification register.
Objectives.– Analyse/understand the patients with falls. Analyse/understand the types of injuries and their prevalence.
Results.– The total number of falls of the study is 204, with 139 in social sanitary centres. Women 40%, men 60%. Eighty percent of patients who fell had a Downton greater than or equal to 3. Fifty-five percent suffered some type of injury (contusion 78%, 25% open wounds, fractures 7%). Nine percent of the injuries required transfer to an acute care hospital. Ninety-eight percent do not suffer from impaired consciousness. The most common is bruising on the head (33.70%), lower limbs (16.85%), face (14.60%) and upper limbs (12.35%). The most frequent location of the open wound is the lower limbs (32.14%), upper limbs (21.42%) and head (14.28%). The most frequent location of the fracture is in the hip (37.5%) and upper limbs (37.5%).
Conclusions.– Nine percent of falls cause serious injury with the following consequences: transfer to acute care hospital, increased hospitalisation, temporary or permanent disability, complication of the prognosis, diagnosis actions and appropriate treatments.

PC-465

Do geriatricians improve outcomes by identifying frailty?

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Introduction.– Since Isaacs introduced the concept of the Geriatric Giants, clinicians have debated the concept and use of Geriatric Syndromes, or as they may be better termed Frailty Syndromes (FS). There is no clearly agreed list of what constitutes such a Syndrome, however the American Geriatric Society have proposed a list of Syndromes that all Medical Students should receive training on. As part of an Audit into the Quality of Care in Elderly Frail Patients in a busy UK Teaching Hospital, data was collected which allowed investigation of the relationship between FS and outcomes.
Methods.– Data was collected for the five oldest patients on each of the four Geriatric Wards (GW) and the four General Medical Wards (GMW), on a randomly chosen date (Assessment Wards, Speciality Wards and StePC-down Wards were excluded). Data included age, gender, length of stay (LOS), the presence of FS (Pre-admission, Identified Post-Admission, Missed diagnosis seen on note review, and Management of New FS).
Results.–
Basic data on presence of Frailty Syndromes (FS).

	Geriatric Wards	General Medical Wards
n	20	20
Mean age (years)	87.9	71.65
Gender (M:F)	4:16	11:9
Median LOS (days)	9	10.5
Mean premorbid FS	3.45	1.5
Mean newly diagnosed FS	1.35	1.05
Mean missed FS	0.45	0.8
Mean total FS	5.25	3.35

There was a significant difference in the number of FS Newly Diagnosed vs FS Missed between the two groups ($P = 0.0035$). There were a total of four newly diagnosed FS, which were not investigated or treated in the GW group, compared to nine in the GMW group ($P = 0.049$). There was one death in each patient cohort.

Correlation between length of stay (LOS) and presence of Frailty Syndromes (FS).

	Geriatric Wards	General Medical Wards	Pooled
Age vs LOS	R = 0.13, P = 0.585	R = 0.17, $P = 0.414$	R = 0.16, $P = 0.32$
Premorbid FS vs LOS	R = 0.5, P = 0.025	R = 0.65, $P = 0.0019$	R = 0.51, $P = 0.0008$
Newly diagnosed FS vs LOS	R = 0.33, P = 0.15	R = 0.66, $P = 0.0015$	R = 0.41, $P = 0.0086$
Total FS vs LOS	R = 0.68, P = 0.001	R = 0.74, $P = 0.00019$	R = 0.61, $P = < 0.0001$

Discussion.– More FS were identified amongst those patient on GW. Importantly, a smaller proportion of FS were missed on GWs, and a smaller proportion were not investigated or treated. In addition there was no correlation between age and LOS, however there were significant, positive correlations between the presence of FS and LOS. This would suggest that the identification and treatment of FS is important in reducing LOS in frail older patients.

PC-466

Conditions of fragility in acts of daily life and old people

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Introduction.– The Fragility, as condition and as geriatric syndrome, is a motive of investigation and search of methods for precocious detection. The absence of definition and univocal criteria causes demonstrated questions, also, in the educational activity that the students themselves can raise. The criteria of fragility more widely spread could be related to daily activity and easily measurable anthropometric parameters. Thus, taking into account some every day conditions of old people and simple anthropometry, the above-mentioned relation might be demonstrated if it existed.
Aims.– Comparing the relation between the presence of Fried's fragility criteria and fragility detected in acts of the daily life, represented by eight conditions that imply: grip strength, mobility, transferences and simple anthropometric parameters in old people of Estremadura.
Methods.– A structured survey was elaborated in order that the students used geriatric assessments tools and to target the presence of Fried's fragility criteria and its relation with acts of the daily life (opening a bottle, a door, holding a one-litre container, stapling a few sheets, etc.) that was performed by the students of medicine of the Uex, as the practical work for Geriatrics, to 438 persons greater than 65, known and interested in collaborating in their training; who were distributed by range of age. The information was organized in frequency charts and analysed with SPSS.
Results.–The conditions of fragility estimated by both methods increase with the age in both sexes. They presented some criterion Fried's fragility 55% and 59% the criteria proposed by us. The persons with criteria of fragility were 26% (65–75); 47% (76–85); 66% (86–95) y 89% (> 95) with both methods.
Conclusions.– The observation gives acts of the daily life can serve to estimate the fragility in persons greater than 65 and good guard (keeper) relation with Fried's criteria.

PC-467

Early marquers of fragility evidenced in daily life acts

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Introduction.– Teaching a subject on Geriatrics in undergrade implies the acquisition of theoretical and practical knowledge. VGI and fragility in the elderly was extremely interesting to the Medicine and Occupational Therapy students at the Uex during the 2010–2011 academic year, in order to develop everyday activities and simple anthropometric parameters in older people.
Aims.– To carry out a practical and academic job in undergrade that would allow the use of VGI instruments and the chance of getting familiar with the Fragility criteria once the basic concepts have been assimilated.
Methodology.– The teachers made a survey that the students later tried on elderly relatives and acquaintances who were willing to participate. The results were organized by Fried's fragility criteria and 6 everyday conditions related to the latter and to simple anthropometric parameters, and then analysing their connection to a sample of 782 people over 65 years old, classified according to age and sex. The data was the analysed with SPSS.
Results.– There was a satisfactory co-relation between Fried's criteria and the Fragility conditions observed in daily activity and simple anthropometric parameters. The most noticeable in all groups was the inability to get up from a chair and then open a can with a can opener and the inability to staple pages together. The least frequent was BMI below 20 and diameter of thighs below 31 cm in both sex and age groups.
Conclusions.– Inability to get up from a chair without armrest or help can be a sign of fragility at any age above 65 years old, both sexes, as has been noted in other work: also the lack of hold described by Fried, represented in this case by the inability to open a can with a can opener or staple. The diameters of the thigh below 31 cm or BMI below 20 were the last results from this sample.

PC-468

Importance of the delay of surgery in elderly patients with hip fracture

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Objectives.– To evaluate the effect of time to intervention of hip fracture on different outcomes; hospital stay, number of complications and impact on the further evolution in patients over 65 years.
Methods.– Retrospective study. We selected a random sample of 104 patients assessed by Orthogeriatrics Unit between 2008 and 2010 hospitalised for hip fracture, setting a median time from the date of admission to date of surgery, dividing the subjects into two cohorts (early surgery compared with delayed intervention). The variables have been transformed into qualitative values to process the data with the statistic test *t* Student in SPSS version 17.
Results.– There are 55 patients in the early intervention group (surgery within 3 days) and 49 in the late intervention (surgery after 3 days). The average age in both groups ranged from 81 to 90, 89.1% and 87.8% were women respectively. In the subgroup of early intervention, the average stay was 7 to 10 days (60% of this group), while in the delayed intervention was more than 10 days (79.6% in the second group). Among those operated later, 8.1% had urinary tract infection compared with 1.9% ($P = 0.047$), similarly, the 4% of the first group had respiratory infection compared with 1.8% (P: 0.057). The biggest difference concerns the appearance of Delirium and subsequent readmission rate (30.6% of delirium compared with 18.1%, $P = 0.051$) (36.7% of readmissions compared to 16.3%, $P = 0.043$).
Conclusions.– The increased incidence of hip fracture in women (with higher average age) was the expected for the geographical and social situation. Differences have been no significant in the case of respiratory infection (probably due to small sample size). The results for urinary tract infection, delirium and readmission rate were statistically significant. We emphasize the importance of early intervention as the delay is a predictor of infectious complications, delirium, extends the length of hospital stay and increases the readmission rate and therefore, worsen the prognosis of our patients.

PC-469

Prevalence of falls and fear to fall in a population hospitalised by other causes in a geriatrics' service

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Objective.– To know the prevalence of antecedents of falls, factors of risk, comorbility and a fear to fall syndrome in elders hospitalised in the geriatrics' service.
Methods.– Made descriptive and cross-sectional study between August, 2010 and January, 2011. Collection of data in varia-

bility's charts. Application scales FES I (16–19: little fear; 20–27: intermediate fear; 28–34: greater fear). Statistical analysis SPSS.
Results.– Eighty-three patients interviewed, middle age of 84.2; 62.7% women. Moderate/severe dependency: 38.6%; 71% are able to walk and more than a half to leave home. Half of them showed fear to fall and recognized less mobility because the fear to fall: 33.7%. Patients with previous falls: 27 (32.5%). Most of them had one fall (66%). With consequences in 27% of the cases (fractures: 4.8%). Moderate/severe dependency: 70.3%. There is no relation between falls and living in residences, suffering dementia, previous neurological alterations or psychotic medication. There is a relation between Barthel moderate to severe (P 0.012), less mobility caused by fear (P 0.015) and to have fear to fall (P 0.0042). FES I (median) 19 in all groups; 22.5 in those with antecedents of falls, and 37 in those with moderate-severe dependency. The activities that concerned the most to those with antecedents of falls are to walk out home, to walk on a slippery surface over one irregular surface, and to step up and down a ramp (50%), being this last one the most important to all the analysed group (33.3%).
Conclusions.– High prevalence of antecedents of falls in our population (a third part of the patients) in elders of 70 years old, that are consequent with the literature published. In the analysed sample, those elders with moderate – several dependencies are those that shown more fear to fall, that is the reason why we recommend there should be programs to avoid them. The activities related to balance out of home are the ones that produce greater preoccupation in our population.

PC-470

Characteristics and circumstances of falls in a public hospital

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Objective.– Preventing hospital falls and injuries require knowledge of fall and injury circumstances. Our objectives were to describe the epidemiology of hospital inpatient falls, including characteristics of patients who fall, circumstances of falls and fall-related injuries.
Methods.– The study was conducted in a urban public Hospital in Madrid from Oct 2009 to June 2010. Data on patient characteristics, fall circumstances, and injury were collected through interviews with patients and/or nurses and review of adverse event reports and medical records. All inpatient falls reported for medicine, geriatric, cardiology, neurology, oncology, haematology and surgery were included. Falls in the psychiatry service and falls during physical therapy sessions were excluded. Statistical analysis SPSS 14.0.
Results.– In the 9 months, there were 126 falls in 108 patients (nine patients had two falls) on a total of 4145 patients. The incidence of falls was 2.6% cumulative. Incidence rate was 0.24×100 persons/day. Among the falls, 67.5% occurred in males (85 males falls in 2350: 3.6%) and 32.5% of falls in women (23 women falls in 1795: 2.3%) $P = 0.01$. 82.4% of patients had > 65 years. Mean age of patients with falls: 75.3 (11.8). Many falls were unassisted (76.2%) and occurred in the patient's room (69%), during the overnight (43.5%) and during ambulation (67.4%). Among the patients, 22.4% had an active and independent mobility and 63.2% needed partial assistance in mobilizing needed aid and 14.1 total. Security measures implemented were: 48.4% handrails chest containing 4.8%, 0.8% containment and 1.6% lower limb upper limb restraint. 48.4% handrails; chest containing 4.8%; 0.8% and lower limbs containing.
Conclusion.– High priorities should be allocated in view of identifying patients at risk of falling and implementing fall prevention strategies and interventions.

PC-471

Osteoporosis in persons with intellectual disability: an initial screening program

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Introduction.– The population of people with intellectual disability is increasing and living longer. Compared with the general population, people with ID experience higher levels of health needs, often unrecognised. One such aspect is bone health. Despite increased awareness of osteoporosis, and studies documenting increased prevalence at an earlier age in this population, strategies for falls and fracture prevention have largely ignored this group.
Methods.– A falls and fracture prevention service led by a Clinical Nurse Specialist in Gerontology was recently extended to cover those residents on campus with ID. Comprehensive post fall review was undertaken on all residents referred with recent fall.
Results.– Chart review of 130 residents, age range 37–89, revealed an average of more than two risk factors for osteoporosis including reduced mobility, chronic anticonvulsant use, hypogonadism, prior fractures and Down's syndrome. 45 people have been referred and have received comprehensive evaluation including assessment of risks for osteoporosis and appropriate therapies started. Of those that have completed DXA scans, 55% had osteoporosis, 27% osteopaenia and 18% had normal scans. Fifty percent of those with osteoporosis had T-Scores less than –3.0.
Conclusion.– Given the high rate of osteoporosis documented among adults with ID, screening for and treatment of this disease should be made a priority to prevent morbidity, mortality and improve quality of life. Specific recommendations for those persons with ID should be incorporated into national strategies for falls and fracture prevention.

PC-472

Effects of electrical stimulation and exercise therapy on lower limb muscle mass measured by ultrasonography

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Long-stay community dwelling elderly patients frequently develop a decrease in strength and muscle mass, which can be improved by exercise. Neuromuscular Electrical Stimulation (ES) and Weight Lifting might also be effective in this population. This study shows the effect of different lower limb rehabilitation programs (three sessions/week for 14 weeks) on muscle mass and muscle perimeter in 89 elderly. Twenty-five men and 45 females (age range 75–96 years) were evaluated. Participants were randomly assigned to one of four groups: Control Group (C), Electrical Stimulation on *Quadriceps Femoris* (ES), Weight lifting – Extension of *Quadriceps Femoris* (CT) and superimposed electrotherapy + weight lifting on *Quadriceps Femoris* (CT + ES). Outcome variable after rehabilitation was: Muscle perimeter of *Rectus Femoris* on both lower limbs, measured by Ecography. Right *Rectus Femoris* perimeter significantly improved in ES ($P < 0.05$), CT ($P < 0.05$) and CT + ES ($P < 0.05$) groups. There was no significant difference in C group. Left *Rectus Femoris* perimeter after the intervention was not significantly different between groups. In long-stay community dwelling elderly CT group, ES group and KT + ES group, improved *Rectus Femoris* perimeter in dominant limb. Muscle *Rectus Femoris* perimeter was improved by all treatments whereas C group, on dominant limb after 14 weeks of treatment.

PC-473

We are less likely to fall if we stay positive and pay attention!

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Introduction.– One-third of people over the age of 65 experience at least one fall each year. This is a major cost to healthcare systems worldwide and has significant adverse impacts on the older person. However, current intervention strategies only reduce falls risk by about 30%. It has become important for healthcare providers to find novel intervention targets, which reduce falls risk and promote "successful ageing". The protective role of Positive Affect has been shown in relation to cardiovascular diseases and frailty, whilst other studies report that the attention-related changes that occur during ageing increase the risk of falls. This study aims to examine the role of Positive Affect and Sustained Attention in falls risk.
Methods.– A cross-sectional, convenience sample of 566 community-dwelling men and women aged greater or equal to 60 years underwent a comprehensive geriatric assessment, including physical, psychosocial and cognitive measures. Positive Affect was measured using the CES-D. Sustained attention was assessed using reaction times and errors made during a fixed Sustained Attention to Response Task (SART). Falls history in the past year was self-reported. This study was ethical approved.
Results.– Sixty-seven percent of participants were rated as Positive and both Positive Affect and increases in the variability of sustained attention were strongly associated with falls history in older adults ($P < 0.001$ and $P < 0.01$, respectively). Regression modelling revealed that variability of sustained attention was a retrospective predictor of falls in the previous year (RR = 1.14; 95% confidence interval (CI): 1.03–1.26) and that Positive participants were more than twice as likely not to have experienced a fall in the past year (RR = 2.20, 95% CI: 1.11–4.36). In addition, Positive participants had significantly reduced levels of loneliness, anxiety and pain, increased levels of attention and cognition and no reported symptoms of orthostatic hypotension.
Conclusions.– Greater variability in sustained attention and Positive Affect have significant and opposing impacts on falls risk in older adults. These cognitive and psychological measures are modifiable and may provide novel targets for identifying older adults at risk of falls, allowing for early detection, intervention and promotion of "successful ageing".

PC-475

Sarcopenia in elderly diabetic men

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Introduction.– Sarcopenia is defined as age-related loss of muscle mass and function. Due to the structural and functional regression of the muscles, mobility decreases and frailty, falls and morbidity increase. It is indicated that the interactions of neurological, environmental, nutritional, hormonal and genetic factors are important in the development of the sarcopenia. Persons who have diabetes mellitus tend to have an accelerated aging process and loss of muscle mass and functions may occur earlier with the influence of various factors in these patients.
Objective.– To assess the presence of the sarcopenia in the elderly diabetic patients and to compare their results with the elderly non-diabetic subjects, younger diabetic patients and healthy subjects.
Methods.– Sixteen elderly diabetics, 16 younger diabetics and 16 elderly non-diabetics were enrolled to our study. The data of our previous study in 60 healthy men were used as a control group. All the subjects were evaluated firstly with exercise testing and electrocardiography. Isokinetic leg extension and flexion tests from both lower extremities were done by Cybex 350 isokinetic dynamometer in eligible subjects. The mean value of muscle strength parameters was defined as average muscle strength (AMS). Fat free mass was detected by bioelectric impedance analysis and was corrected according to body surface area to determine fat-free mass/body surface area (FFMBSA). Clinical and demographical data and laboratory values were evaluated in all the cases and were used in comparison and correlation analyses.
Results.– FFMBSA was lower in younger diabetic patients, elderly diabetic patients and elderly non-diabetic patients compared to healthy subjects. Fat free mass, FFMBSA and basal metabolic rate were lower in elderly non-diabetic patients than healthy subjects. FFMBSA was inversely correlated with age ($r = -0.471$, $P < 0.001$). AMS was lower in elderly diabetic patients compared to younger diabetics but the difference was not significant. AMS was similar in elderly diabetic and elderly non-diabetic subjects. AMS was significantly lower in elderly non-diabetic subjects than younger diabetic patients. AMS showed inverse correlation with age ($r = -0.521$, $P < 0.001$), spot urine microalbumin ($r = -0.375$, $P = 0.011$) and functional capacity ($r = -0.564$, $P = 0.001$) and positive correlation with GFR ($r = 0.377$, $P = 0.011$), metabolic equivalent ($r = 0.534$, $P = 0.002$), albumin ($r = 0.37$, $P = 0.01$) and haemoglobin ($r = 0.379$, $P = 0.009$). There were no significant correlation between muscle mass and strength.
Conclusion.– Our results showed that muscle strength of elderly diabetic persons was similar to that of elderly non-diabetic persons but slightly lower than younger diabetic patients. Among factors determining muscle strength, older age seems to be more important than presence of diabetes. Muscle mass (corrected for body surface area) of younger diabetic, elderly diabetic and elderly non-diabetic patients were lower than muscle mass of healthy persons. Albumin, haemoglobin, spot urine microalbumin and exercise tests parameters can be useful markers for assessment of sarcopenia.

Miscellaneous 2//*Miscelánea 2*

PC-476

Palliative management of bowel obstruction in elderly

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Objective.– Palliative management of bowel obstruction differs widely from traditional clinical approach, and is a common cause of urgent admission to a Palliative Unit.
Methods.– Retrospective description of the 17 cases of suspected bowel obstruction out of the first 218 patients admitted to a Palliative Unit. Data were processed for statistical analysis with SPSS-11.
Results.– Vomiting secondary to bowel obstruction was the main symptom of 17 out of 218 patients admitted to the unit. Fifty-nine percent were above 75 years, 71% women and most prevalent tumours were pelvic (46% gynaecological, 6% urological, 19% colonic). Most patients (76, 4%) had survived for more than a year before diagnosis and received active treatment (59% chemothera-

py, 47% radiotherapy, 82% surgery with 1 colostomy and 1 endoscopic stenting). Functional status measured by Karnofsky and functional geriatric Cruz Roja Scale, average stay and prognosis measured by PAP score had great variability. Sixty-nine percent was due to mechanical obstruction and not to electrolytic disturbances or drug side effects. Most were receiving strong opiates (fentanyl 33%, morphine 27%, oxicodone 23%). Two patients (12%) developed concurrent skin fistulae. Only three (17%) patients could be discharged home, two (12%) of them before sub obstruction could be solved by enteric transit. Most of then received dexamethasone (94%), haloperidol (53%) or scopolamine (35%), but only two (11%) required octeotride. Three (17%) patients died from aspiration pneumonia. Most patients needed midazolam (70%) or levomepromazine (11%) for agonic sedation. Nasogastric tube inserted at the emergency room in four patients (23%) could be removed in all cases before palliative treatment, and subcutaneous access was preferred in 12 (70%) patients, despite some of them still carried permanent central vein access.
Conclusions.– Palliative management of bowel obstruction gives good symptom control along with low aggressive diagnostic and therapeutic approach. It is a very heterogenic group of patients regarding to prognosis and in hospital stay, who benefit largely from admission to a Palliative Unit.

PC-477

Older colon cancer patients have more co- morbidities, are vulnerable and have a higher risk for complications, longer hospital stay and increased mortality

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Introduction.– Almost half of Norway's 2500 yearly colon (including rectosigmoid location) cancer patients are above 75 years. This group frequently has co-morbidities in addition to age-related risks, which may cause more surgical complications. The aim of the study was to explore the significance of predetermined factors on complications, length of post-operative stay (LOS), and death following colon cancer surgery.
Method.– Data was collected prospectively from 2007–2009 in a community teaching hospital. Follow-up information was recorded through March 2011. The study consisted of 235 patients, 40 below 60 years, 115 aged 60–80 and 80 above 80 years; 53.6% were males. The following variables were examined: age groups, body mass index (BMI), albumin, haemoglobin, creatinine, co-morbidity as presence of chronic diseases, and American Society of Anesthesiologists' (ASA) scores. Uni- and bivariate analyses were performed using PASW SPSS to evaluate the impact of these variables on the results.
Results.– Age related conditions and co-morbidities increased with age and consequently complications ($P < 0.001$), LOS ($P < 0.001$), and death ($P = 0.003$) were age related. Other variables were significantly associated with postoperative complications: low albumin ($P = 0.011$), low haemoglobin ($P = 0.028$), co-morbidity ($P < 0.001$), high ASA score ($P < 0.001$), longer LOS: low albumin ($P < 0.001$), low haemoglobin ($P = 0.027$), co-morbidity ($P = 0.004$), high ASA score ($P < 0.001$), and death: low albumin ($P < 0.001$), low haemoglobin ($P < 0.001$), co-morbidity ($P = 0.006$), high ASA score ($P = 0.003$). High creatinine was only related to longer LOS ($P = 0.017$). Among the patients, 64.7% (11/17) with BMI < 20 developed complications after surgery. Death occurred more often during the first year after surgery in patients older than 60-years.
Conclusions.– Older colon cancer patients have more co-morbidities and vulnerability factors thus consequently have more complications, longer LOS, and higher mortality after surgery. Preoperative assessment including a comprehensive geriatric assessment and optimising of age related risks, nutritional state, and co-morbidities should be included in the care pathway of older colon cancer patients.

PC-478

The development of undergraduate education in gerodontology in Germany, Austria and Switzerland

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Introduction.– The demographic shift within the European Union is characterised by decreasing and aging populations. The provision of routine dental care to seniors will make up a large proportion of work in dental surgeries in the future. Therefore, dental students should be prepared for this heterogeneous group of patients. Undergraduate dental education should cover prevention, diagnostics and treatment of oral disease as well as communication and patient management skills, geriatrics and gerontopsychiatry. The aim of the study is to describe developments in connection with the establishment of gerodontology in German speaking countries.
Method.– Questionnaires regarding the integration of gerodontology into the undergraduate dental course were sent twice within five years to all universities in Germany, Austria and Switzerland. A short questionnaire for all directors of dental clinics (ZZMK, $n = 37$) was supplemented by a different questionnaire for all heads of independent departments ($n = 140$). Orthodontic and pedodontic units were excluded. A reminder was sent to non-responders. Data were analysed after completion of data collection in 2004 and 2009.
Results.– Integration of gerodontology into the undergraduate dental course varied between countries both in 2004 and 2009. In all countries, didactic aspects of gerodontology were included in the lecture series of the core subjects of prosthodontics, conservative dentistry and oral surgery. More specific gerodontological content was offered by few Austrian and German but all Swiss universities in dedicated lecture series or practical extramurals in a long-term care facility. Themes of the mostly one-semester lecture series varied widely and were of an interdisciplinary character. Some universities offered additional seminaries. Germany and Austria reported an increase of dedicated gerodontological teaching since 2004. Switzerland in 2004 already offered didactical and practical training in all universities.
Conclusions.– All universities expressed an interest in gerodontological content in the undergraduate dental curriculum. In the absence of departments of gerodontology due to financial constraints and in line with the current guidelines of the European College of Gerodontology it would be desirable to have some experts of gerodontology attached to every dental clinic.

PC-479

The mobile dental clinic – a concept of dental care in the canton of Zürich, Switzerland

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Introduction.– Growing life expectancy and successful prevention have allowed people to retain their own teeth into old age. When

becoming dependent on nursing care, the widespread lack of attention to oral health of elderly people can negate lifelong achievements of prophylactic measures The mobile dental clinic mobiDent™ allows people living in long-term care in the canton of Zürich access to dental services. It comprises of three dental treatment units with x-ray facility, autoclave, consumables and reception. Within one hour, a room, which may otherwise be used as a lounge the long-term care facility (LTCF), can be converted to a fully equipped dental clinic. mobiDent™ allows the provision of dental care, within their normal environment, in the company of their carers, to mobility impaired patients. It contributes to reduced anxiety. The proximity between carers and dental staff eases the exchange of information. Costly transport to dental facilities is reduced. Aim of this study is to describe the performance of mobiDent™ in economical terms and relate these to the dental treatment provided.

Method.– Number and age of residents of LTCF was obtained from managers. Numbers of patients, age, dental findings, treatment provided, fees received and expenses were extracted from treatment and administrative records dating from 2007 to 2010.

Results.– During the observation period numbers of patients rose from 570 to 1001, annual treatment sessions from 558 to 997, income from CHF 78'923.20 to CHF 140'136.70 with a mean profit of 24.98 CHF per patient. Extractions decreased from 112 to 71. Percentage of participating residents fluctuated between 37 and 40%. Initial capital expense was donated and provisions for replacement of equipment were not made.

Conclusions.– The concept is able to cover operational costs. It is ideally suited to serve the dental needs of long-term care residents. An expansion of the service into a wider area would be desirable. There are no data on the dental care of the substantial proportion of residents, who are not making use of mobiDent™, but it is unlikely, that they are all visiting private dentists. Further research on barriers to dental treatment in this setting is required.

PC-480

Colorectal cancer in patients over 80 years old: Early results after surgical treatment

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Background.– Colorectal Cancer (CCR) is the most common digestive malignancy and, as the size of the geriatric population increases, an increasing number of elderly patients are presenting with this disease. In many cases, there have been high rates of perioperative mortality and complications in the aged, questioning the indication of surgery.

Objectives.– Study the perioperative mortality and complications in patients over 80 years old.

Methods.– A retrospective cohort study of patients included in our prospective registry, 80 years old or older with elective surgery for CRC.

Statistical method.– We studied the frequency qualitative variables and quantitative variables in mean and SD. The association variables were studied with chi-square test. Clinical variables: Age, sex, tumour location type of intervention stage, complications and postoperative (30 days after surgery).

Results.– Between January 1st 1990, and December 31st 2009, 301 patients $\geq$80 years (21.1% of total cases) underwent elective intervention; 152 males (50.5% and 149 females (49.5%) (mean age 83.5; range 80–96). Locations of tumors: ascending colon, 76 (25.2%); transverse colon, 18 (6%); descending colon, 23 (7.6%); sigmoid colon, 57 (18.9%) and rectum, 127 (42.2%). Synchronous tumors were identified in 11 cases (3.7%). Operations types: radical surgery was performed in 82.4% of the cases, with similar percentages in patients $<$ 80 years (83.7%; $P = 0.281$) and patients $<$ 70 years (85.9%; $P = 0.344$). The surgical method was chosen according to tumour locations. TNM stage: I, 58 (19.2%); II, 97 (32.3%); III, 92 (30.6%) and IV, 54 (17.9%). Main complications: wound infections, 49 (16.3%); urinary tract infections, 33 (11%); cardiovascular and respiratory, 31 (10.3%) and wound dehiscence, 12 (4%). The total perioperative mortality rates were six cases: three general complications and three surgical complications.

Conclusions.– The patients $\geq$ 80 years represent the 21.1% of our cases. The number of radical interventions is the same for the patients $\geq$ 80 years than $<$ 80 years. Correct surgical technique, medical optimisation and excellent continuity of care may contribute to small perioperative mortality; 2% in our cases. This study suggests that age is not a significant prognostic factor in patients presenting colorectal cancer.

PC-481

The prevalence of albuminuria in polish elderly population (Polsenior study)

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Introduction.– Microalbuminuria in epidemiological studies is used as a screening tool for detection of chronic kidney disease. Therefore, the aim of this study was to assess albumin excretion, in addition to serum creatinine concentration, in a representative group of Polish elderly population.

Objective.– The study was carried out as a part of the nationwide PolSenior project in the population of randomly selected 5695 participants (2899 males and 2796 females) using the national PESEL database (the National Electronic System of Population Records). Urinary albumin and creatinine concentrations were assessed in 3792 of 3915 obtained urine samples. Microalbuminuria was scored as albumin to creatinine ratio of 17–250 mg/g in men and 25–355 mg/g in women. Higher albumin excretion was scored as macroalbuminuria. Glomerular filtration rate (eGFR) was estimated according to CKD-EPI (Chronic Kidney Disease Epidemiology Collaboration) formula, based on serum creatinine concentration.

Results.– Micro- and macroalbuminuria were found in 2150 (56.7%) and 652 (17.2%) urine samples, respectively. The prevalence of participants with microalbuminuria was similar in all examined age categories (varied from 55.3% to 60.1%), while the prevalence of macroalbuminuria was significantly increasing with age from 10.14% in subjects aged 65–69 yrs to 29.04% in those aged 90yrs or over. In consequence, the percentage of subjects with albumin excretion within normal range was diminishing from 29.8% in the age group 65–69 yrs to 14.42% in the age group 90 yrs or over. Surprisingly, a substantial percentage of subjects with normal range albumin excretion showed eGFR below 60 mL/min/1.73m^2 (from 9.5% aged 65–69 yrs to 48.0% aged 90 yrs or older.

Conclusions.– In Polish elderly population, the prevalence of normal range proteinuria is declining with aging. Albuminuria should not be used as a screening tool of chronic kidney disease in elderly subjects.

PC-482

Enterocele in the elderly: important obstructive defecation etiopathogenic factor. Surgical treatment results

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Introduction.– Enterocele may be associated with obstructive defecation syndrome. Nevertheless its real incidence is unknown. Surgery has been postulated as an effective treatment.
Objectives.– Analyse functional and postoperative results in patients ≥ 70 years of a age who underwent surgery for enterocele.
Methods.– The study was performed retrospectively in 19 patients who underwent surgical treatment for enterocele between January 2000 and December 2010. Assessment included detailed anamnesis, physical examination, barium enema, defecography and/or dynamic pelvic MRI. Individually, manometry, anal endosonography or colonic transit was performed. Eighteen patients underwent laparotomy, ''Moschowitźs'' Douglas repair and endopelvic mesh PTFE using Gosselink technique. Sphincteroplasty, rectocele repair and hysterectomy were performed as required. 1 patient underwent laparoscopic colposacropexy. Follow up was performed 3, 6, 12 months after surgery and then yearly whenever possible. Pescatori scoring system was used for evaluation of constipation. The results were analysed using SPSS.
Results.– The mean age was 74 years (range 70–80). Associated pelvic disorders were rectocele (63.2%), sigmoidocele (10.5%), cistocele (5.3%), uterine prolapse (10.5%), anal incontinence (31.6%) and urinary incontinence (36.8%). Five patients (26.3%) were operated previously by pelvic floor disorders. All of the patients had one or more symptoms of constipation for outlet obstruction. Overall good results were obtained in 16 patients (84.2%). Pescatori scoring system allowed a statistically significant reduction of 13.22 (preoperative) to 5.88 (postoperative). There was no mortality and complications were minimal (three wound infections). There were no re-operations and only one recurrence. Five patients (26.3%) were subjected to biofeedback Treatment. Seventeen patients (89.5%) improved their life quality.
Conclusions.– Surgical repair of enterocele by Moschowitz suture and placement of endopelvic mesh (Gosselink technique) gives good results in patients ≥ 70 years of age, with a minimum number of complications and recurrences. Given the high incidence of other pelvic floor disorders, each patient needs an individualised evaluation whether to decide additional simultaneous repair and complementary treatment, for example biofeedback.

PC-483

Study on the progress of pressure ulcers related to the nutritional, functional situation in patients admitted in a geriatric rehabilitation unit

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Objective.– To assess the progress of the pressure ulcers according to the nutritional status and functional situation.
Method.– Prospective observational study of the patients admitted from December 15th, 2010 to April 15th, 2011. Data were collected at baseline and discharge: pressure ulcers (PU) localization, number and stage at admission and discharge, social status and functional status (Barthel), laboratory data (albumin, cholesterol, lymphocytes and proteins), protein supplements. We excluded patients who died or were discharged in the1st month. SPSS 15.0.
Results.– Sixty-seven patients. Mean age: 79.80 ± 9.39 DE. Male 58.2%. Length of stay 51 days $\pm$ 20 DE. Among the patients, 35.8% had PU (33% in two different areas). PU localization: heel (40.63%), sacrum (34.37%). Degree I PU 53%, degree III PU 25%, degree I PU 18.75%, degree IV PU 3.13%. Treatment: iodine 40.63%, iruxol-mono 21.87%, blasto 25%, varihesive 6.25%, aquacel 3.25%, metronidazole 3.25%. 37.5% PU 37.5% cured at discharge. PU degrees not cured at discharge: 37.5% degree I, 37.5%, degree II and 25% degree III. Functional state: Barthel at admission 32, discharge 51. 49.4% received protein supplements. Patients with PU received more protein supplements ($P < 0.001$). Social status: at admission 42% lived alone, at the end of the study 26% at discharged at home with carer. Died 12%. Laboratory data: albumin at admission 2.8, discharge 3; proteins at admission 5.5, discharge 5.9, at admission lymphocytes 1489, discharge 1561; cholesterol at admission 151, discharge 163. Improvement in number of nutritional parameters, but without statistical significance. Differences have not been found based on diet or supplementation.
Conclusion.– Ulcers are frequently found at the heel. Patients with PU received more protein supplements. Protein supplements in our survey have not proved any improvement in the nutritional status.

PC-484

Biomarkers for diagnosis of bacterial infection in elderly patients

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Incidence of bacterial infections rises with age, but its diagnosis remains often difficult in elderly patients and inadequate treatment is associated with poor outcomes. Usefulness of biomarkers such as procalcitonin (PCT) or C reactive protein (CRP) has been widely discussed in previous studies, as eosinophil counts more recently, but no convincing data has been reported in elderly patients. The aim of our study was to evaluate the diagnostic accuracy of PCT, using TRACE method a rapid and accurate method), in the diagnosis of bacterial infections in elderly patients admitted in acute wards. We conducted a 6 months retrospective study in patients aged 75 years and older. Main clinical and biological characteristics including PCT, CRP, leukocytes and eosinophils were obtained at admission. Final diagnosis of bacterial infection was made based on medical charts, microbiological and radiological investigations, by three experts unawares of PCT results. One hundred and three patients aged 78 ± 9 years were included (comorbidities 3 ± 2, ADL 4 ± 2, sex-ratio F:M 3:1) with a 9% in-hospital mortality. According to experts, bacterial infection was noted in 40% (pneumonia 76%, soft tissues 12%, urinary 7%, gastrointestinal 7%). Bacterial infection was significantly associated with an increase of heart rate (91 ± 22 vs 80 ± 16, $P = 0.004$), SIRS (2 [1–3] vs 1 [0–1], $P < 0.001$), fever (54 vs 23%, $P = 0.002$), leukocytes (11 ± 5 vs 8 ± 4 G/L, $P < 0.001$), CRP (149 [85–211] vs 26 [8–70] mg/L, $P < 0.001$) and PCT (0.73 [0.22–1.51] vs 0.09 [0.06–0.17] ng/mL, $P < 0.001$). Analysing PCT accuracy for the diagnosis of bacterial infection, with a cut-off value of 0.3 ng/mL, sensitivity was 76%, specificity 82%, positive predictive value 74%, negative predictive value 80% (AUC 0.78). For CRP with a 78 mg/L cut-off value, sensitivity was 80%, specificity 81% (AUC 0.63). For eosinophils with a 0.099 G/L cut-off value, sensitivity was 39% and specificity 50%. If PCT appears to be more useful than CRP or eosinophils for bacterial infection diagnosis, a risk stratification strategy requires further investigations for elderly patients.

PC-485

Travel in elderly patients: a descriptive study of characteristics and outcome

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Despite an increasing age of travellers, data on travel in elderly patients are scarce. The aim of this study was to describe medical characteristics and travel outcome in elderly travellers. We performed a retrospective study using a questionnaire sent to all patients followed between the previous 2 years in a geriatric department (Pitié-Salpêtrière, Paris, France). Baseline characteristics were obtained from medical charts. Patients were asked to describe their travel pattern (distance, length of stay, outcome). In case of cognitive impairment, the questionnaire was completed by the caregiver. During the study period, 539 out of 1301 (41%) answered the questionnaire. In 59% of cases, questionnaire was filled by the caregiver, spouse or child. The main characteristics were 82 $\pm$ 7 years old, sex-ratio (F/M) 1.6/1, associated diseases 5 $\pm$ 2 and treatment 5 $\pm$ 3, IADL 10 $\pm$ 4). Dementia was noted in 61% of cases, stroke in 22%, heart failure in 19%, coronary artery disease in 15%, and chronic respiratory failure in 8%. Thirty-six percent of patients stopped travelling despite 93% of them used to travel before. Travel destination concerned holiday home (33%), France elsewhere (36%), and abroad (28%). Among no travellers, 47% wished to travel again, but explained their decision for health reasons (64%), loneliness (22%), and financial reasons (15%). Patients no travellers were more frequently women (69 vs 56%, $P = 0.012$), with more treatments (6 vs 5, $P = 0.0097$), lower ADL (4.7 vs 5.2, $P = 0.0375$), lower MMS (21 vs 23, $P = 0.001$) and more frequently lonely home living (55 vs 39%, $P = 0.001$). For travellers, at least one medical event occurred during the travel in 36% of cases, mainly represented by delirium (14%), fall (12%), infection (11%) and sleep disorder (6%). Frequency of medical event was influenced by destination, occurring in 46% in holiday home, 32% in France and 29% abroad. Despite numerous associated diseases, elderly patients still travelled. Delirium, the most frequent medical event in our study, was influenced by dementia, but suggest a special need for travel preparation in elderly patients.

PC-486

Management of severe septic syndrome in emergency elderly patients

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Severe septic syndrome (SSS) is defined by sepsis associated with organ failures, associated with a 30% in-hospital mortality. Despite high prevalence of infectious diseases in elderly patients, there are no specific recommendations for management of severe sepsis in elderly patients, and data are scarce in this population. Since age is associated with atypical presentations and comorbidities, there is a risk of delayed management and increased mortality in the older. The aim of our study was to analyse management and prognosis of SSS according to age in a tertiary care emergency department. We conducted a prospective observational study. All patients admitted to our ED with a diagnosis of SSS (based on international definitions) were included and compared according to age (< 75 and ≥ 75 years old). Eighty-two patients were included, 51 in the younger group (age 56 $\pm$ 11 years) and 31 in the old group (84 $\pm$ 7 years). There were no significant differences for clinical parameters at admission including mean arterial pressure ($P = 0.75$), heart rate ($P = 0.43$) temperature ($P = 0.96$), or for lactate level (2.5 [2.3–3.4] vs 3.1 [2.8–4.1] mmol/L, $P = 0.31$) respectively in young and old group. In old group, urinary origin of SSS was more frequent (12 vs 29%, $P = 0.05$). Medical management revealed slight but not significant differences between young and old groups respectively. Delay between admission and medical management was 33 [25–44] vs 37 [17–40] ($P = 0.32$), antibiotherapy delay 121 [77–166] vs 146 minutes [65–214] ($P = 0.69$), fluid loading was 2.4 $\pm$ 1.4 vs 2.0 $\pm$ 1.0 ($P = 0.17$). Admission in intensive care unit was 61 vs 45% ($P = 0.16$) and in-hospital mortality 20 vs 29% ($P = 0.33$). Severe sepsis represents a condition associated with high mortality in all age groups. Lack of differences in management and prognosis in our pilot study could be due to the limited number of patients in our study and further studies are needed.

PC-487

Do old people meet the concept of geriatrics and geriatric doctor?

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Introduction.– Geriatrics does not have an even development in all Spanish regions, and in order to promote its growth it is important to know the level of knowledge elderly people have of it, taking as reference the knowledge on Pediatrics. The degree of aging of the population implies the development of Geriatrics as a medical speciality.
Aims.– To find out the amount of elderly people from Extremadura acquainted with Geriatrics and Geriatric assistance in a sample of elderly people who were interviewed by students taking geriatric related subjects from the University of Extremadura.
Material and Method.– A structured survey was elaborated, which had, among other questions, a few related to the knowledge of Geriatrics or geriatrics doctor and Paediatrics and a Paediatrician. The data was then organized in frequency tables, which were then analysed with a SPSS statistics package.
Results.– The amount of elderly people who did not know about Geriatrics or geriatric doctors was 46%. This percentage grows the older the person is and varies from women to men: less women knew about it than men. Those who did not know about Paediatrics and paediatricians were 33.5%, with a significant difference between groups (P 0.0611).
Conclusions.– The data gathered in this preliminary study indicate that a large amount of elderly people do not know about Geriatrics or geriatric doctors, whereas the number of people who did not know about paediatrics and paediatricians was lower, and although this difference was significant statistically, it would be advisable to adjust it according to sex and age and sociocultural and cognitive levels.

PC-488

The use of larval therapy for successful wound debridement in older adults: the experience of a Dublin teaching hospital

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Introduction.– Larval therapy, known also as maggot debridement therapy (MDT) or biosurgery, is used when traditional methods of debridement (autolytic, mechanical or surgical) are unsuccessful. Maggot secretions contain antibacterial substances that reduce bacterial load by exerting a bacteriostatic effect, whilst proteolytic enzymes cause eschar degradation by disrupting the tissue collagen matrix. These actions promote wound healing and amplify human fibroblast and chondrocyte growth.

Method.– A retrospective observational audit on the use of MDT by the Tissue Viability Service (TVS), in patients aged > 65years, was conducted from 1st January 2008 to 31st December 2008 inclusive. Clinical data (consisting of patient demographics, co-morbidities, and the type, grade, dimensions and wound location) were collated from the patient's medical and nursing notes.
Results.– Five in-patients received MDT over the study period. Three patients (two male, one female) were aged > 65years (mean 79.3 ± 5years). All had type 2 diabetes mellitus, peripheral vascular disease, hypertension and chronic kidney disease (one was on haemodialysis). Patients A and C had ischemic heart disease and both had an impaired ejection fraction of < 30% on echocardiography. Patient A had extensive perineal pressure sores (Grade 4), in addition to a left chronic malodourous heel necrotic ulcer (Grade 4, 6 × 8 cm) with slough (duration > 1 year). Patient B had a non-healing necrotic ulcer (Grade 4, 4 × 5 cm) in the right heel, resulting from a fracture/dislocation post-fall. Patient C had a traumatic hematoma to the left tibia region (Grade 3, 10 × 8 cm), which failed to heal despite conservative treatment methods. Commercially available maggots (BioFOAM®, ZooBiotic®, England) were applied to the wound areas for 5-days by the TVS. Dressings were changed twice weekly by nursing staff. Wound sizes decreased to 4 × 3 cm and 2 × 3 cm post-MDT for Patients A and B respectively and wound healing with slough clearance was achieved within 5–6 weeks. For Patient C, the haematoma was successfully removed to reveal a clean wound bed. All patients tolerated the MDT procedure.
Conclusions.– The removal of devitalised tissue is an essential component in wound care. Larval therapy is a safe and effective method to debride, disinfect and stimulate wound healing in older adults with impaired healing secondary to chronic morbidities.

PC-489

Anal incontinence in the elderly: results of the surgical treatment with esphincteroplasty

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Background.– Anal incontinence (AI) is a highly disabling problem and therapeutic management must be individualized. It's considered one of the major geriatric syndrome, although it is rare surgical correction by sphincteroplasty.
Objectives.– To analyse the results of ≥ 70 years old patients with AI and sphincteroplasty surgery.
Methods.– Between January 1994 and December 2008, 10 patients were operated (one M and 10 F), mean age: 75.7 (range 72–80). Variables: etiological factors, symptoms, examination, pre-and postoperative, Wexner text, pre-and postoperative anal manometry, endoanal ultrasonography and surgery. Data were collected retrospectively and were included in the database of SPSS software.
Results.– The most common etiology for AI is obstetric trauma (89.4%). In many cases, it's associated with rectocele (12.1%). Sphincter injury was objectified all of cases by digital examination and endoanal. The mean preoperative manometry: Resting pressure (RP) is 27.73 mmHg and 31.35 mmHg once they have been operated (not significant differences). The preoperative mean value of maximal voluntary contraction (MCV) is 50 mmHg, and the postoperative is 57.85 mmHg (not significant differences). The mean preoperative Wexner is 18 and 6 after surgery (statistically significant differences $P < 0.05$). Only one patient didn't improve after surgery. Overlapping sphincteroplasty (OE) on external sphinter was performed in one patient, with puborectal plication as a process superimposed in seven of them. Overlapping sphincteroplasty with Puborectal plication and internal sphinter suture were performed in two patients. No significant complications were registered. One patient received Biofeedback as a complementary therapy and other received sacral root neuromodulation.
Conclusions.– The sphincteroplasty gives good results in the treatment of AI caused by sphincter injury. It's sometimes necessary to use complementary surgical manoeuvres, with a low complication rate. Surgery can be completed with other therapeutic procedures such as biofeedback and sacral roots neuromodulation.

PC-490

A novel successful concept of geriatrics

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Introduction.– In order to meet the coming demand on our health care systems, the Norvegian government has initiated a call for new models that can promote the sustained health and life quality of the elderly population. Within Helse Fonna, on the west coast of Norway covering 170 000 people, we have create a new model for approaching geriatric risk factors, covering the whole population age 65+, healthy people living home, hospital patients as well as people in institutional elderly homes.
Method.– A core know how was set up around eight patient beds with seven beds allocated for admission from in hospital wards, one bed allocated for fast elective admission from general practitioners. All patients are screened according to validated tests concerning the following risk parameters, cognition, nutrition, polypharmacy, fall risk, incontinens, geriatric chronic wounds, pain, frequent hospital admissions. The policlinic primary task is a quality control of the patients admitted from the geriatric ward and is also functioning as a classical referral unit for general practitioners. The ambulatory geriatric activity is a support for general practitioners, in charge of elderly homes, who together with a specialist in geriatrics can handle highly specialised geriatric problems at site. The health care team has a dual task, to screen health care risks and to create a fast track into the appropriate health care or municipal unit according the persons actual needs.
Results.– Cognitive impairment is a major problem where the lack of knowledge of aging and aging decline is a major cause to a delay of 5 to 10 years before a diagnose and treatment is initiated. Polypharmacy is the second most important group where the specialist unit has a major impact on declined readmission frequency and increased patient and relatives satisfaction.
Conclusions.– Geriatric success factor: a holistic screening of elderly people/patients on a validated basis. Treatment and support focusing on the individuals needs both concerning municipal support and specialised geriatric health care.

PC-491

Vestibular impairment frequently contributes to dizziness – a geriatric syndrome

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Introduction.– Vestibular causes of dizziness in older people are generally under-recognised (Lawson 2005) with limited awareness

that these are often treatable. Our aim is to ascertain the extent to which vestibular symptoms contribute to dizziness in the older person.

Methods.– Retrospective case-note review of all patients ≥ 65 years referred over an 8 month period to Audiovestibular Medicine with symptoms of dizziness.

Results.– Forty-one patients (29 females), ages 65–93 (median 76). Around two-thirds had documented vertigo (27 [65.8%]) and chronic imbalance (26 [63.4%]), while over half (23 [56.1%]) had recent falls due to dizziness. Symptoms had been present for a median 24 months (range 3 months – 20 years). Postural triggers were most common (31 patients, 75.6%) with visual triggers in 18 (43.9%), while 15 (36.6%) patients had multiple triggers. Out of 41 patients, 15 (36.6%) had BPPV but only four were thought to have isolated BPPV. Eleven with BPPV had other causes i.e. an additional peripheral vestibular impairment (PVI), systolic drop of ≥ 20 mmHg or a central cause for dizziness. Patients took a median five medications (range 0–17), of which 33 (80.5%) took antihypertensives, 15% (36.6%) took psychotropic medication, 11 (26.8%) took diuretics and 5 (12.2%) took vestibular sedatives. Thirteen (31.7%) had abnormal gait. Of 38 patients tested, 19 (50.0%) and 11 (28.9%) had a systolic drop of ≥ 20 mmHg immediately on standing and after 2 minutes respectively. Out of 41 patients, nine had a predominantly central cause of dizziness, three had a ''pure'' central cause while three each had a concurrent systolic drop of > 20 mmHg, or peripheral causes including BPPV. Out of 41 patients, 17 had a predominant non-BPPV peripheral vestibular impairment. Six had ''pure'' PVI, seven had a concurrent systolic drop of > 20 mmHg. Four had an additional central cause or concurrent BPPV.

Conclusions.– These findings support previous work (Kao 2001, Gassman 2009) that dizziness is a multifactorial geriatric syndrome. All patients with dizziness and falls must receive a thorough workup including assessment for peripheral vestibular causes particularly BPPV and PVI, medication review, neurological/cardiovascular examination with testing for orthostatic hypotension. Diagnosis of one cause should not exclude searching for further factors. Education regarding easily treatable conditions such as BPPV and PVI is highly relevant in reducing falls and improving quality of life.

PC-492

What are the causes and outcomes of acute kidney injury in the elderly?

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Introduction.– In the elderly, Acute Kidney Injury (AKI) is often iatrogenic and multifactorial. Elderly patients show the same spectrum for the causes of AKI as the general population but they are more likely to have received multiple concurrent insults that result in AKI. AKI has a poor prognosis with a high mortality in the elderly patient.

Method.– We audited 59 patients discharged from two South Medical, an acute geriatric ward in the District General Craigavon Hospital during April 2011. We identified AKI as a creatinine rise of > 30 mmol/L or 1.5 times that of the baseline value. We identified the community and hospital acquired causes for AKI. We also assessed the outcomes: death, length of hospital stay, recovery of creatinine to 20% of baseline renal function and referral for renal replacement therapy.

Results.– Twenty-six patients had a diagnosis of AKI, 16 were community acquired and 10 were hospital acquired. Twenty-three patients had two or more causes identified for AKI.

Table 1. The frequency of documented causes for both community and hospital acquired AKI.

Documented causes	Community acquired AKI	Hospital acquired AKI
Hypovolaemia – poor oral intake	14	3
Hypovolaemia – GI losses	2	0
Medication	9	8
Sepsis	9	7
Acute ischemic insult	0	2
Rhabdomyolsis	1	0
Obstruction	1	1

Table 2. Outcome measures.

Outcome measures	Number of patients (%)
Transferred for renal replacement therapy	1 (4%)
Died	8 (31%)
Discharged	17 (65%)
Recovery of creatinine to 20% of baseline function	17 (65%)
Average length of stay-AKI patients versus non AKI patients	13.42 days versus 7.48 days

Conclusion.– Our audit highlights that AKI has a high mortality rate and high economic costs as displayed by the hospital length of stay. There are multiple causes for AKI within the prerenal and renal spectrum. Inadequate hydration and polypharmacy are the commonest factors. We need strategies in place to improve hydration and reduce polypharmacy with nephrotoxic medication in the elderly population.

PC-493

Features of patients with aspirative pneumonia in a geriatric in-patient unit

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Aims.– To describe the characteristics of a group of patients with aspirative pneumonia in a Geriatric In-patient Unit during a year of follow-up and the results six months after discharge in terms of readmissions and mortality.

Methods.– Retrospective study. We included patients admitted at a Geriatric in-patient Unit from 01 January 2010 to 31 December 2010. We collected data about: demographic variables (sex and aged), diagnosis at admission, aspirative pneumonia at admission or during hospitalisation, functional status (Katz index), feeding tube, cognitive impairment, swallowing disorders, and readmission and mortality 6 months after discharge. Statistical Analysis: SPSS 17.0.

Results.– *n*: 319 patients. Female: 63%. Mean age: 87 years (63–103). Diagnosis at admission: pneumonia 19.4%, urinary infection 8.2%, respiratory infection 6.6%, heart failure 6.6%. Aspirative pneumonia at admission: 16.3% and during hospitalisation 6.6%. The patients with aspirative pneumonia showed worse functional status: Katz index $\geq$ D: 57.8% vs 50.6% (*P* 0.00), more frequency for feeding tube: 11.3% vs 3.6% (*P* 0.016), cognitive impairment 76, 1% vs 49.8% (*P* 0.00), swallowing disorders 76.1% vs 30.8% (*P* 0.00). When we compared both groups six months after discharge, we found statistical significance in terms of mortality 46.5% vs 22.2% (*P* 0.00), but not in the rate of readmissions.

Conclusions.– In our study, the dependency for feeding, swallowing disorders, and feeding tubes seem to be risk factors for aspirative pneumonia, as previous published literature shows. The functional and cognitive status is worse in those patients with aspirative

pneumonia. Aspirative pneumonia supposes a risk factor for poor prognosis 6 months after discharge with a increase of mortality.

PC-494

Do gerontologists contribute to ageism? Preliminary evidence from the older driver literature

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Concerns have been raised that gerontologists may contribute to ageism by adherence to failure models of ageing. The clarification that older drivers do not represent an elevated hazard to other road users, and the determination in 2003 that an apparent increase in crashes per mile is an artefact of low mileage, affords an opportunity for examining whether gerontologists unreasonably or unwittingly contribute to ageism by describing older drivers in terms of increased risk. We examined publications on the Medline database from 2004–2010 using the Boolean search of Medline sub-headings ''Aged'' and ''Automobile Driving''. Two independent raters evaluated the papers as:
– relevant to older drivers;
– whether they made unqualified use of assertions of the ''increased crash-risk per mile driven'' paradigm or that older drivers represented an increased crash risk.
A third senior rater adjudicated in case of uncertainty or difference in ratings. Of the 1,006 papers discovered, analysis is presented of the first 443 (by alphabetical order of first author's surname). Of these 128 were considered to be relevant to the topic of older drivers in general, and 68 (53%) described older drivers to pose more risk than younger cohorts, and/or made unqualified use of the ''increased crash-risk per mile driven'' statement. These findings suggest that over half of researchers into driving and older people perpetuate the myth of older drivers as posing greater risk than other cohorts. This may have important negative implications for maintaining mobility in later life, and add to pressures for screening of older drivers, an intervention with proven negative consequences. Research is needed into the motivation and drivers of such behaviours by gerontologists so as to address the origins of ageism.

PC-495

Networked data: A reality for researching, managing and benchmarking in healthcare

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Objectives.– The adoption of new technologies in healthcare processes generates large amounts of computerized data. Due to technological and budget limitations, data is only available to a reduce number of professionals within organizations and force most of the interchange of information to be based on calculated values, aggregating the original data. Our objective is to determine the impact in the decision-making processes of having access not only to the aggregated value, but also to the underlying data used and the knowledge of the exact calculation process.
Methods.– To facilitate the access to data and analysis Bevalley network was developed and tested in a living lab. Bevalley is a worldwide network where users share, comment and tag data and analysis in real time. It is accessed easily through any computer with Internet connection. The usage of Bevalley is free of charge. Every professional or healthcare entity can upload easily any kind of tabulated data to Bevalley having the absolute privacy of the uploaded data guaranteed. Data can be stored within the entity's IT infrastructure. In Bevalley, data can be analysed using several tools. Both analysis and data can be shared.
Results.– More than 20 healthcare entities and 500 professionals are using Bevalley network, from over 40 different countries. Research and management programs were built using the network where every participant had access to raw data used to calculate results and indicators and also created their own analysis that shared with other participants. Behavioural changes happened at several levels, some participants even developed spontaneous benchmarking systems to compare themselves with similar professionals/entities in the network.
Conclusions.– The usage of a shared data and analysis network not only provides a better way of making informed decisions in healthcare, but has also opened a window on new approaches on collaborative work and reputation measurement.

PC-496

Sensory decline among Galician older people: pilot study

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Keywords: Vision loss; Hearing loss; Dual sensory impairment; Aging; Older adult
Prevalence of visual and hearing problems increases with age 3, 4 and handicapping vision and hearing loss impact negatively on active aging. Although Galicia is the Spanish region where the percentage of older adults is growing faster, no studies exist with regard to their dual sensory state (vision and hearing).
Objective.– Take into account the demographic horizon for Galicia, we have developed a pilot study to determine the magnitude of sensorial deprivation (vision and hearing loss) among ''our'' older adults.
Method.– Two different groups of older people were evaluated: nursing-homes residents (201) versus non-residents (182). Both groups aged 60 years and over. Vision screening involved Presenting Visual Acuity measurement for distance and near vision. Tonal Audiometry and Whisper Test were used in the evaluation of hearing capacity. Statistical analysis was carried on with the SPSS 1.7 program.
Results.– Among the non-institutionalised older subjects, 25.3% have hearing loss (Ventry & Weinstein criteria), 11% of them have impaired presenting visual acuity (Presenting Visual Acuity < 0.5; better eye) and near 6% suffer dual sensory loss. Higher percentages of single and combined sensorial impairments were observed among nursing-homes residents.
Conclusions.– Untreated hearing loss is more common than presenting visual acuity impairment among Galician older adults. Single sensorial deprivation is higher among nursing-home residents as well as the prevalence of Dual Sensory Impairment.

PC-497

Can FVSQ be used as screening tool among Galician older population? (Pilot study)

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Keywords: Self-perception questionnaires; Visual screening; Visual impairment; Aging; Older adults

Almost 95 millions people aged 50 years and older are visually impaired from uncorrected refractive errors and 25% of people between the age of 65 and 75 have undiagnosed hearing problems. Near 22% of Galician population have 65 years of age and over and the most recent inquiry (EDAD, 2008) reveals that more than 9% of this older subjects report visual problems.
Objective.– To determine if Functional Vision Screening Questionnaire (FVSQ) can be used by family physicians on detection of visually impaired older patients.
Method.– We evaluated 182 non-institutionalised seniors and 202 nursing-homes residents (both groups aged 60 years and over). Before eye examination, we applied the validated FVSQ modified to Horowitz A. et al. (1998). Presenting Visual Acuity (PVA) for distance and near vision was measured to determine vision used on daily basis.
Results.– The percentage of older adults with Impaired Presenting Visual Acuity (IPVA) is higher among nursing-home residents (48% versus 11%). Prevalence of visual problems increases with age on both population groups under study. Only 20% of non-residents with IPVA fail the FVSQ. Among nursing-homes residents, the self-report questionnaire shows a high specificity (over 90%) but a low selectivity (20%).
Conclusions.– Our data reveals the need of a new and specific visual screening questionnaire for Galician older people, especially in case of nursing-homes older adults.

PC-498

Adult vaccination for healthy ageing: an online training course for healthcare workers

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Introduction.– A large increase in preventable infectious diseases in older adults represents a major barrier to healthy ageing. It is associated with significant morbidity and mortality, and the problem is exacerbated by the ever-increasing number of ageing/aged people. This is highlighted by the fact that many more adults die from vaccine-preventable diseases than children. The key to addressing this issue is to increase the awareness of healthcare workers of the health benefits that can be obtained through adult vaccination programs. Success will require the medical community to actively champion such initiatives. Thus, the aim of this presentation is to provide details of a CME accredited online training course, which looks at infectious diseases associated with significant morbidity in older people.
Methods.– The online training course is divided into 4 parts which discuss the burden of preventable infectious diseases in older people, looks at why older adults are more susceptible to these diseases (due to immunosenescence and other interacting factors), outlines the rationale and benefits for adult vaccination and provides an overview of European guidelines. This is followed by a 10-question quiz, which is accredited by the European Accreditation Council on CME (EACCME).
Results.– By completing the online course, users can expect to better understand the burden that infectious diseases place upon older individuals living in the community. They will also learn why older people are at risk and, importantly, how vaccination is one simple preventive act with a major impact on public health.
Conclusions.– European geriatric societies recognise the benefits and importance of life-long immunisation for improving the health status of older people. This will only be achieved with the full support of knowledgeable healthcare personnel who actively champion adult vaccination programs. The training course can be accessed (free) through EUGMS website www.eugms.org or: https://login.e-campus.nl/v9r5/portal/custom/eugms.

PC-499

"Inflammaging": white blood cell counts across the lifespan

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Introduction.– The term "inflammaging" is a combination of "inflammation" and "aging". Circulating white blood cells (WBC) is considered as an excellent marker of low-grade sustained chronic inflammation. The objective of the present study was to describe how the count of WBC changes during the lifespan, to test the hypothesis that WBC increases with increasing age.
Methodology.– Total WBC counts, sex and age were abstracted from a database of blood tests (BT) done in a private analytic laboratory in a small city by the coast in southern Spain. All BT were done with the same automatic blood cell counter (Sysmex, SF3000, Roche, Japan). To exclude any acute infections, only WBC counts between 4000–10,000/cm^3 were included. Mean values and 95% confidence intervals were explored across the following age groups: 25–34 years, 35–44, 45–54, 55–64, 65–74, 75–80 and above 80 years.
Results.– A total of 50,283 BT were included in this study, 54% were women's. Women had lower mean WBC counts than men ($P < 0.001$; 6250 [6233–6266] versus 6467 [6449–6485], respectively). Higher counts were found in individuals younger than 55 years, compared with older subjects, in both sexes ($P < 0.001$). Beyond the age of 55 years, however, the progression of WBC counts with age was different between men and women; a continuous increase with age was found in women (P for trend < 0.001) while in men the counts continuously decreased to the age of 80y and slightly increased above this age (P for trend < 0.001).
Discussion.– WBC counts do not monotonically increase with age across the adult lifespan, which is in consonance with results of several other previous studies. However, above the age of 55 years, a clear age $\times$ sex interaction with opposite direction in the trends was observed; in women, "inflammaging" was present, but not in males. No confounder was controlled for in this study (such as body mass index or smoking status) and prevalent diseases and survival bias in advanced age could possibly play a role in the observed differences in the "inflammaging" between sexes.

PC-500

Hiperoxigenated fatty acids in prevention and treatment of stage 1 pressure ulcers in geriatric hospitalised patients

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Objective.– The aim of this study is to demonstrate the efficacy of hyper-oxygenated fatty acids in prevention and treatment of stage I pressure ulcers located in sacrum in hospitalised geriatric patients evaluating positive qualitative changes in colour, tonicity, dryness and fragile skin after applying treatment.
Method.– Prospective study from January 2009 until June 2010. Inclusion criteria: patients from Internal Medicine Department at Hospital Carlos Haya, Málaga with stage I pressure ulcers located on sacrum.

Implementation of assessment tool monitoring several variables:
– independent variables Rating Scale: 0 very bad, 1 poor, 2 regular, 3 good, 4 very good, 5 excellent;
– socio-demographic variables: age and sex;
– variables of patient risk assessment (Braden);
– dependent variables (DV) studied before and after the use of HFA: Colour, tonicity, dryness and fragility.
Once the patient is included in the study, HFA is applied each postural change, making an assessment of DV before and 7 days after application.
Results.– The sample at the end of the study was 106 (57% man and 43% women). Mean age 81.96 in men and 81.73 for women. Average length of stay: 13.4 days. Braden score of 12 or less in 40.5% patients, between 12 and 16 points in 49%. Barthel score: total dependence 28.3% and severe: 67.9%. 84.4% patients studied come from emergency service. Previous readmissions: 28.8%. Hospital Discharge: improvement: 71.1%, death: 26.7%, hospital transfer 2.2%. The total number of ulcers identified: 86; 52 improved (78.04%), 49 did not change (19.91%) and 5 got worse (2.03%). Previous PU colour: 2.08 and after treatment: 3.44. Previous tonicity: 1.98 and later: 3.25. Dryness before treatment: 1.93 and after it: 3.31. The fragility was the dependent variable with highest score, 1.92 at the beginning and 3.33 after applying HFA.
Conclusions.– This assessment of the effects of hyperoxigenated fatty acids on functional skin parameters leads us to believe that corpitol really does improve skin integrity becoming an effective measure in the prevention of bedsores and in the reversal of stage one lesions. If we focus on the cost-benefit, the management used represents an option with an excellent cost-efficiency relationship.

PC-501

Predictive factors for hospital admission of urinary tract infection in institutionalised patients

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Objectives.– Describe what factors predicted urinary tract infection in institutionalised elderly people. Determine the relationship between comorbidity and functional status with the risk of hospitalisation for urinary tract infection in these patients.
Method.– Retrospective descriptive study. Assessment of institutionalised elderly in nursing homes who were admitted for urinary tract infection or urinary sepsis to an Acute Care Hospital in Internal Medicine and Geriatrics for a period of 17 months (January 09–May 10). Collected clinical, functional and cognitive variables. The influence of these variables in developing a urinary tract infection were analysed.
Results.– $n = 38$ (60.53% were women). Mean age 82.53. Previous functional status: more than half of patients (55.26%), were dependent for all basic activities of daily living (ADL), (Katz G). Eighty percent were dependent for more than four ADL, 89.47% had urinary incontinence. A quarter of patients (23.67%) had an indwelling bladder catheter. Regarding the cognitive status, 71.05% showed some degree of dementia, and of these almost two-thirds (66.67%) in severe degree. Diabetes Mellitus was present in 23.68% of cases. Forty percent had neurological diseases other than dementia (Parkinson's Disease, stroke) The use of psychoactive drugs was almost 60%. Among the patients, 15.79% had chronic renal failure, 60.53% had had a previous episode of urinary tract infection, 34.21% had structural lesions in the urinary tract.
Conclusions.– The institutionalised elderly people who are admitted for urinary tract infection have a high degree of functional dependence. The factors most often associated with income per urinary tract infection are urinary incontinence, psychoactive drugs (sedatives and anticholinergics), previous urinary tract infection and dementia. Implementation of mechanisms for prevention of urinary tract infection is fundamental in institutionalised dependent elderly people.

PC-502

Meticillin-sensitive *Staphylococcus aureus* (MSSA) bacteraemia in elderly care patients at a district general hospital in the United Kingdom

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Background.– *Staphylococcus aureus* bacteraemia is associated with high morbidity and mortality particularly in older people. A retrospective study was undertaken to obtain information about the distribution of MSSA bacteraemia cases and the features associated to improve management.
Method.– Data was obtained from microbiology laboratory reporting system, hospital patient administration systems and patient case notes between April 2009 and March 2010. If MSSA was isolated after a gap of 14 days, this was classed as a new episode of bacteraemia.
Result.– Forty-five MSSA bacteraemia episodes occurred in 43 patients. Forty-three out of 27 (60%) were ≥ 65 years of age. Nineteen patients (44%) died within 60 days of admission. Eighteen of whom were ≥ 65 years of age. Information from the 27 patients over 65 years was further reviewed. Eighty-five percent of infections were community acquired (23/27) defined as having had a positive culture result taken within 2 days of admission. The most common presenting complaints in the elderly were reduced consciousness 6/27, pyrexia 4/27, breathlessness 4/27 and joint pain 4/27. The common sources of sepsis were chest 9/27 and urine 6/27. Only three had cellulitis. Patients had multiple co-morbidities. The most prevalent being 10 had a cancer, eight were diabetic, nine had ischemic heart disease and nine were hypertensive. The mortality was higher in hospital acquired cases, in patients with reduced consciousness and those with urinary and chest sources. There were 15 different antibiotics used as empirical treatment. Once the isolates were cultured, appropriate antibiotics were prescribed following microbiological consultation.
Conclusion.– Our study highlights the mortality associated with MSSA bacteraemia and this appears to be associated with, increasing age and with multiple co-morbidities. Presentation is most often non-specific which carries a higher mortality. There is concern in the number of patients who developed their sepsis whilst in hospital, particularly as they all died. The trust has implemented route cause analysis meetings for each case in the future. Care bundles for IV cannulae and urinary catheters have been introduced and a protocol is being written for management of bacteraemias to prevent any complications of infection.

PC-503

Chronic kidney disease among older adults: a progressive and irreversible decline? The Inchianti study

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Introduction.– Chronic kidney disease (CKD) is associated with higher morbidity, greater health care utilization and higher

mortality. Older age represents a risk factor for CKD and prevalence of CKD increases with age. However, evolution of CKD among older adults is not clear. Previous studies have shown a progressive decline in GFR with age but experience demonstrates that patients are not homogeneous and that different patterns of evolution may exist. The aim of the current study is to assess the kidney function of an older community-dwelling population at baseline and appraise its evolution after three years of follow-up in term of CKD stage progression and magnitude of glomerular filtration rate (GFR) changes.
Methods.– Prospective study of six hundred seventy six participants 65 years and older. GFR was estimated using Cockroft-Gault equation (CG).
Results.– At baseline, 33% of participants had criteria of CKD (GFR $<$ 60 mL/min). Among them, the majority remained stable, 10% improved their renal function and 7% aggravated into more severe CKD stages, 6% from CKD stage 3 (GFR 30–59 mL/min) to CKD stage 4 (GFR 15–29 mL/min) and 1% from CKD stage 4 into terminal kidney failure (GFR $<$ 15 mL/min) at follow-up. Loss of GFR of participants with GFR $<$ 60 mL/min was significantly lower (1.4 mL/min/year) than participants with GFR $\geq$ 60 mL/min (3.3 mL/min/year) at baseline.
Conclusion.– Older people with CKD displayed slow progression of renal disease and thereof are at higher risk for comorbidities related to CKD than for progression to end stage renal disease. Management of these patients should focus on screening for cardiovascular risk factors and complication of CKD.

PC-504
Lack of association of insulin receptor substrate gene polymorphisms with obstructive sleep apnea

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Introduction.– Obstructive sleep apnea syndrome (OSAS) is a common disorder that has a major impact on public health. Patients with OSAS have sympathetic activation, endothelial dysfunction, systemic inflammation, hypercoagulability, glucose intolerance and insulin resistance. Insulin receptor substrat-1 (IRS-1) and insulin receptor substrat-2 (IRS-2) gene polymorphisms have been shown to be associated with insulin resistance. However, genetic susceptibility of insulin resistance at OSAS patients has not been shown. Therefore, the aim of our study was to investigate the relationships between IRS-1 and IRS-2 gene polymorphisms and OSAS.
Methods.– The study population included 26 patients with OSAS (20 males, six females; mean age 64.2 $\pm$ 11.1 yrs, BMI 29.1 $\pm$ 6.1 kg/m^2). Twenty patients without OSAS (14 males, six females; mean age 60.4 $\pm$ 10.5 yrs, BMI 27.6 $\pm$ 4.1 kg/m^2) were enrolled in the study as a control group. All the patients with OSAS underwent full overnight in-laboratory polysomnography with a 44-channel recording system (Compumedics E series, Melbourne, Australia). Anthropometric measurements were evaluated in all groups. Spirometric tests and arterial blood gas sampling were performed before nocturnal sleep study in the patients with OSAS. Obese without OSAS did not undergo these tests. Since, none of them had symptoms related to OSAS. All entire coding exons of PLIN gene were amplified by polymerase chain reaction (PCR). All entire coding exons of IRS-1 and IRS-2 gene were amplified by polymerase chain reaction (PCR). Insulin resistance was estimated using the homeostasis model assessment (HOMA).
Results.– Mean levels of HOMA in patients OSAS and control were found to be 1.79 $\pm$ 0.8 and 1.95 $\pm$ 1.7, respectively (P = 0.09). In patients with OSAS and control, IRS-1 genes were found to be wild type. In patients with OSAS, 23 (88.6%) had no nucleotide substitution, one (3.8%) had P1033P heterozygous and two (7.6%) had P1033P homozygous of IRS-2. Likewise, 19 (95.0%) had no nucleotide substitution and 1 (5.0%) had P1033P homozygous of IRS-2 in control.
Conclusions.– There are no associations with polymorphisms of IRS-1 and IRS-2 gene and OSAS in elderly.

PC-505
Infectious diseases in elderly institutionalised admitted to a acute geriatric unit infectious diseases in elderly institutionalised admitted to a acute geriatric unit

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Objectives.– Describe type, microbiology and antibiotics used in institutionalised patients admitted for infection.
Methods.– Reviewed records of patients institutionalised admitted with infection 2010. We analysed types of infections, microbiological etiology, antibiotic use and mortality.
Results.– One hundred and fifty institutionalised patients (24.52%) were admitted in 2010. The reason for admission was infection in 51.33% (77). 68.53% (53) female, mean age 85.87 $\pm$ 5.86, 80.51% (62) Barthel baseline $<$ 30, 88.1% (63) dementia, and 100% (77) Charlson index age-adjusted score $\geq$ 4. 55.84% (43) were respiratory, 33.76% (26) were urinary, 9% (7) cutaneous and 1.3% (1) gastrointestinal. In urinary (UTI), cultures were positive in 53.83% (14). 19.23% (5) had blood cultures, positive 1. The germs were: two *Pseudomona aeruginosa*, five BLEE producing *E. coli*, two *Providencia stuartii*, three *E. coli* and two *Proteus mirabilis*. The antibiotics used: ceftriaxone 34.61% (9), amoxicillin-clavulanic 23.07% (6), carbapenem 19.23% (5), fosfomycin 11.54% (3), ceftazidime 3.8% (1), levofloxacin, 7.70% (2). The symptoms were 57.7% (15) overall decline, 23.07% (6) fever, 11.53% (3) confusional state and 7.7% (2) positive culture. Regarding respiratory infections, 9.3% (4) had blood cultures, none positive. 11.62% (5) had Legionella and pneumococcical antigen in urine, in two pneumococcal was positive. We performed one culture of secretions (with bronchoscopy) identifying acid-fast bacillus. Organisms were identified in 12.5% (3). The antibiotics used: amoxicillin-clavulanate 37.21% (16), levofloxacin 18.60% (8), ceftriaxone-clindamycin 11.62% (5), piperacillin tazobactam 7% (3). The symptoms were general deterioration 34.88% (15), fever 25.58% (11), acute confusional 4.65% (2), increased secretions 48.83% (21) and dyspnea 48.83% (21). Comparing the two groups, there were significant difference ($P < 0.001$) in the germs identified and symptoms. The mortality rate was 18.18% (14).
Conclusions.– The most common infections were: respiratory, urinary and skin and soft tissues. The clinic was non-specific in 100% of UTIs compared to 41.83% of respiratory ($P < 0.001$). In patients with UTI was identified germ l in 53.83% of patients versus 12.5% in respiratory ($P < 0.001$). Among the isolates in UTI, 64.28% were resistant germs (profile more similar to hospital). The mortality was 18.18% versus 13% of patients institutionalised admitted without infection.

PC-506
Nosocomial infections: incidence and patient's characteristics associated with psychophysical decline, as an atypical manifestation of infection in an intermediate and long term care unit

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Objectives.– To determine the incidence of nosocomial infections and to identify geriatric patient's characteristics associated with acute psychophysical decline as atypical clinical manifestation of infection in an intermediate and long term care inpatient unit.

Method.– A prospective study of patients admitted during 6 months period. Two hundred patients were included with the following characteristics: Age: 78 ± 11.82; Gender: 128 women (64%), Barthel Index at admission: 29.52 ± 23.23; Lawton IADL Index prior to admission: 3.22 ± 3.02, MMSE of Folstein: 20.66 ± 6.18 and comorbidity Charlson Index: 2.05 ± 1.8. The presence of infections was detected using McGeer criteria (Am J Infect Control 1991;19:1–7). Acute psychophysical status decline during the infection, was defined as the presence of confusion (new onset or worsening) associated with functional decline for basic activities daily living. Other variables registered: Norton scale, malnutrition (IMC < 21, Alb < 3 gr/dL), swallowing disorders, number of geriatrics syndromes urinary and intravenous catheter, tracheostomy, nasogastric and gastric feeding tube, surgical wound and drugs related with infection (antiacids, corticoids, antibiotics, immunosuppressants).
Results.– Ninety-three infections were detected: cumulative incidence: 46.50% and incidence density of 6.33 infections per 1000 days of hospitalisation. Psychophysical status decline was present in thirty-nine patients (41.93%). Patient's characteristics associated with psychophysical decline: Lawton index: 2.18 ± 3.41 vs 2.82 ± 2.64 ($P < 0.019$), Norton Index 12.7 ± 2.25 vs 13.98 ± 2.24 ($P < 0.013$), number of geriatric syndromes 4.87 ± 3.59 vs 1.76 ± 1.69 ($P < 0.002$), presence of cognitive impairment 17 (58.6%) vs 12 (41.1%) ($P < 0.028$), presence of fever 27 (79.4%) vs 7 (20.06%) ($P < 0.001$), constipation 18 (64.3%) vs 10 (35.7%) ($P < 0.004$), urinary incontinence 30 (53.6%) vs 26 (46.4%) ($P < 0.005$), delirium 11 (91.7%) vs 1 (8.3%) ($P < 0.001$). After multivariate analysis, only those who had fever and more than three geriatric syndromes ($P < 0.01$) were independently associated with psychophysical decline as an atypical clinical manifestation of infection.
Conclusions.– The incidence and density of infection is similar to other published studies in similar setting. Only fever and the presence of more than three geriatric syndromes were independently associated with psychophysical decline.

PC-507

Avoiding urinary catheterisation in acute geriatric service at the granollers general hospital using a bladder scan

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Objectives.– Its well known that de first cause of nosocomial infection in acute geriatric units is urinary tract infections. One main risk is the manipulation of the urinary tract. Having a non-invasive method with no adverse effects may allow to more accurately diagnose urinary retention and so, decrease, the number of unnecessary drilling in a vulnerable population like the geriatric patient. The Bladder Scan is an ultrasound that allows to assess the amount of urine in the bladder easily in a few minutes, allowing nurses to optimise time of care. The main objective of this study is to assess the effectiveness of a bladder scan in an acute geriatric unit and account for urinary catheterisations avoided with the use of the ultrasound.
Method.– Prospective collection of all patients admitted to acute geriatric unite of Granollers General Hospital with clinical suspicious of acute urinary retention, between to which makes them a scan. We determined: sex, clinic of urinary retention, history of previous catheterisation, the volume of urine detected by the ultrasound, and the real volume or urine after catheterisations (if performed).
Results.– We assessed 72 subjects: 59.3% were men, 40.3% showed some symptoms of acute urinary retention (43.1% reported abdominal pain and 56.9% had anuria). Of all the studied patients, 30.6% had withdrawn the urinary catheters in the last hours. We avoided the catheterise 40.3% of the suspected urinary retention. The margin error of ultrasound was about 100 cc.
Conclusions.– The bladder scan is a useful tool to diagnose urinary tract retention, and allowed us to avoided catheterisation in 40.3% of suspected cases. Its effectiveness should encourage other centres in its use, and further investigate other parameters...

PC-508

Main clinical and urodynamic data of older women with nocturnal urinary incontinence

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Background.– Nocturnal urinary incontinence is very common in older people, mainly related with prostatic problems in the males. Also in the female population can suppose a health problem with high influence on lifestyle and on quality of life.
Objectives.– To know the main clinical and urodynamic data of older women with main symptom of nocturnal urinary incontinence. To describe the associations between the clinical profile and urodynamic patterns in relationship with the age.
Methods.– Cross-sectional study over a cohort of older women attended in an out-patients Continence's Clinic, due to her nocturnal urinary incontinence. Clinical variables: demographic data; comorbidity; duration of incontinence; type of incontinence; other urinary symptoms; use of antimuscarinic drugs. Urodynamic variables: bladder capacity; involuntary bladder contractions; postvoid residual volume; results of the video urodynamics.
Results.– Sample: 67 women (mean age 73.25; range 65–86 years). Comorbidity: diabetes mellitus nine cases (13.4%); Parkinson's disease three cases (4.5%); prior pelvic surgery 25 cases (37.3%); recurrent urinary tract infections nine cases (13.4%). Duration of incontinence: more than 12 months 58 cases (86.6%). Type of incontinence: mixed incontinence (urge and cough) 43 cases (64.2%); urge incontinence 20 cases (29.9%). Voiding Lower Urinary Tract symptoms in 30 cases (45%). Diurnal frequency 52 cases (77.6%); nocturnal frequency 42 cases (62.7%). Use of antimuscarinic drugs 12 cases (17.9%). Urodynamic variables: involuntary bladder contractions 33 cases (49.3%); diminished bladder capacity 57 cases (85%); urge sensation during cystometry 31 cases (46.3%); basal cystocele: grade I (33 cases), grade II (17 cases). cystocele with Valsalva: grade III (46 cases), grade II (15 cases); normal postvoid residual volume in 48 cases (71.6%). The oldest incontinent women (group > 75 years) had a significant longer duration of incontinence ($P < 0.045$), more urinary tracts infections ($P < 0.028$) and a significant diminished bladder capacity ($P < 0.037$).
Conclusions.– The mixed urinary incontinence is very common in older women with nocturnal presentation. Based on the clinical profile (diurnal frequency, nocturia, mixed incontinence), older women could benefit of the antimuscarinic drugs. The age by itself doesn't modify the clinical or urodynamic profile of older women with nocturnal urinary incontinence.

PC-509

Predictor variables of mortality in community-acquired pneumonia in the elderly

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Objective.– To define the variables included in the pneumonia severity index (PSI) and in the comprehensive geriatric assessment

as predictors of community-acquired pneumonia mortality in the elderly during hospitalisation.
Methods.– Prospective study of patients admitted to the Acute Geriatric Unit (AGU) with diagnosis of community acquired pneumonia (CAP) during the years 2004–2008. All the variables included in the PSI were included as well as the following variables included in the comprehensive geriatric assessment: Prior Barthel Index (PBI), Lawton Index (LI), Barthel Index at Admission (BIA), Pfeiffer Test (PT), Charlson Index (CI), nutritional status measured by protein and albumin levels, previous presence of immobility, pressure ulcers and cognitive impairment and the new onset of immobility, pressure ulcers and delirium. A bivariate analysis was performed initially and then a multivariate analysis to identify independent predictors of mortality.
Results.– Four hundred and fifty-six patients, with a mean age of 85.47 years, were included; 238 (52.19%) were women. Mortality during hospitalisation was 24.12%. The bivariate analysis identified a significant relationship with mortality: age (P 0.03), male sex (P 0.06), institutionalisation (P 0.0005), altered mental status ($P < 0.0001$), respiratory rate (P 0.01), urea ($P < 0.0001$), creatinine ($P < 0.0001$), sodium (P 0.001), hematocrit (P 0.01), multilobar infiltrate ($P < 0.0001$), pleural effusion (P0.001), protein ($P < 0.0001$), albumin ($P < 0.0001$), PBI ($P < 0.0001$), BIA ($P < 0.0001$), LI (P0.0001), PT ($P < 0.0001$), prior immobility (P 0.02) and new onset of immobility ($P < 0.0001$), pressure ulcers (P 0.005) and delirium (P 0.02). The multivariate analysis showed independent association with mortality for male (P 0.006), urea (P 0.002), protein (P 0.014), BIA ($P < 0.0001$), multilobar infiltrate (P 0.02) and pleural effusion (P 0.0002).
Conclusions.– Sex, urea and pleural effusion were the only variables included in the PSI independently associated with mortality in the elderly with pneumonia. Functional and nutritional status of elderly patients with pneumonia were independently predictors of mortality. Prognostic indexes of mortality in pneumonia should consider functional and nutritional variables when applied to the elderly.

PC-510

Four recent major cornerstones in the legal framework for elderly people in Luxembourg

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Introduction.– Since 2009, four major changes have be implemented in our health system and they concern mainly the elderly citizens. The different aspects are related to health, long-term care, end of life decisions, rights of patients and dementia. These different new regulations will change the daily work for all geriatricians.
Results.– A first law issued in 2009 is related to the palliative care and to euthanasia; the patients decision expressed either as a living will or as an end of life document are compulsory for all doctors who are confronted to such situations and serious ethical conflicts will emerge (Some statistical data will be shown). The second legal framework, started in 2010, concerns the rights for patients and their relatives or surrogates. It notifies that relatives have full access to the medical file of a deceased person and even more the surrogates may take decisions to end life for people who can't express no more their actual will (a first report on euthanasia has been published and data are disclosed). A third aspect concerns the change in long-term care. Since this allocation has been started in 2000, the situation for people with a form of dementia has shifted to more home care and day care. The total amount of hours of care allocated per week is over 50 hours for people with Alzheimer compared to a mean of 31 hours weekly for all other medical causes of dependency in the elderly. Meanwhile the restricted application of a care plan only for dependency in dressing, eating, hygiene and mobility may reduce the amount of hours allocated. Finally, a political decision in beginning 2011 was the launch of a national ''anti-dementia'' plan, where focused groups are currently finalizing different aspects related to this disease (social impact, prevention and restraints versus freedom of choice) will be presented.
Conclusion.– The medical decisions related to elderly will be integrated in a strict legal framework where the future will show us if for the better of the patient.

PC-511

Causes of greater use of restraints and influence of cognitive and functional impairment in prescription

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Aim.– To determine the prevalence and causes of physical restraints use in a nursing home for dependent elderly people by assessing whether greater cognitive and functional impairment of the elderly was associated with increased prescription of these devices.
Material and methods.– One hundred and forty-three physical restraint episodes were accounted in which 192 restraint devices were used. Data on the type and number of devices, causes of restraint devices, functional dependence level according to Modified Barthel Index (IBM) and severity of cognitive impairment according to Red Cross Mental (CRM) were collected (5 and 8 elderly had not completed these scales). Qualitative variables were compared using Chi-square test by setting a significance level of 0.05 as the limit of statistical significance.
Results.– Use of physical restraints prevalence was 27.5% (49 users needed at least one type of restraint device). If we include the use of bedrails, restraint prevalence increases up to 55% (98 users). By removing the bedrails of the analysis, 49 residents are ''without restraint'', of which 45 were functionally independent and 33 cognitively normal. The causes of the 143 episodes were divided into: instability 52 (36.4%) of cases, slip and fall risk 46 (32.2%), delirium 29 (20.3%), wandering and flight 9 (6.3%), a tendency to fugue 4 (2.8%) and control probes/catheters/cures 3 (2.1%). According to IBM, only 47 (27.2%) of our elderly people are functionally independent and 34 (20.6%) cognitively normal according CRM. Greater cognitive and functional impairment of the elderly is associated with increased prescription of these devices: $P = 0.0001$ and $P = 0.0001$ respectively.
Conclusions.– There is probably an excessive use of bedrails which affects elderly with no cognitive impairment or physical dependence for which there is a need of research on the causes. To ensure the best care in cases where restraints are indicated, it is necessary to implement a protocol and to conduct periodic reviews.

PC-512

Predictors for survival in aged patients

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Introduction.– Sarcopenia – loss of muscle mass and strength with age – is seen as a major cause of disability and morbidity in older adults.

The aim was to evaluate how handgrip strength (HGS), body mass index (BMI kg/heigth^2), and lean tissue index (LTI = lean tissue mass/heigth^2) are associated with one-year mortality in elderly patients.
Methods.– Two hundred patients $\geq$ 70 years admitted to an acute geriatric ward were included.
Body composition was monitored with bBioimpedance spectroscopy (BCM Body Composition Monitor, Fresenius Medical Care). Lean tissue mass (LTM) and body height was used to calculate LTI (LTM/height^2, kg/m^2). Muscle strength was measured with a handgrip dynamometer. The patients were grouped according to quartiles of LTI. Mortality during one year was recorded.
Results.– Altogether 182 patients were assessed for HGS, 176 for BMI and 173 for LTI. Mean age was 84 years. Mean HGS was 15 kg, minimum 2 kg and maximum 61 kg. Mean BMI was 24 kg/heigth^2, minimum 11 kg/heigth^2 and maximum 56 kg/ heigth^2. Mean LTI was 11 kg/m^2, minimum 5 kg/m^2 and maximum 18 kg/m^2. One-year mortality was 18%.
BMI ($P < 0.036$) and LTI ($P < 0.004$), but not HGS ($P < 0.086$) were found to be significant predictors for mortality in our study. When adjusted for each other, only LTI was significant.
Mortality was 6.2 times higher in LTI quartile 1 than in LTI quartile 4 ($P = 0.007$).
Conclusion.– In our study, LTI was found to be a strong and significant predictor for one-year mortality. Further, LTI appeared to be a stronger predictor than BMI and HGS. This may state the importance of interventions for increasing the muscle mass in the elderly.

PC-513

The association between oral hygiene and muscle strength in hospitalized elderly

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Introduction.– Proper oral hygiene is important to prevent bacterial growth in hospitalized elderly. Oral microorganisms can be aspired and cause pneumonia in medically compromised elderly. Many elderly are weakened by diseases. Handgrip strength (HGS) is used to assess functional performance in frail elderly. Lean tissue index (LTI) is an indicator of muscle tissue mass related to the patient's height. The aim was to investigate whether poor oral hygiene was associated with reduced HGS and loss of lean tissue in elderly patients.
Method.– Two hundred elderly $\geq$ 70 years, hospitalized for acute medical disease, participated in this cross-sectional study. Exclusion criteria were dementia and/or coming from nursing home. The oral examination was performed bedside by a dentist (KS), using mirrors, probe and headlamp. Two physicians, (CMB and KS), measured HGS and assessed LTI with bioimpedance spectroscopy. Plaque accumulation and mucosal/gingival inflammation were assessed with the index Mucosal–Plaque Score (MPS). The index has 4 scores for plaque and 4 scores for mucosal inflammation. The scores are summarized. Sum score $\geq$ 5 indicates "not acceptable oral hygiene". Spearman's correlation coefficient was used for associations.
Results.– HGS was measured in 181 patients, and LTI was assessed in 173 patients. Mean age was 84 $\pm$ 6 years, ranging from 70–103 years. The prevalence of "dentures only" was 18% and the prevalence of "own teeth only" was 55%. Mean MPS was 4.3 $\pm$ 1.1. The prevalence of "not acceptable oral hygiene" (MPS $\geq$ 5) was 43%. Mean HGS was 14.8 $\pm$ 8.3 kg (2–60.7 kg). Mean LTI was 10.6 $\pm$ 2.8 kg/m^2 (5.1–21.7 kg/m^2). MPS was negatively associated with HGS and LTI ($r = -0.282$, $P < 0.001$), ($r = -0.359$, $P < 0.001$), respectively. Our findings remained significant after adjusting for age, gender, and smoking.
Conclusion.– These findings imply that elderly patients with loss of muscle mass and low HGS have reduced oral hygiene and are in danger of mucosal infections and bacterial growth which may utterly compromise their general health. Nursing staff should be aware of this problem and help frail patients with oral hygiene when needed.

PC-514

Evolution of pressure ulcers (PUS) in patients admitted to a long-term care unit (LTCU)

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Objective.– Describe the evolution of PUs in patients admitted to a LTCU.
Method.– Longitudinal retrospective study that includes all patients admitted in a LTCU between September 2009–August 2010. The following data were collected at admission, during admission and at discharge: Barthel, Norton, PUs presence, location, stage (S), presence of infection. Those patients who remained hospitalized in LTCU were analyzed throughout the year.
Results.– Out of the 98 patients admitted during that year, 63 (64.2%) had PUs (mean age: 79.6 $\pm$ 9.8; 53.9% women; mean Norton at admission: 11.8 $\pm$ 3.5). Barthel at admission was below 22 in 75% of patients. During follow-up, 27 patients died (42.8%) and 16 remained hospitalized (25.3%). There were a total of 122 PUs. At admission 92 PUs were recorded (75.4%). The most common location was sacrum – 34 PUs, 36.9% – and the most frequent stage was IV – 32 PUs. During admission, 11 (11.9%) PUs were healed and appeared 30 new ones (111 PUs). Eighty-four out of 111 PUs identified during admission were maintained at discharge (75.6%) and 27 were healed (24.3%); the 11 that were healed during admission remained resolved at discharge ($P < 0.05$). By comparing stage distribution between admission/discharge, the following was observed ($P < 0.005$): of 32 Stage IV PUs at admission, at discharge 24 (75.0%) remained SIV, 7 (21.8%) became SIII and 1 (3.1%) was healed. Of 18 SIII PUs at admission, at discharge 11 (61.1%) remained SIII, 1 (5.5%) became SII, 6 (33.3%) were healed. Of 29 SII PUs at admission, at discharge 16 (55.1%) remained SII, 12 (41.3%) were healed and one became SI (3.4%). Out of a total of 13 Stage I PUs at admission, at discharge 6 (46.1%) remained SI, 5 (38.4%) were healed, 1 became SII (7.6%) and 1 became SIV (7.6%). By comparing the presence of infection between admission/discharge, the following was observed ($P < 0.001$): of 32 infected PUs at admission, 10 (31.2%) became non-infected, 14 (43.8%) remained infected, 4 (12.5%) were healed and 4 (12.5%) were colonized.
Conclusions.– A large percentage of patients admitted to a LTCU had PUs. During admission, a significant percentage of PUs was resolved, wounds severity decreased and the presence of infection was also decreased.

PC-515

Main characteristics of a sample of older patients with functional chronic constipation

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Background.– The chronic constipation supposes an important health problem in the elderly population and can cause several medical complications as well as a high impact on life quality.

Objectives.– To describe the main characteristics of an older inpatients' sample with functional chronic constipation according to the Roma III criteria.
Methods.– Cross-sectional descriptive study based on a health questionnaire (140 items) addressed to know the prevalence as well as the main clinical and functional characteristics of the older inpatients with functional chronic constipation (Roma III criteria) admitted in the Acute Unit Care of the Geriatric Department during 6 months. The questionnaire application and the physical examination were done by the same physician. Clinical variables: demographic data, comorbidity based on the Charlson index, pharmacologic history, perineal semiological findings, prior diagnostic procedures and medical treatments for the constipation. Functional variables: ADL index, mobility, cognitive impairment.
Results.– Sample: 80 patients (mean age: 80.5; range: 69–103 years; 55% females). Subgroup of constipated patients: 40 (mean age: 85.7; range: 71–99 years; females: 28 cases: 35%); average co-morbidity according to Charlson index was 4.3; 36 cases (45%) had been on laxative treatment; 13.7% (11 cases) were on opioid analgesic therapy. Thirty-five percent of the chronic constipated patients (28 cases) had cognitive impairment in different stages and 16.2% (13 cases) had immobility. Ten cases (12.5%) were setting in a nursing home. Physical findings: rectocele as new diagnosis 22.5% (18 cases). In various percentages, they required from different manoeuvres to facilitate the evacuation (17.5% vaginal compression; 11.5% digital extraction; 5% perineal compression). Most of the chronic constipated patients consulted for this medical problem, but only in 10% of them, some complementary study was performed. The only medical treatments recommended previously in all the patients were laxatives drugs or enemas.
Conclusions.– (1) The assessment of older patients who suffer from functional chronic constipation is limited, as well as the medical recommendations.
(2) We suggest a Comprehensive Geriatric Assessment to acknowledge all the medical and functional characteristics of older patients with functional chronic constipation in order to offer the best way to evaluate and treat this important health problem.

Clinical case 2/*Casos clínicos 2*

PC-516
Musculoskeletal symptoms: First manifestations in infective endocarditis caused by *Enterococcus faecalis*

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Background.– Musculoskeletal symptoms are frequent during infective endocarditis, and rheumatic complications may be the first manifestations of the disease and precede, sometimes by months, the specific symptoms of endocarditis. Peripheral arthritis occurs in 14% and spondylodiscitis in 3–15% of cases.
Case presentation.– An 83-year-old male presented in the past 6 weeks fever and an important physical disability. In the past 6 months he passed from walking with a cane being dependent for any basic activity (he wasn't able to walk, to eat). The patient does not show any sign of acute sintomatology except articular pain. The past medical history included hypertension, arthralgia, myalgia, back pain (in the paste 6 months). His usual daily drugs were: anti-inflammatory. The physical exam was normal. No murmur was appreciated, and no stigmata of endocarditis (e.g. Osler nodes, Janeway lesions) were detected. No sign of constitutional syndrome.
The blood cultures yielded *Enterococcus faecalis*. A transesophageal echocardiogram revealed vegetations on aortic valve that concluded the diagnosis of infective endocarditis.
The antibiotic regimen was: ampicillin and gentamicin. The patient remained afebrile; he had an important recovery and 3 weeks later he was discharged and continued intravenous treatment at home. Two weeks later his son announces the sudden death of his father.
Conclusions.– *E. faecalis* is the third most-common cause of bacterial endocarditis overall and the prognosis is determinate by advanced age, cardiac failure, brain emboli, but reports of osteoarticular infections complicating enterococcal endocarditis are rare, especially when compared with the incidence in streptococcal and staphylococcal infective endocarditis. In the case of our patient, osteoarticular infections was the reason that made him dependent for any basic activity and having an important recovery with the right treatment. The late diagnosis, the age of the patient and the complicated infective endocarditis, in this particular case, were decisive in the prognosis, despite the fact that we don't know the real death reason.

PC-517
Linear immunoglobulin (IgA) bullous dermatosis eruption presenting as a rare side effect of Tazocin® (pipercillin/tazobactem) administration in an older adult

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Introduction.– Linear immunoglobulin-A (IgA) bullous dermatosis (LABD) is an uncommon autoimmune blistering disorder, characterised histologically by the linear deposition of IgA at the dermal basement membrane zone (BMZ). Complement activation results in the loss of adhesion at the dermal-epidermal junction, causing blister formation. Treatment for multiple morbidities is associated with a higher frequency of drug-induced LABD in older adults. We report a case of Tazocin® associated linear IgA disease, complicated by thrombocytopenic purpura, in a patient treated for hepatic paraductal abscesses.
Method.– A 70-year-old male was commenced on co-amoxiclav (amoxicillin/calvulanic acid) for a 1-week history of non-resolving community-acquired pneumonia. Past medical history included recurrent pulmonary emboli/deep venous thrombosis, protein C deficiency, ulcerative colitis and brucellosis. In-patient stay was complicated by swinging pyrexial episodes and worsening thrombocytopenia (platelet count 11×10^9/L). Tazocin® (broad spectrum penicillin) was started pending work-up for the aetiology. A 'burning sensation'/itch in the palms, eyes and sore throat developed on day-8 post-Tazocin® administration. Cutaneous manifestations of erythematous plaques/papules developed and subsequently progressed to vesicle/blister formation involving the abdomen, scrotum and limbs by day-14.
Results.– Skin biopsy revealed a predominantly polymorphonuclear infiltration in the sub-epidermal blister and direct immunofluorescence histology showed linear deposition of IgA at the BMZ. A bone marrow biopsy showed cellular infiltrates. Intravenous immunoglobulin (IVIg) was administered to modulate immune-mediated tissue damage. Blood cultures were negative for organism growth. Serology for *Mycobacterium coxiella*, *Mycoplasma*, *Brucella*, *Chlamydia*, and leptospirosis were negative. CT abdomen revealed intrahepatic ductal dilation with ill-defined areas of low attenuation, suggestive of paraductal liver abscesses in both liver lobes. MRCP findings were in keeping with sclerosing cholangitis. Rapid resolution of the skin lesions occurred over 48 hours upon discontinuing Tazocin®. Ciprofloxacin and metronidazole (duration 3 weeks) were started as per recommendation

of the microbiology service. Cicatricial pemphigoid was not demonstrated on ophthalmological review. Follow-up liver ultrasound, prior to discharge, showed the absence of abscess.
Conclusions.– Drug-induced LABD is widely reported with vancomycin but not with Tazocin®. A temporal relationship existed between the start/withdrawal of Tazocin® and the onset/resolution of the dermatological pathology. LABD is associated with autoimmune diseases, in this case, ulcerative colitis.

PC-518

Detection of frailty through gait assessment and accelerometer mechanisms

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Introduction.– Frailty concept is being developed in the last two decades. For its detection, it is classically appreciated the performance of IADL. Also, other indicators have been proposed to detect signs of this symptom in early stages.
Goals.– Our proposal tries to offer a more accurate and thorough assessment of pre-frailty state. Thus, by studying and analysing of gait as an indicator from the clinical point of view, our system complements the diagnosis by means of the accelerometer embedded into the mobile phone.
Material and methods.– We have carried out a study at elderly residence in Ciudad Real. This center has a capacity for 300 elderly people. Twenty of them were selected. They are independent to do ADL and they have not a cognitive impairment.
Medical record is reviewed, collecting variables related to sex, age, marital status, clinical assessment, functional and mental health. Gait evaluation consists on: (a) walking 25 m; (b) Tinetti balance scale application; (c) gGet up and Go test. Therefore we have placed a mobile phone on the waist of each patient getting his/her movement pattern. The study of this pattern, taking into account the initial medical assessment, offers a complete analysis of your physical condition. This initial assessment is done every 15 days for 2 months. Analytical study with nutritional parameters and statistical analysis through SPSS are also contemplated.
Results.– Twenty elder people were studied, 10 women and 10 men. The average age is 82 (SD $\pm$ 5) years old. We present clinical data and charts associated with the gait pattern obtained. And the study of this pattern, through recognition and classification techniques performed by the mobile device itself, has been performed.
Conclusions.– The estimation of physical frailty is achieved by applying computational algorithms for analysis, classification and comparison of the movement pattern associated with the patient over a set of gait patterns. Through their corresponding scores, in medical tests and scales, we establish different degrees of affinity. That is, similarity between patterns. Thus, we can prevent falls and fractures, delaying, as far as possible, the syndrome of frailty in his physical component.

PC-519

Permanent pacemaker implantation in an Irish centenarian

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Introduction.– Permanent pacemaker (PPM) implantation is indicated for acquired atrioventricular block, chronic bifasicular/trifasicular block, sinus node dysfunction, neurocardiogenic syncope, and the prevention of tachyarrhythmias. We report a case of PPM implantation in a 102-year-old Irish female who developed symptomatic bradycardia with prolonged pauses.
Method.– A 102-year-old female, who had sustained a right inferior/superior pubic ramus fracture following a fall at home, was admitted to a rehabilitation hospital, for intensive multidisciplinary team input. Her past medical history included hypertension (treated with Amlodipine and Frusemide/Amiloride). On admission, her Amlodipine was discontinued due to bilateral lower limb oedema and Bisoprolol 1.25 mg OD, was subsequently commenced. Her diuretic medications were discontinued 1-week post-admission, secondary to documented postural hypotension (lying BP = 140/65 mmHg, standing BP = 116/58 mmHg). Two weeks following admission, she experienced several witnessed episodes of 'funny turns' (which were all preceded by pallor), associated with generalized weakness but with no loss of consciousness. Following such an event, her HR was 48 beats/minute (bpm) and blood glucose concentrations were normal. An electrocardiogram showed bifascicular block (1st degree heart block with a left bundle branch block pattern). A 24-hour Holter monitor revealed 3 episodes of sinus bradycardia (slowest HR = 14bpm), in addition to 197 pauses (longest lasting 10.9 seconds). Bisoprolol was ceased. Transfer was arranged to the Coronary Care Unit (CCU), under the care of the Cardiology and Geriatric Medicine services, of an acute hospital, for further management options.
Results.– CCU telemetry showed pauses, with the longest being 9 seconds. Chest X-ray, renal profile, complete blood count, cardiac markers, and thyroid function tests were all normal. She underwent an uneventful PPM implantation procedure (SORIN Reply^{TM} DR, DDD mode, with a pulse generator rate = 60 bpm) to the left pectoral area. One-day post-procedure she was transferred back to the rehabilitation hospital and resumed rehabilitation therapy. She was discharged home 1 month later and was mobilizing with a Zimmer Frame. On review, 6 months post-PPM implantation, she was clinically well.
Conclusions.– To the best of our knowledge, this case is the oldest patient to have a PPM implanted in Ireland. PPM implantation is a viable intervention that can be effectively and safely provided for older adults.

PC-520

Calcanectomy: An alternative to amputation in calcaneal osteomyelitis

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Introduction.– Calcaneal ulcers present an interesting dilemma to the treating physician, especially when these ulcers become infected and develop underlying osteomyelitis. It typically results in a partial or total calcanectomy or even more frequently, high-level amputation.
Case report.– An 85 years old woman with hypertension, diabetes, chronic atrial fibrillation and left hip fracture in December 2010. She was admitted with a 3-day history of fever over 39 °C, denying other symptoms.
Current medication.– Insulin, omeprazole, paracetamol, enalapril, mirtazapine and lorazepam.
Functional assessment: KATZ G, urinary and fecal incontinence, deambulation with walker. Moderate–severe dementia. GDS 6. CDR 2–3. She lived at home with her daughter.
Physical examination.– Left heel ulcer with smelly exudate and abundant necrotic tissue. No other findings to highlight.

Additional tests.– White-blood cell count of 13,000, 90% segmented. PCR > 20. Blood and exudate ulcer culture: *Morganella morganii* and *Proteus mirabilis* susceptible to quinolones. Intraoperative biopsy of calcaneus: *M. morganii*, *P. mirabilis* and *Bacteroides fragilis*. Radiological signs of osteomyelitis were found.
Evolution (photos provided).– Low-grade fever despite high spectrum antibiotic therapy. Suspecting osteomyelitis, we discussed with Traumatology Service the relative roles of conservative surgery versus other approaches. Calcanectomy was the treatment chosen. Good clinical response, remaining without fever. After discharge, local treatment continued with positive evolution, recovering previous gait.
Conclusions.– 1. Calcanectomy is an uncommon amputation that may provide better quality of life than other more proximal amputations in the elderly. 2. Proximal levels of amputation are associated with increased mortality and morbidity, specially among our patients. 3. Calcanectomy should be considered as an alternative type of amputation which provides an effective chance to maintain the patient's independency.

PC-521

Exercise and physical activity during adulthood as predictors of falls in the old age

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Objective.– To evaluate whether physical activity during adulthood influences the occurrence of falls in the old age.
Method.– Case-control study of a sample of 40 patients selected by convenience sampling among those admitted to the sub-acute care unit, the convalescence unit or the emergency room of the Regional Hospital CSG (Consorci Sanitari del Garraf), from February through May 2011. All patients older than 64 years without cognitive deterioration or speech disorders at the moment of evaluation were included. The following variables related to physical activity in adult life were recorded through interviews: 1. intensity and duration (in years) of main-work related activity; 2. body-position at work; 3. daily time dedicated to vigorous activities and to light activities; 4. sporting habits and type of sport; 5. number of falls in the last 6 months (we considered "cases" patients with at least 1 fall in the last 6 months). Control variables were patient's sociodemographic data, habitual treatment and disease background. The association between falls and the above variables was studied through bivariate analysis. For a better representation of the physical activity degree, a compound variable was created including intensity of main-work related activity, duration in years, and sporting habits in leisure-time.
Results.– Participants' mean age was 79 years and 62.5% of them were female. The intensity of main-work related activity ($P < 0.05$), and the daily time dedicated to vigorous activities ($P < 0.01$) were inversely associated with the occurrence of falls in the old age (Chi-square test). Patients doing intense working activity, during at least 40 years, and additionally doing sports (compound variable) showed significantly less falls than patients with a background of more sedentary adult life (Chi-square test: $P < 0.05$; OR 6.17, IC 95% 0.67, 56.15, ns).
Conclusion.– These preliminary data suggest that the degree of physical activity during adulthood influences the risk of falls in the old age.

PC-522

Hallucinations, delusions and depression in a 75-year-old man: An adverse effect of cinnarizine

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Introduction.– Cinnarizine, a piperazine derivative, has been used to treat dizziness/vertigo in The Netherlands and most European countries. However, the use of cinnarizine is associated with adverse drug reactions (ADR's), including central nervous system. The most frequently reported ADR's in the literature are extrapyramidal syndromes and depression.
Case report.– We describe a 75-year-old man, who was admitted to our elderly department because of complex visual hallucinations, paranoid delusions and depression due to cinnarizine. He had no history of psychiatric disorders or cognitive impairment. Cinnarizine (25 mg 3×/day) was prescribed 2 years before admission because of Meniere's disease and each vertigo episode was treated successfully. However, the patient had developed due to each treatment complex visual hallucinations consisting of insects creeping on the wall, animals and people moving around the room. He said that he never told his otolaryngologist or anyone about his hallucinatory experiences, furthermore, he knew that the symptoms were drug-induced and he had accepted them because of the benefit from vertigo treatment.
Three months before admission, the dose was increased to 50 mg three times a day because of frequent/severe vertigo episodes. During the following days, the hallucinations had become more vivid and intense, he developed paranoid delusions of being followed or poisoned by others and multiple depressive symptoms. His psychiatric symptoms gradually worsened and hospitalization was necessary. Three weeks after discontinuation of cinnarizine, he reported complete remission of all complaints, while no antipsychotics or antidepressants were prescribed.
Discussion.– The mechanisms underlying the neuropsychiatric ADR's caused by cinnarizine are not fully clear. Cinnarizine has unique/various mechanisms of action, it works as an antihistaminicum, anti-dopaminergicum, anti-cholinergicum, anti-serotonergicum and as a calcium channel blocker. There is strong circumstantial evidence in the literature that neurotransmitters play significant role in the pathophysiology of various neuropsychiatric disorders such as depression, bipolar disorder and psychosis/schizophrenia. The administration of cinnarizine can cause neurotransmitter disregulation.
Conclusion.– In our patient, the neuropsychiatric symptoms began only after he had started with cinnarizine and improved substantially once the drug was discontinued. Furthermore, the symptoms returned when he had reused cinnarizine and they became more severe when the dose was increased.

PC-523

Vasculitis in octogenarian

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Introduction.– Fever of unknown origin can be produced by more than 200 clinical entities. Aetiological causes vary according to different groups of age. Fever in the elderly is mainly the result of autoimmune processes, malignancies, bacterial infections and vasculitis.

Case report.– An 83-year-old man with hypertension. No other illnesses reported. Asthenia, anorexia and weight loss of 5 kg in the last month. Forty-eight 48 hours before admission fever, cough and dysphonia.
Current medications: enalapril.
Physical examination: good general condition, conscious, well-hydrated and perfused. No lymphadenopathy. No other abnormalities.
Functional assessment: Katz A. Barthel 100/100. No cognitive impairment. Community-dwelling, he lives with his wife.
Evolution and results.– Fever of unknown origin under study. Chest CT showed subpleural pneumonia. High spectrum antibiotic therapy was used without fever remission. After a complete study, the patient was treated with NSAIDS, remaining afebrile. New admission 3 weeks later, presenting evident worsening of physical condition, with associated anemia and no signs of bleeding. Renal failure and progressive peripheral edema. Positive pANCA titles 1/320 on immunological study. Suspected vasculitis was treated with high dose of corticosteroids. Major complication during admission: alveolar haemorrhage (bilateral alveolar infiltrates on chest radiography), beginning treatment with cyclophosphamide. Renal biopsy confirmed the clinical diagnosis of microscopic polyangiitis. Positive clinical response, recovering previous functional statement. Further immunosuppressive treatment was provided on Day Hospital after discharge.
Conclusions.–
– Vasculitis with predominant renal involvement are more common in people over 65, a reality we must be aware of in order to early detect atypical causes of fever.
– The non-specific clinical presentation in these patients affects the practice of biopsy with worse renal function, more severe renal presentation and worst overall prognosis.
– In vasculitis with predominant renal involvement, it is essential to reach a quick and accurate diagnosis to introduce specific immunosuppressive treatment as early as possible.

PC-524

Coma in an elderly of unusual clinical reason

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Case report.– A 92-year-old woman with history of hypertension (HTA), severe osteoarthritis that determines her situation of dependence for activities of daily living (ADLs), with Barthel index 20/100 was sent to emergency presenting cough, expectoration, increase of respiratory noises and difficulty in breathing, resembling a respiratory infection.
Results.– The patient were admitted at hospital with intravenous antibiotic treatment, oxygen therapy and bronchodilators. Complementary tests are practised, of which emphasize the following values:
– biochemistry: CPK 1223 U/l, Na 132 mmol/L (136–145), TSH > 150 mcU/mL (0.35–5.35), serum free thyroxine (T4) 0.18 ng/dL (0.81–1.76);
– Rx thorax: possible basal right infiltrate;
– cranial TAC: vascular encephalopathy, without isquemic or hemorrhagic patology;
– echo thyroid: decrease of the thyroid, without nodules, related with thyroiditis subaguda-chronic.
Evolution.– She suffers progressive worsening of her health, and develops a coma before 48 hours she arrived at the hospital (Glasgow Coma Scale 5/15), with important difficulty in breathing, edema, hypercapnic respiratory failure, hypotension and bradycardia. She presents anasarca without cardiac insufficiency sings, hypercapnic respiratory failure and bradycardia, which make us suspect thyroid pathology, so we realize analytical that it reveals a severe deficit of thyroid hormones. The patient is diagnosed of "myxedema coma precipitated by respiratory infection".
We prescribed levothyroxine intravenous, with improvement and recovery of the level of patient's conscience, the edema and the difficulty in breathing decreased, allowing the oral nutrition and manage the patient with thyroid hormone pills. The basal levels of serum TSH, free T4, anti-tiroglobulyn antibodies, thyroid antimicrosomal (AMA), serum cortisol and thyroglobulin were 7.26 mcU/mL (0.35–5.35), 2.5 ng/dL (0.81–1.76), 2090 U/ml (0–40), > 1000 U/ml (0–35), 681 nmol/lt and 0.25 ng/ml (1.6–59.9), respectively at discharge.
Conclusions.– 1. Myxedema coma in the elderly, although uncommon, is frequently overlooked and has a high mortality rate. Signs and symptoms are often insidious. Prompt recognition and treatment are mandatory for a successful outcome.
2. Prevention requires screening of elderly patients at risk for hypothyroidism and assuring thyroid hormone replacement therapy.
3. Myxedema coma is usually caused by infections.

PC-525

The importance of geriatric nursing on exfoliative dermatitis: A case report

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Introduction.– Erythroderma, also known as exfoliative dermatitis, is a clinical multietiological syndrome that manifests as erythema and skin peeling affecting more than 90% of the skin surface. In elderly patients and widespread lesions, prognosis can be serious or even cause death.
Case report.– An 80-year-old man was admitted to the Geriatric Department because of generalized erythema. The initial symptom appeared 15 days before admission: refractory pruritus and subsequent skin flushing, starting at the lower limbs with later spread to the rest of the body, respecting plants and palms.
Medical history.– No allergies, 20 cigarettes per day. Prostatic adenoma surgery. Right inguinal hernia. Mucosa-associated lymphatic tissue (MALT) lymphoma (Stage IV). Treatment: Allopurinol, Fludarabine.
Geriatric assessment.– Married, 4 children emancipated. Fluctuating impairment of higher functions during the last year. Non-recognition of relatives. Repetition of ideas. Urinary incontinence, independent for the rest of day-living activities. Goes out every day without technical aids.
Physical examination.– The lesions involved more than 90% of body surface, with extensive hyperkeratotic plaques in the lumbar area and buttocks, face and scalp. Deep cracks in 4 extremities flexures. Suspected diagnosis: drug-induced toxic erythroderma.
Nursing care program (photos provided).–
– Daily bathing in warm water with soap and oatmeal (10 minutes). There will be no friction. Drying will be detailed, with particular attention to interdigital areas. No alcohol will be applied.
– Mupirocin twice daily (open wounds), covering with sterile compresses the most weeping. Paraffin oil (rest of the body).
– Isolation in air-conditioned room with uniform temperature and humidity.
– Skin peeling causes loss of proteins, vitamins and other nutrients. Adequate food and water intake (to assess protein supplementation).

– Early movements (to prevent functional impact and loss of muscle mass).
Conclusions.– (1) Geriatric nursing in erythroderma is a key point to restoring health, minimizing the impact of this disease and avoiding serious complications. (2) Multidisciplinary work is essential. An adequate communication between nurses and geriatrics is required. (3) A detailed plan of nursing care is important for the successful management of this serious disease, potentially lethal.

PC-526

Severe thrombocytopenia after hip fracture surgery

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Objectives.– The prevalence of alterations in platelet and hemoglobin of elderly patients of hip fracture surgery is very common and often minimized presenting later medical complication and hospital readmissions.
Geriatricians in surgical services should monitor and adequately treat these problems for the patient to regain their previous basal situation as quickly as possible and so avoid their disability.
Methods.– We report a case of an 81 years old patient with personal antecedents: arterial hypertension, diabetes, osteoporosis, polymyalgia rheumatica and adenocarcinoma of prostate treated with radiotherapy.
Treatment.– Aspirin, corticosteroids and biphosphonates. **Baseline:** Barthel 100, 0 error Pfeiffer, walking autonomous, cognitive impairment, independence for basic and instrumental activities.
Results.– The patient was admitted to the orthopedic service for hip fracture. Two days after surgery presented acute urinary retention, fever and general malaise. In the analytic also diminution of the number of platelets associated to scrotal hematoma with 2500 leucocytes, 8.6 hemoglobin, 7000 platelets, normal biochemical, urinalysis with leukocyturia and heparin antibody negative. The patient is treated with acetaminophen, heparin and cephalosporins. Differential diagnosis is made: **pharmacologic**, **sepsis**, **idiopathic**, **lymphoma**, **vasculitis** and **metastatic cancer**. After clinical worsening, it is done: **CT abdominal** presenting a mass abdominal, **biopsy**: low grade lymphoproliferative process. **Bone marrow biopsy**: hypercellular with increase of immature forms and macrocytosis. **Bone scan**: absence of metastasis.
The patient was removed, low molecular weight heparin was administered high dose corticosteroids, platelet transfusion and infusion of gamma globulin without clinical improvement. After results the patient was transferred to the hematology service.
Conclusion.– The patient has a **low gradel lymphoma** treated with a low dose chemotherapy and recovered the number of platelets and their functional independence.

PC-527

Successful handle of autoinmune skin disease in the elderly: The geriatric philosophy put into practice

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Introduction.– Bullous pemphigoid (BP) is the most common autoimmune bullous disease in the elderly. Nursing interventions on extended skin diseases are as important as pharmacological treatments. These interventions are focused on the reestablishment of skin integrity, symptoms relief, prevention and treatment of complications.
Methods.– Case report of a community-dwelling 94 years old man with diabetes mellitus type 2 on treatment. Widower supervised by his daughters. Gait assisted with walking stick. Occasional urinary incontinence. Forgetfulness for recent events and repetition of ideas. Good recognition of relatives. No disorientation or repercussion in daily activities.
Present illness (illustrative photos provided): flaccid, serohemorrhagic itchy blisters, beginning in lower extremities that became generalized after three weeks, affecting the practical totality of the cutaneous surface, without involvement of the oral mucosa. No febrile syndrome associated nor recent changes in usual medication.
Complementary studies: biopsy and immunofluorescence: suggestive of bullous penfigoid. Positive C3 and Ig G.
Results.– Medical treatment: glucocorticoids and later azatioprine in order to reduce corticoid doses (recent history of upper gastrointestinal tract bleeding related to non-steroidal anti-inflammatory drugs).
Nursing care plan: since admission and while blisters and wounds persist, zinc sulfate emulsion during 10–14 minutes in affected areas. In exuding injuries, cicatrizant compresses and silver sulfadiazine cream. In dry injuries: petroleum jelly. Topic clobetasol for recidivant lesions.
Conclusions.– 1. The skin of the elderly undergoes a number of changes, like higher susceptibility to injuries (ulcers by pressure, tears and erosions by manipulation), as well as a slower healing. The immune system deterioration leads to autoimmune affections, the most common BP.
2. Autoimmune blistering diseases are a significant cause of morbidity and mortality in elderly population. In geriatrics, pathologies considered benign frequently associate serious consequences in functional state, with physical and psychological impact.
3. The need of a careful nursing plan, constant reassessment and treatments prolonged with important side effects, illustrate the importance of the multidisciplinary approach and the comprehensive geriatric assessment.

PC-528

Actinomycosis at 87 years old: A rare disease

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Objectives.– Actinomycosis is an uncommon chronic disease (25 cases/10^6, USA, 2008), male to female ratio, 3:1. Rarely observed in children and patients older than 60 years. Its presentation is usually considered as a malignancy rather than an infection process. Location: cervicofacial (50%), abdominal (20%), thoracic (15%). Treatment: Penicillin. Adjuvant therapy: surgery. We present a case of pelvic actinomycosis of uncertain start and origin in a very old patient. Delay in diagnosis, torpid evolution and therapeutic limitations.
Method.– Literature review and patient clinical documentation (including biochemical, pathological, CT and microbiology).
Results.– Male, 87 years. Medical history showing abdominopelvic mass diagnosed in January 2010, treated with surgery (drainage) and Amoxiclavulanic acid for 3 months. Relapse in September 2010, treated with antibiotherapy (Quinolones and Metronidazole). Development of fever process for 5 days with increased waist circumference and color and temperature rise on the right suprailiac area. Admitted for treatment. Ultrasound-guided FNAB is performed and followed by a microbiological study. CT:

$12 \times 8 \times 11$ cm mass in right iliac fossa with infection due to nearness in sigma, abdominal muscle and bladder. The patient is scheduled for surgery (January 2011). As a result of Actinomyces, surgery is suspended and we begin a treatment with intravenous Penicillin G (20 million IU/day, 6 weeks). During the 3rd week a mass appears in the middle section of the iliac region evolving into a central necrosis for 48 h and drainage is decided. Once treatment is completed, we change treatment to Amoxicillin–Clavulanic orally. After 6 weeks abdominal mass increases. Ceftriaxone treatment is started to 1 g/day. Clinical and CRP value improvement.
Conclusions.– Rare diseases know no boundaries of age and do appreciate the added value of interdisciplinary work. Despite the proven success of antibiotics, with little resistance, the location and extent (hydronephrosis, bladder wall, displacement of large vessels) of this case make surgery provide not enough benefit due to high risks (complete exeresis). In the absence of other evidence, we assume that the torpid course of our case is due to the late diagnosis, turning the disease into a chronic and malignant process.

PC-529

PET/CT as a diagnostic tool in elderly patients with fever of unknown origin

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Introduction.– Fever of unknown origin (FUO) is a big challenge in elderly patients often because of atypical presentation of common diseases. The diagnostic approach in FUO includes repeated physical investigations and comprehensive medical history combined with standardized laboratory tests and imaging procedures. Nevertheless, there is a need for more complex techniques if this strategy fails. Positron Emission Tomography/Computed Tomography (PET/CT) provides a new possibility to combine functional and anatomical images, which can be helpful in the diagnostic work-up of FUO.
Method.– A presentation of two clinical cases with FUO, where PET/CT were used in the evaluation and diagnosis of the patients. The patients were admitted to a geriatric ward with fever and loss of function and were undiagnosed after 1 week of hospital evaluation. The examination of the patients included standard imaging procedures (abdominal ultrasound, echocardiography and CT scan of the chest, the abdomen and the pelvis). Finally a PET/CT with FDG (Fludeoxyglucose-18 F) as the biological active molecule associated to regional glucose uptake was performed.
Results.– **Case 1**. An 84 years old women with FUO and shortness of breath on exertion and loss of function. PET/CT showed accumulation of FDG in the pericardium. The patient received treatment for pericarditis.
Case 2. A 79 years old male with Alzheimer's disease and FUO and loss of function. PET/CT showed accumulation of FDG in the major joints of the limbs and their surrounding regions. The patient received treatment for polymyalgia rheumatica.
Conclusions.– PET/CT can be a valuable imaging procedure in the evaluation of elderly patients with FUO. The presented cases contribute to the clinical knowledge of PET/CT as a possible and useful imaging procedure in patients with FUO.

PC-530

Serotoninergic syndrome - A case report

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Introduction.–The serotoninergic syndrome constitutes a potentially fatal adverse drug reaction, a predictable consequence of the excessive activation of the Central Nervous System serotonin receptors, as well as peripherally. There is a clinical triad that englobes changes in the level of consciousness, autonomic hyperactivity and neuromuscular abnormalities.
Case report.– The authors describe the clinical case of a 79-year-old man, with metabolic syndrome, that came to emergency department complaining of sudden prostration, delirium and 41.0 °C fever. He had been prescribed with sertralin (50 mg) daily, three days before. Physical examination revealed a strong agitation, normal coloured skin without exanthemous lesions, mydriatic pupils, diaphoresis, axilar temperature of 41.5 °C, blood pressure of 190/105 mmHg. Moreover, he had tachycardia, unchanged pulmonary auscultation, myoclonus in the left lower limb and asynchronously in the right lower limb; spontaneous nystagmus and hypereflexia (mainly in the left lower limb). From the first laboratory findings we must point out leukocytosis (14,500 U/L), CK of 670 U/L and normal ammonia and alcohol blood levels. The skull- brain CT didn't show any acute lesions or hematic densities; a lumbar puncture was also performed, the cerebrospinal fluid was crystal, without cytological changes and negative culture. All the blood, urine and faeces cultures were negative, as all the serological tests. During the patient's hospital stay, sertralin was suspended and treatment with benzodiazepines was started.
Conclusions.– The authors believe that, especially in the older population, the diagnosis of serotoninergic syndrome, should never be neglected, even though it is a clinical diagnosis (an exclusion one), because there are no laboratory or imaging tests that may confirm it. It is not a common entity.

PC-531

Early pain management on severe herpes zoster with oxycodone: A case report

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Introduction.– Herpes zoster is caused by reactivation in adults of the varicella-zoster virus (VZV) that causes chickenpox in children. Therapeutic strategies to prevent postherpetic neuralgia (PHN, defined as pain lasting 2 months or more after an acute attack of herpes zoster) have been seriously analyzed. Acute zoster pain (AZP) in elderly patients can be severe and has a great impact on health-related quality of life, but there have been few clinical trials of oral medications different from antiviral therapy and tricyclic or anticonvulsant agents. The role of opioids in this setting is starting to be elucidated.
Method.– Case report of an 80-year-old patient admitted to our Geriatric Acute Unit with painful, unilateral vesicular eruption, affecting T1-2 dermatomes (left part of the body, photos provided). Prior to admission, famciclovir at usual doses was started. Gabapentin did not relieve intense pain (10/10 on the visual analogue scale, VAS), but produced dizziness and dry mouth. Geriatric Assessment: widower, community-dwelling. Supervised by his only daughter. Hypertension and hypercholesterolemia on treatment. No cognitive nor functional impairment (Pfeiffer 1 error, modified Barthel 95/100).
Results.– We started oxycodone oral administration 3 mg every 12 hours, with significant pain relief from 10/10 to 4/10 (VAS) during the first 24 hours. No constipation, dizziness, nausea nor vomiting were observed. Because of good tolerance and pain persistence, we increased oxycodone dose to 5 mg every 12 hours, with complete pain relief from the 3rd day to discharge.

Conclusions.– AZP has a great impact on elderly patient quality of life. Perhaps its early disappearance may explain the lack of clinical trials about additional treatment different from antivirals, tricyclics or anticonvulsants.
In our case, oxycodone at low doses provides significant pain relief and prompt recovery of previous functional status.
Procinetic agents and laxants may minimize potential side effects of this medication, as well as combined tablets with naloxone.

PC-532

Traumatic brain injury by cardiogenic syncope: A case report

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Case report.– A 77 years old lady presented with syncope which lasted for a few seconds with amnesia for loss of consciousness and presented traumatic brain injury.
Method.– The patient had a medical history of arterial hypertension. No others illnesses reported.
Current medications.– Enalapryl and paracetamol.
Functional assessment.– Barthel 100/100, deambulation without aid. No cognitive or sensory or emotional impairments. GDS 1, AMTS 10. She lived at home with her husband.
Examination.– Normotensive and normothermia. She was conscious and asymptomatic. No neurological deficit or other symptomatology associated. GCS E4, V5, M6.
Additional test.– Blood count, cardiac enzymes, troponinl, serum electrolyte, renal functions, liver enzymes and thyroid function all were normal. *ECG*: showed a normal sinus rhythm (60 bpm), PR normal.
Transthoracic echocardiography.– Revealed normal left ventricular systolic with preserved ejection fraction (65%) and diastolic functions**.**
Holter monitoring.– Revealed sinus rhythm and sinus bradycardia (35 bpm) combined with runs of SVT that terminated with a pause of 5 seconds.
Crania CT.– Revealed occipital bone fracture right and left frontal subdural hematoma 5 mm thick. She also presented small hemorrahagic focus in left frontal furrows.
Evolution and results.– The patient was aymtomatic without neurological deficit at admission. She was reviewed by the department of Neurosurgery and surgical treatment was discarded.
Trachybrady syndrome was reported and it was necessary to implant a permanent cardiac pacemarker for bradycardia and start rate limiting drugs to control tachyarrhythmias.
Conclusions.– Cardiogenic syncope indicates serious pathology in the cardiovascular system. It is an entity with significant prevalence and incidence in the elderly and has negative implications in the quality of life.

PC-533

Pleural empyema and purulent pericarditis due to ***Streptococcus pneumoniae***

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Introduction.– An 84 years old woman with arterial hypertension, chronic obstructive pulmonary disease without home oxygen therapy and chronic ischemic stroke ten years ago with left hemiparesis residual. No others illnesses reported.
Case report.– The patient presented dyspnoea and peripheral oedema with postration for several days. No fever and other symptomatology associated.
Current medications: aspirine, paracetamol and furosemide.
Examination: heart rate of 120 bpm, presence of arrhythmia with a rapid pulse, pulmonary crepitations and peripheral oedema.
Functional assessment: Katz C, Barthel 70/100, deambulation with walker. Presence of anxiety and loss of short-term memory and she is religious in the community. CDR 0, 5, AMTS 7.
Additional tests:
– **blood test***:* creatinine 3.2 μmol/L, urea 171 mmol/l, glucose 1.64 mmol/l, D-dimer 687. White-blood-cell count of 18,000 with 85% segmented. Tumour markers, hepatitis serology and immunological study were normal. No other alterations were reported;
– **chest radiograph***:* cardiac enlargement fluid in the horizontal fissure, Kerley B lines and bat wing pulmonary oedema;
– **ECG:** atrial fibrillation (130 bpm);
– **transthoracic echocardiography:** left ventricular hypertrophy with preserved ejection fraction (57%) and massive pericardial effusion;
– **blood cultures:** *Streptococcus pneumoniae* susceptible to penicillin and glycopeptides. *Cultures of the pleural and pericardial* fluid were also positive to *S. pneumoniae* susceptible to penicillin and glycopeptides;
– **urine culture:** positive to *Candida albicans*;
– **abdominal CT:** encapsulated pleural effusion lateral margin of the left pulmonary base of 3.3 cm thick and 13 cm AP and craniocaudal axis. In addition, pericardial effusion average thickness 15 mm.
Evolution and conclusions.– She was found to have purulent pericarditis due to *S. pneumoniae* complicated by massive pericardial effusion and pleural empyema. A pericardial tap was performed and was evacuated. Pleural effusion was also evacuated with thoracocentesis. Antibiotic therapy was started immediately with vancomycin and meropenem during 15 days. Gradual heart function recovered and normalisation was observed.
S. pneumoniae and *S. aureus* are more common pathogens in all settings, including hospital.
Early recognition of pericardium is a key point, due to the fact that emergent pericariocentesis may be required if there is clinical evidence of tamponade.

PC-534

Spondylodiscitis in geriatric patients. A short experience in hospital Infanta Elena

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Introduction.– Spondylodiscitis is a very infrequent pathology that involves inflammation of two adjacent vertebral bodies and the disk in between.
Aim.– To report clinical diagnosis and follow-up of a series of patient seen in our hospital from its opening (2008) till today.
Material and methods.– Observational, descriptive, and retrospective study. Analysis of demographic and clinical features from medical records of patients with probable diagnosis of spondylodiscitis confirmed by imaging study (8: MRI and 1: CT) also with puncture or surgery (3 patients).
Results.– A total of nine patients were seen in our institution; seven female. Mean age (70.5 ± 7.1). Mean Global Deterioration Scale of 2 with only one patient with 5 points score (such patient with Katz score of G). Mean Charlson co-morbidity index of 3. Fever and back pain were the most frequent symptoms, seen in 8 patients (88.8%); one patient (11.1%) had diminished sensibility in lower limbs. Mean Reactive protein C level was 15.6 mg/l and mean erythrocyte sedimentation rate was 100 mm/h. Magnetic resonance imaging was performed in 8 patients; in only one

patient was performed Computerized Tomography (CT) due to contraindication of MRI after surgical procedure with metallic implants on the spine. Inflammation was found in L3-L4, L4-L5, L5-L1 (two patients each) and in D3-D4, D10-D11, D1-D2 (one each). *S. aureus* was found in three patients followed by *E. coli* in two patients (samples obtained by imaging guided puncture). Surgery was performed in one patient in order to drain an abscess (this patient had a surgical procedure before, and the spondylodiscitis appeared as a complication). In two patients diagnosis was confirmed by a positive hemoculture. None of the patients had died from complications of the disease.
Conclusions.– Spondylodiscitis is a very infrequent diagnosis however clinical suspicion and the use of different diagnostic techniques such as MRI helped to make the diagnosis. The clinical features observed in geriatric patients were very similar to such commented in medical literature. Also the prognosis was favorable in all patients seen in our series.

Miscellaneous 3/*Miscelánea 3*

PC-535

Metabolic syndrome, physical function and all-cause mortality among ambulatory men aged 75 and over in Taiwan

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Objective.– To evaluate the relationship of hand grip strength, gait speed and metabolic syndrome among ambulatory men aged 75 and over.
Design.– A cross-sectional study.
Setting.– Banciao Veterans Care Home in Taiwan.
Participants.– 544 ambulatory men $\geq$ 75 years of age.
Interventions.– None.
Main outcome measures.– Grip strength, 6-meter walking test.
Results.– Prevalence of ATP-defined MetS in the participants (mean age: 82.4 $\pm$ 4.7 years; range 75–102 years) was 31.3%. MetS was significantly associated with hypertension, diabetes mellitus, higher body mass index, waist circumference, systolic blood pressure, fasting blood glucose, and serum triglyceride; lower high-density lipoprotein cholesterol (P all < 0.05). However, MetS was associated with stronger grip strength (23.4 kg vs. 22.0 kg, $P = 0.017$) but not gait speed (0.91 m/s vs. 0.88 m/s, $P = 0.215$). Spearman correlation showed significant correlation between number of MetS component and grip strength ($r = 0.097$, $P = 0.024$).
Conclusions.– MetS is associated with stronger grip strength in older men aged 75 years and over and the grip strength is significantly associated with the number of components of MetS. Further study is needed to evaluate the clinical impact of stronger grip strength among older men with MetS.

PC-536

Post-acute care needs of hospital inpatients in Taiwan

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Introduction.– Post-acute care (PAC) is a cost-effective health service model, and should be delivered as soon as possible. The main purpose of this study is to evaluate the PAC need of hospital inpatients in a tertiary medical center in Taiwan to provide optimal estimation of PAC service establishment.
Method.– From May to October of 2009, all older veterans admitted to a tertiary medical center in Southern Taiwan, were screened for PAC needs. Comprehensive geriatric assessment (CGA) for patients who met the inclusion/non-inclusion criteria to screen PAC needs. PAC needs were determined by trained case managers.
Results.– Overall all, 409 patients (mean age: 80.4 $\pm$ 5.4 years, 96.8% male) met the inclusion/non-inclusion criteria during the study period, and PAC needs were present in 103 (25.9%) patients. Compared with other conditions, the decline of Barthel index among the patients with diseases of central nerve systems and musculoskeletal conditions were significantly higher than others, and they were more likely to have PAC needs. Results of CGA showed that the vast majority of them had rehabilitation needs (97.7%), 90.7% of them had nutritional needs, 74.4% of them had polypharmacy, 53.5% had cognitive impairment, 41.9% had uncontrolled pain, 39.5% had the sleep problems, 32.6% had the urinary incontinence, and 14.0% had depressive symptoms
Conclusions.– One quarter of patients in a tertiary medical center had PAC service needs before their discharge from hospital. PAC needs among patients admitted to the tertiary medical centre is usually multiple and complex, and CGA is of great benefit for effective screening.

PC-537

Home-based post-acute care for older patients with hip fracture in Taiwan: A prospective cohort study

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Objective.– To evaluate the effectiveness of home-based post-acute care among older patients with hip fracture
Design.– A prospective cohort study.
Setting.– A tertiary medical center in Taipei.
Participants.– 279 community-dwelling hip fracture patients.
Interventions.– Comprehensive geriatric assessment (CGA)-based multidisciplinary intervention.
Main outcome measures.– Mortality, functional recovery (activities of daily living and instrumental activities of daily living).
Results.– From January 2008 to December 2010, 279 hip fracture patients admitted to Taipei Veterans General Hospital for surgery were invited for study. Patients living within 30-minute car drive and consented to participate in the study were enrolled as treatment group. Those who lived outside the geographic region were referred to their community-based health care resources for conventional treatment as control group. Overall, 94 patients (81.0 $\pm$ 6.4 years, 57.4% males) were in case group and 185 patients (81.3 $\pm$ 7.0 years, 49.2% males) were in control group. Comparisons between their baseline clinical characteristics were similar in age, sex, fracture type, and pre-fracture functional status, but case group showed a significantly better functional recovery, regained pre-fracture functional status, and lower mortality rate 6 months after hospital discharge. None of patients who successfully regained their pre-fracture functional status died during study period. Independent predictive factors for functional recovery include CGA-based multidisciplinary care, and better pre-fracture functional status.
Conclusions.– CGA-based multidisciplinary care for fracture patients in the communities is of great importance to regain pre-fracture functional status, which is a significant protective factor for 6-month mortality. CGA-based multidisciplinary post-acute care should be bundled in the hip fracture treatment, which has not been done in Taiwan.

PC-538

Trend of pneumonia among residents of long-term care facilities in Taiwan: A Prospective cohort study

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Objective.– To evaluate the incidence and pattern of lower respiratory tract infections among residents of long-term care facilities (LTCFs).
Design.– A prospective cohort study.
Setting.– Seven private LTCFs in Taiwan.
Participants.– 233 residents.
Interventions.– None.
Main outcome measures.– Symptomatic lower respiratory tract infections.
Results.– From January 2006 to July 2008, 233 residents (76.9 ± 10.6 years, 54.9% males) from seven private LTCFs participated in the study. The common underlying diagnoses of the participants included hypertension (120/233, 51.5%), cerebrovascular disease (113/233, 48.5%), dementia (71/233, 30.5%), and DM (65/233, 27.9%). Overall, 77.3% (180/233) of the participants were completely bedridden. Meanwhile, 48.9% (114/233) of the patients were on long-term tube feeding, and 23.2% (54/233) had long-term indwelling urinary catheters. All residents received annual influenza vaccination. During the study period, 173 episodes of LTCF-acquired pneumonia were identified, equaling 1.02 episodes per 1000 bed-days. Subjects with pneumonia were more significantly poorer in Barthel Index, higher Charlson comorbidity index and lower serum levels of albumin. Incidence of pneumonia in different LTCF varies and a clustering phenomenon is likely.
Conclusions.– Pneumonia is not uncommon in among LTCF residents and the incidence varies extensively and the clustering phenomenon implies the possibility of inadequate infectious control, which deserves further prospective study for clarification.

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Factors associated with cognitive decline among institutionalized chinese male in Taiwan: A prospective cohort study

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Objective.– To evaluate associative factors of cognitive decline among institutionalized Chinese elderly men in Taiwan in 2 years.
Design.– A prospective cohort study.
Setting.– A public LTCF in southern Taiwan.
Participants.– 110 residents.
Interventions.– None.
Main outcome measures.– Decline of scores of mini-mental state examination (MMSE).
Results.– From January 2008 to December 2010, 110 residents living in a public LTCF southern Taiwan, consented to participate in the study, were enrolled. Data of Chinese version of Minimum Data Set-Nursing Home (MDS-NH 2.1), MMSE and Geriatric Depression Scale-Short Form (GDS-15) were used retrieved for analysis. Overall, 74 residents (83.9 ± 5.0 years) were categorized into the group of impaired cognition (MMSE < 24), and 35 residents (80.5 ± 5.0 years) were in normal group. Comparisons of baseline data between the two groups showed that older age, lower education level, impaired communication ability, poor social engagement, presence of chronic pain, poor activities of daily living, and presence of depressive symptoms were associated with impaired cognition. Follow-up scores of MMSE 2 years later were obtained and subjects were divided into the group of MMSE decline and MMSE non-decline. Associative factors of MMSE decline were nutritional status and use of antipsychotic agents.
Conclusions.–Predictive factors for cognitive decline in this setting were poorer nutritional intake and use of antipsychotic agents. Further study is needed to evaluate the effectiveness of these factors in predicting cognitive decline in this setting.

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Associative factors of mobility problems among older patients admitted to the geriatric evaluation and management unit

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Introduction.– Sarcopenia is common in the elderly and may result in disability and death. It has been suggested that timed up-and-go test (TUGT) is a useful instrument to identify sarcopenia in clinical settings. The purpose of this study was to evaluate associative factors of mobility problems among older patients admitted to the Geriatric Evaluation and Management Unit (GEMU).
Method.– From 2009 January to 2010 November, data of comprehensive geriatric assessment (CGA) of all patients admitted to the GEMU were collected for analysis, including Barthel index, (range 0–100; ≤ 80 suggests dependent in basic activities of daily living), Chinese version of Mini-Mental State Examination (MMSE) (range 0–30; scores less ≤ 24 suggests cognitive impairment) and TUGT (time ≥ 20 seconds suggests mobility problems).
Results.– In total, data of 176 patients (mean age = 81.7 ± 7.1 years, 71.0% men) were retrieved, and 147 (83.5%) of them had mobility problems. CGA showed that the problems of elderly admitted to GEMU were complex and multidisciplinary, 50.9% of them had urinary incontinence, 60.6% of them had history of falls, 63.6% were dependent in basic activities of daily living, 72.7% had cognitive decline, 60.6% had depressive symptoms, 40.6% had pain, and all of them had the risk of malnutrition. Univariate analysis showed that older age (82.1 ± 6.5 vs. 79.3 ± 9.3, $P = 0.048$), male gender (74.1% vs. 55.2%, $P = 0.040$), cognitive impairment (76.8% vs. 50.0%, $P = 0.013$) and dependent in basic activities of daily living (72.8% vs. 17.2%, $P < 0.001$) were significantly associated with impaired mobility.
Conclusions.– Over 80% of patients admitted to GEMU are impaired in mobility which implies a high prevalence of sarcopenia among them. Moreover, mobility problems are associated with older age, male gender, cognitive impairment and dependence in basic activities of daily living. Further study is needed to evaluate the prognostic impact of sarcopenia on these co-morbid medical conditions and complex care needs.