Trajectories of long-term exposure to anticholinergic and sedative drugs

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Oral presentations

Area: Comprehensive geriatric assessment

O-001

Multidimensional Prognostic Index (MPI) predicts post-discharge health-care outcomes in hospitalized older patients: an international, multicentre, one-year follow-up study. The MPI_AGE European Project

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Background: The MPI_AGE is a European project aimed to identify the most cost-effective health interventions according to the individual prognostic mortality-risk profile by using Comprehensive Geriatric Assessment (CGA) to calculate Multidimensional Prognostic Index (MPI).
Aim: To evaluate the usefulness of MPI in predicting post-discharge outcomes, i.e. one-year mortality and access to Home-Care Services and/or Nursing Homes.
Methods: Older patients consecutively admitted to nine Geriatric Units across Europe and Australia underwent CGA-based MPI assessment, including functional (ADL,IADL), cognitive (SPMSQ), nutrition (MNA-SF), risk of pressure sores (Exton-Smith Scale), Comorbidity (CIRS), drugs and cohabitation. Patients were divided in MPI-1-low-risk, MPI-2-moderate-risk and MPI-3-high-risk of mortality. Time-to-event (Kaplan-Meier and Cox regression) and logistic analyses were performed adjusting data for age, gender, diagnosis and hospital center. Area under receiving-operating-characteristic (ROC) curve was also calculated.
Results: 1,069 hospitalized patients were recruited (mean age 84.1±7.4 years, females = 60.8%) and classified according to the MPI at admission as MPI-1 = 167 patients (15.6%), MPI-2 = 482 patients (45.0%) and MPI-3 = 413 patients (38.6%). MPI significantly predicted one-year all-cause mortality (MPI-1 = Hazard Ratio 1.0 reference; MPI-2 = HR 2.79, 95% CI: 1.56–4.97, MPI-3 = HR 6.49, 95% CI: 3.69–11.4, p-for-trend <0.0001) with good accuracy (ROC curve = 0.75, $p<0.001$). Moreover, MPI grade was significantly associated with access to Home-Care Services (MPI-1 = Odds Ratio 1.0 reference; MPI-2 = OR 2.47, 95% CI: 1.5–4.0, MPI-3 = OR 1.82, 95% CI: 1.1–3.0, p=0.002) and to Nursing Home (MPI-1 = OR 1.0 reference; MPI-2 = OR 2.2, 95% CI: 1.3–3.8, MPI-3 = OR 1.7, 95% CI: 0.9–2.9, p=0.002) during the one-year follow-up period.
Conclusion: MPI predicts long-term mortality with high-grade of accuracy. Moreover, MPI stratification may identify older patients who need access in Home-Care Services and Nursing Homes after hospital discharge.

O-002

Self-rated health as a predictor of mid-term and long-term mortality in older Afro-Caribbeans hospitalised via the emergency department

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Aim: To determine whether self-rated health (SRH) is an independent prognostic factor for mid- and long-term mortality in older Afro-Caribbean patients hospitalised for an acute condition.
Methods: This study was a prospective cohort that recruited patients from the University Hospitals of Martinique Acute Care for Elders (ACE) unit (French West Indies) from January to June 2012. Patients aged 75 or older and hospitalized for an acute condition were eligible. The primary outcome was time to death within the 36-week follow-up. SRH was the explanatory variable of interest. Demographic and clinical characteristics were recorded. Cox's Proportional Hazards model was used to estimate the relationship between SRH and mortality.
Results: In total, 223 patients were included; average age 85.1±5.5 years, mainly women (61.4%). In total, 123 patients reported "very good to good" health, and 100 "medium to very poor" health. Crude mortality rates at six months, 1, 2 and 3 years were 30.5%, 34.8%, 48.4%, and 57.0%, respectively. SRH reached significant relationship for all mortality endpoints, after adjustment for baseline demographic and clinical characteristics. The adjusted hazard ratios for subjects who perceived their health as medium, poor or very poor was 1.6 to 2.7 times greater than that of subjects who reported good or very good health.
Conclusion: The association between self-rated health and mid- to long-term mortality in elderly subjects could have implications for clinical practice, particularly in helping practitioners to better estimate prognosis in the acute care setting.

O-003

Effect of geriatrician-performed comprehensive geriatric care on health care utilization in older persons referred to a community rehabilitation unit

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Introduction: Persons with geriatric conditions account for a large share of health care utilization. The aim of this study was to investigate the effect of a geriatrician-performed comprehensive geriatric care (CGC) on secondary and primary health care utilization in older persons referred to community rehabilitation.
Methods: The study was a randomized, controlled trial conducted in two Danish community rehabilitation units. Inclusion: persons aged 65 or older from home or hospital. Exclusion: persons receiving palliative care or assessed by a geriatrician during the past month. Intervention group (IG): CGC including medical history, physical examination, blood tests, medication adjustment, and related treatment performed by a geriatrician. Control group (CG): standard care with the GPs as back-up. Outcomes were measured within 90 days of follow-up. Primary outcome: inpatient contacts (hospital admissions or emergency department visits). Secondary outcomes: days spent in hospital, outpatient contacts, and GPs' contacts. Results: 368 persons were randomized (185 to IG/183 to CG). No significant differences in number of inpatient and outpatient contacts, days spent in hospital or number of out of hour GP-visits or phone calls were found between the groups. Incidence rate ratios for number of daytime GPs' consultations and visits (0.7, 95% CI: 0.6–0.9), daytime phone and email consultations (0.6, 95% CI: 0.5–0.7), or other GPs' services (0.5, 95% CI: 0.4–0.7) were all significantly lower in the IG ($p<0.001$).
Conclusions: Geriatrician-performed CGC reduces the primary health care utilization, but has no impact on secondary health care utilization in older persons referred to community rehabilitation unit during 90 days' follow-up.

O-004

Anemia, even mild, is associated with early death and altered geriatric domains, in elderly patients with cancer

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Introduction: Anemia is frequent in elderly patients with cancer, due to many physio-pathological mechanisms (inflammation, bleeding, iron and vitamin deficiency, bone marrow failure, default of hematopoiesis). The aim of this study was to determine the prevalence of anemia and its severity, in geriatric oncology population, and its association with mortality and geriatric domains alterations.
Methods: Prospective cohort ANCRAGE (ANalyse Cancer et Sujet AGE) including cancer patients aged ≥75 years, referred to geriatric oncology clinic between 2009 and 2015. Anemia severity was graded according to World Health Organization criteria: mild [women: 110–119g/L; men: 110–12.9g/L], moderate [80–109], severe [<80]. Geriatric assessment explored functional domain (assessed with Activities of Daily Livings); fall risk (Timed Get Up and Go Test, One-Leg Standing Balance Test, and five-repetition sit-to-stand test); nutritional status (Mini-Nutritional Assessment and serum albumin); mood (Geriatric Depression Scale) and cognitive impairment (Mini-Mental State Examination, MMSE). Early mortality was considered at three, six and 12 months.
Results: Of 884 patients with available data, 392 had anemia (44%): mild in 237 patients (60%), moderate in 151 (39%) and severe in four. Anemia was associated with mortality ($p<0.0001$) and alteration of all explored geriatric domains, except MMSE. Mild anemia was associated with functional alteration (p=0.01), risk of falls (p=0.03), malnutrition ($p<0.0001$) and early death ($p<0.0004$).
Conclusions: Hemoglobin appeared to be an interesting biomarker, as its value was associated with mortality and altered geriatric domains in elderly cancer patients. This association remained with mild anemia, with consequences frequently underestimated by practitioners.

O-005

Oropharyngeal dysphagia and fragility: Can it be related?

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Objective: Oropharyngeal dysphagia (OD) and fragility are geriatric syndromes those are effecting the prognosis. Literature has been suggested OD may be present in fragile elderly without neurodegenerative diseases. We aimed to investigate the association of OD with fragility in the community dwelling elderly.
Methods: Patients admitted prospectively. Participants' demographic datas were recorded. OD screening was done by scanning the EAT-10 questionnaire which has two thresholds (≥3 and ≥15). FRAIL Scale was applied to determine the fragility. We performed the measurements of BMI, hand grip strength, time and go test (TUG), usual walking speed, activities of daily living (ADL), instrumental ADL, MNA-SF.
Results: 1138 patients ≥60 years old were enrolled. The mean age was 74.1±7.3. EAT 10 score correlated with age, number of illnesses, number of medications, fragility, BMI, hand grip strength, TUG, usual walking speed, ADL, IADL and MNA SF according to the two thresholds of EAT-10 groups. There were higher incidence of female gender, number of neurodegenerative diseases in the two thresholds of EAT-10 groups. In the linear regression analysis, EAT 10 score ≥3 (n=65, 7.6%, $p<0.012$) and EAT 10 score ≥15 (n=33, 3.8%, $p<0.001$) were found to be correlated with fragility irrespectively of all causes.
Conclusion: OD is a common public health problem and can be difficult to recognize. We have shown that OD increases with fragility. To our knowledge, this is the largest serie in the literature providing data on independent association of OD with frailty.

O-006

Malnutrition and comorbidities predict early mortality in elderly patients with cancer

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Introduction: Few data address the prognoses of elderly patients with cancer. Assessment of prognostic factors might allow specific treatment and personalized medical care. We sought to identify factors predictive of early mortality (<three months) in this patient population.
Methods: Prospective cohort included patients aged 75 years and older with solid tumors or hematologic malignancies followed in

oncology geriatric consultations. A comprehensive geriatric assessment including sociodemographic data, social status, autonomy, cognitive status (Mini-Mental Status Evaluation, MMSE), nutrition (Mini-Nutritional Assessment, MNA), depression scale, risk of falls, and comorbidities (Cumulative Illness Rating Scale for Geriatrics [CIRS-G] score) was performed. Multivariate models were created with logistic regression at three months, Cox models at six and 12 months. Sensitivity analyses were performed using multiple inputation and the maximum bias hypothesis.

Results: A total of 824 patients (mean age, 81.8 years; 48% men) were included; 28% had metastatic cancer. The mortality rates were 13%, 22%, and 37% at three, six, and 12 months, respectively. At three months, a MNA score <17 (odds ratio [OR], 8.16, 95% confidence interval [CI], 3.47–19.20), CIRS-G score >8 (OR, 2.66, 95% CI, 1.32–5.33), metastasis status (OR, 2.20, 95% CI, 1.27–3.81) were associated with mortality and a higher serum albumin level appeared protective (OR, 0.90; 95% CI, 0.85–0.94). Nutritional status was associated with the prognoses throughout follow-up. Cognitive impairment (MMSE) <24/30 was specifically associated with mortality at 12 months ($p<0.01$).

Conclusions: Personalized geriatric assessment can improve short-term treatment strategies and management of elderly patients with cancer.

O-007
Older People Short Stay Unit (OPSSU) team working across emergency areas reduces length of stay (LOS) in the over 75s

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Objectives: It is recognised that the older person, once admitted to hospital, frequently have a longer length of stay and occupy more bed days than other patients, so we focused on reducing the length of stay (LOS) for the over 75s.

Methods: Introduction of Older People Assessment and Liaison Service (OPAL) in October 2013 based in MAU improved the quality of care provided in hospital for over 75s, with limited success in reducing LOS.We set out to reduce LOS for over 75s using PDSA cycles which involved amalgamating the existing OPAL team with the acute therapy team; senior therapy presence in emergency areas; created OPSSU (Dec 2015) with 13 beds expanding to 29 beds, patient information leaflets emphasizing the ethos of the importance of getting patients home and developed a culture in the unit "Time to Move" with posters on the ward.

Results: Before the full implementation in Dec 2015, there were 10,040 over 75 admissions with LOS 8.85 days (Dec 2014–Nov 2015) and after full implementation, there were 10,292 over 75 admissions with LOS 7.66 days (Dec 2015–Nov 2016) – 13.4% reduction in LOS saving 10,017 bed days. Using under 75 as control, the LOS reduced from 3.79 (Dec 2014–Nov 2015) to 3.54 days (Dec 2015–Nov 2016) – only 6.6% reduction in LOS.98.6% (74 patients) mentioned that they were extremely likely/likely to recommend the service.

Conclusions: OPSSU team working across all emergency areas reduces the LOS for the over 75s with significant cost savings.

O-008
Effect of an assessment in a Balance and Fall Prevention Center on falls rate, and falls and injurious falls incidence in older fallers: a before/after study

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Falls represent a major cause of burden and death in older adults. Patients visiting the Montpellier Balance and Fall Prevention Center (BFPC) (EIP on AHA reference site) benefit from a plan for falls and fracture prevention based on a 3-hour multidimensional assessment by a geriatrician, a physiotherapist, an occupational therapist, and a podiatrist. 134 consecutive patients (mean age, 82 years; 69% women) referred by their GP to the BFPC between Sept. 2014 and Sept. 2015 for balance disturbances and with at least one fall in the previous 6 months were followed for 6 months after assessment. Falls number per patient, 3 and 6 months after vs 3 and 6 months before assessment, was significantly reduced [-2.9 ± -10.3, $p<0.0001$; -5.2 ± -20.6; $p<0.0001$, respectively]. A significant decrease was found for falls rate [25% vs 88% ($p<0.0001$), and 32% vs 100% ($p<0.0001$), respectively]. Severe and minor injuries were lower 6 months after vs 6 months before assessment [6% vs 31%, $p<0.0001$; 8% vs 14%, $p<0.05$, respectively]. The same trend was observed for major injuries in the subgroup of patients with at least a fall during the follow-up (17% vs 37%, p=0.1). Fear of falling was significantly reduced after 6 months (p=0.001). Satisfaction of patients or caregivers was high at M6 (90%). Recommendations made to patients were well followed (80%). Walking ability was preserved at M6. Present results show that referral by their GP of older persons who fall to a fall clinic reduces falls incidence, falls rate, and injurious falls.

O-009
Geriatric factors associated with one year mortality after cardiac surgery

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Objective: Surgical aortic valve replacement has been shown to improve survival and quality of life in patients with severe aortic stenosis. However, cardiologic variables are known to be associated with an increased mortality. As specific geriatric factors are predominant in this older population, the aim of this study was to determine geriatric factors associated with one year mortality after a surgical aortic valve replacement for older patients with severe symptomatic aortic stenosis.

Methods: Between January 2012 and September 2014, all patients ≥75 years referred for a surgical aortic valve replacement after a complete pre-operative evaluation in a university-affiliated center were retrospectively included in this observational study. Association between one year mortality surgical aortic valve replacement and baseline characteristics including cardiac and geriatric factors was analysed by Cox models.

Results: Mean age of the 197 patients studied was 81.3 years and 48.2% were men. At one year of the intervention, 19 patients (9.6%) were dead. On multivariate analysis, previous cardiac surgery (Hazard ratio [HR] =10.47, p=0.03), undergoing concomitant cardiac surgery (HR=6.22, p=0.03), pulmonary hypertension (HR=3.73, 0.04) were still associated with one year mortality. Moreover, cognitive impairment defined by mini-mental state examination <24 was also associated with one year mortality (HR=4.67, p=0.04).

Conclusion: The present study shows that among geriatric factors, cognitive impairment was the only predictor of one year mortality after a surgical aortic valve replacement in patients aged 75 years old and older, independently of cardiac factors and other geriatric factors. This study highlights the importance of preoperative cognitive assessment.

O-010
The combination of cognitive function test score and Japanese Fall Risk Index effectively identifies the fall-prone older inpatients

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Introduction: Falls are critical turning points for older people because of postfall morbidity and mortality. As a screening tool, the Japanese fall prevention guideline proposed Fall Risk Index (FRI) consisting of 21 simple yes/no questions regarding physical and environmental factors. Since cognitive deficit is also a risk, to identify the fall-prone population more accurately, we combined Mini Mental State Examination (MMSE) score with FRI.
Methods: We utilized the geriatric ward database of 253 inpatients in the University of Tokyo Hospital, discharged from April 2016 to March 2017, mainly hospitalized for cognitive impairment or acute illness such as pneumonia. The database includes patients' characteristics, a history of falls in the past year, FRI and MMSE.Logistic regressions and receiver operating characteristic (ROC) curves were analyzed to assess MMSE and FRI as screening tools for falls.
Results: Forty-six point one percent (88/191) were identified as cognitively impaired by low MMSE scores ($\leq$23/30 points). The FRI ranged from 0 to 20 (mean 11±4) in 135 patients.Adjusted for age, sex, skeletal muscle mass index (SMI) and cognitive function, 1 point-increase of FRI demonstrated fall odds of 1.16 (95% CI: 1.02–1.31).Adjusted for age, sex, SMI and FRI, cognitively impaired patients showed fall odds of 2.78 (95% CI: 1.07–7.22). The area under the ROC curve of FRI in the cognitively impaired population was 0.72, the largest area of all variables, increased from 0.66 for the whole population.
Conclusions: The combination of low cognitive function and high fall risk index improved the identification of the fall-prone inpatients.

O-011
Prognostic impact of frailty domain trajectories on 5-year mortality in very old adults: Results from the PARTAGE cohort study

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Introduction: The prognostic value of longitudinal monitoring of frailty remains unknown in very-old adults. The objective was to identify trajectories of nutritional, cognitive functions and autonomy over time in very-old adults and to assess their association with long-term all-cause mortality.
Methods: The PARTAGE cohort study was used. Individuals aged $\geq$80 years, institutionalized, and who signed informed consent, were included in 2007 and followed-up for 5 years. Socio demographics and comorbidities were collected at baseline. Body mass index (BMI), Mini mental status examination (MMSE), and Index of activities of daily living (ADL) were assessed at baseline, 1, 2, and 5 years. Vital status was collected during the follow-up.
Results: In the 710 very-old adults recruited, mean±SD age was 88.0±0.8 years, and 78.9% were female. Seven composite trajectories were identified according to the initial level and the evolution of the nutritional, cognitive and autonomy status. As compared to the reference group (T7-stable overweight, preserved cognitive functions and autonomy), two trajectories presented a higher relative risk of dying: T1 - stable overweight, moderately impaired then declining cognitive function and autonomy, (adjusted HR=1.79, 95% CI [1.26–2.55], p=0.001) and T6 - stable normal BMI, slight cognitive decline, and moderate then amplifying loss of autonomy (adjusted HR=1.67, 95% CI [1.15–2.44], p=0.008).
Conclusions: Weight and height scales, MMSE and ADL questionnaires reflecting nutritional, cognitive frailty and loss of autonomy are reliable and simple instruments requiring insignificant time to complete. Their repeated monitoring in very-old adults provides trajectories holding prognostic information potentially warning clinicians to adjust care efforts.

O-012
Goal attainment scaling in a person-centered care setting – are older adults able to attain their goals?

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Introduction: Goal planning and goal attainment scaling is a method to facilitate the delivery of person-centered care. Little is known about the process of care delivery in person-centered care projects and the additional value of goal planning within these projects.
Methods: Community-dwelling older adults (75 years and older) received a person-centered integrated care intervention program with collaborative goal setting, the Embrace intervention. Goals were set with a case manager within a care plan. The goal of the care plan was to encourage the older adult to carry out actions autonomously, with support of the general practitioner and case manager. Older adults rated their health-problems with a severity score at start and a desirable severity score after one year of case management (goal score). After the intervention year, the goal was evaluated and an end score was measured. Characteristics of goal plans were described. The proportion of attained goals and impact of patient and goal characteristics were calculated.
Results: Among 233 older adults, 836 goal plans were formulated. Of these, 74% was attained. Goals about physical health and personal care were more likely to be attained, in contrast to goals about mobility and pain.
Conclusion: Older adults are capable of determining goals in consequence of their needs and preferences and to quantify these. With goal planning person-centered care can be facilitated and quantified.

O-013

DIALOG task force for definition of a geriatric minimum data set for clinical oncology research

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Introduction: A minimum set of geriatric data at baseline would allow comparing results across reports. The aim is to define a minimum set of geriatric parameters called the Geriatric Mini Data Set (GMDS) that allows to describe the elderly cancer population in clinical trials.
Methods: The GMDS has been defined by an adapted DELPHI-type consensus method with four groups: a steering group, a scoring group of 14 French geriatrician experts and two validation groups of national and international panels of experts. The consensus process proceeded in 6 steps: 1) initial literature search of available measuring tools; 2) individual scoring (by e-mail) of the relevance of the selected tools using a graduated (1 to 9) visual analogue scale in 3 rounds; 3) feedback between rounds of the results for each measuring tool; 5) appropriation by national panel of experts.
Results: After 3-round, tools chosen for each domain were: 1) social assessment: using two questions “Are you living alone” and “Would you have a person or caregiver able to help you”; 2) functional autonomy: Activities of Daily Living (ADL) and short-IADL; 3) mobility: timed get up and go test; 4) nutrition: unintentional weight loss in last 6 months and Body Mass Index; 5) cognitive assessment: Mini-Cog; 6) thymic status: mini-Geriatric Depression Scale; 7) comorbidity: updated Charlson.
Conclusions: DIALOG intergroup reached an agreement for a short geriatric MDS to be incorporated in future clinical trials for the elderly. This initiative still needs to be evaluated for appropriation by an international panel of experts.

O-014

Functional decline in older nursing home residents in Europe: The SHELTER study

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Introduction: Disability is an important outcome for older nursing home (NH) residents, closely linked to their quality of life and to higher health care costs. The aim of our study was to identify independent predictors of functional decline in older NH residents, taking into account both resident and facility characteristics.
Methods: We evaluated 1760 older (>65 years) NH residents participating in the SHELTER* study (57 NH among 8 countries). A decline in functional status was defined as an increase of at least one point in the MDS Long Form ADL scale during a one year follow-up. Country effect was taken into account.
Results: During the study period 891 (50,6%) NH residents experienced an ADL decline. Residents experiencing ADL decline were older (85.2 vs 84.8 ys; p=0.053), had a lower level of disability (median ADL score 9 vs 12; p=0.003), were more frequently affected by severe cognitive decline (23.2% vs 18.8%; p<0.001) and by urinary incontinence (70.4 vs 63.9, p=0.004) and used more antipsychotics (31.8 vs 26.1%; p=0.009). In the mixed effect logistic regression model factors independently associated with a higher risk of functional decline were cognitive decline and urinary incontinence, whereas the presence of a geriatrician and the nurse availability during night were protective.
Conclusions: Facility characteristics could be a target of intervention to prevent functional decline in NH: the presence of a geriatrician, associated with an adequate amount of nursing care, seem to be important to achieve this goal.
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O-015

The GCCM Home Assessment Program: survival analysis of time to institutionalization of an elderly population followed since 2006 in Monaco

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Introduction: Since 2006, the Gerontologic Coordination Center of Monaco (GCCM) takes care of disable elderly living at home. The GCCM team performs a Comprehensive Geriatric Assessment (CGA) at home, annually or in case of disability progression, as long as elderly live safety at home. Aims of this retrospective study are to estimate the time to institutionalization and to investigate predictive factors.
Methods: In April 2017, time to institutionalization was studied for 1872 patients followed by the GCCM since 2006. 574 patients had been institutionalized and 699 others died without previous institutionalization. A Kaplan-Meier analysis was performed to estimate the time to institutionalization given covariates, and a Cox model was fitted to determine the predictors of time to institutionalization.
Results: The median, mean and maximum time from the first CGA to institutionalization were 1.9, 2.4 and 10.2 years, respectively. The mean age at institutionalization was 86.9 (range: 56–104). Institutionalization-free survival at 2, 5 and 8 years were 80% (95% CI: 78 to 82%), 56% (95% CI: 53 to 59%) and 43% (95% CI: 39 to 48%), respectively. The following significant risks factors for time to institutionalization were obtained by a multivariate Cox model: age (HR: 1.03), MMS-E 20–24 (HR: 0.45), the French disability score (GIR: Groupe Iso-Ressources) 5–6 (HR: 0.62).
Conclusions: Our study gives relevant epidemiological data and confirms some well-known predictors of institutionalization such as age, disability, presence of cognitive impairment.Its originality lies on the analysis of 1872 patients followed at home, until their death or institutionalization. We emphasize the pertinence of our original program initiated 11 years ago, especially the repeated practice of CGA by a medical doctor and nurses, not in an institutional context but at home.

O-016

Assessment of clinical practices for crushing medication in geriatric units

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Objectives: To assess the modification of the form of medication and evaluate staff observance of good clinical practices. Setting: Elderly in-patients with difficulties swallowing medications within

17 geriatrics units in the 3 Teaching Hospitals of Paris-Sud. Measurements: One-day assessment of target-patient prescriptions and direct observation of nurses' rounds.
Results: 155/526 in-patients (29.5%) were unable to swallow tablets or capsules: 98 (40.3%) in long-term care, 46 patients (23.8%) in the rehabilitation unit and 11 (12.2%) in acute care (p=0.005). In thirty-nine (27.3%) of the 143 prescriptions studied, all tablets were safe to crush and all capsules were safe to open. In 104 cases, at least one medication could not be safely modified, including 26 cases (18.2%) in which none of the prescribed drugs were safe to crush or open. In 48.2% of the 110 medications that were crushed, crushing was forbidden, and presented a potential threat in 12.7% of cases or a reduced efficacy in 8.2% of cases. Crushing methods were rarely appropriate: specific protective equipment not used (81.8%), crushing equipment shared between patients without cleaning (95.1%), medications spilled or lost (69.9%). The method of administration was appropriate (water, jellified water) in 25% of the cases, questionable (soup, coffee, juice, cream) in 55% of the cases and unacceptable (laxative) in 21% of the cases.
Conclusion: Management of drug prescriptions in patients with swallowing difficulties is not optimal, and may even have iatrogenic effects. Doctors, pharmacists and nurses need to reevaluate their practices.

Area: Cognition and dementia

O-017
Impact of opioid initiation on antipsychotic and benzodiazepine and related drug use among persons with Alzheimer's disease – An interrupted time series analysis

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Introduction: Analgesia use may reduce behavioral and psychological symptoms of dementia and symptomatic drug use of persons with Alzheimer's disease (AD). We aimed to analyze the impact of opioid initiation on the prevalence of antipsychotic and benzodiazepine and related drug (BZDR) use among community-dwelling persons with AD.
Methods: Utilizing register-based Medication use and Alzheimer's disease (MEDALZ) cohort, we collected all community-dwelling persons diagnosed with AD during 2010–2011 in Finland initiating opioid use and a matched cohort of non-initiators. Prevalences of antipsychotic and BZDR use in 30-day time periods six months pre-opioid initiation were compared with time periods six months after with interrupted time series analyses.
Results: We included 3,327 opioid initiators and 3,325 non-initiators with AD. Six months before opioid initiation, 13.3% and 27.1% of opioid initiators used antipsychotics and BZDRs, respectively; 18.3% and 28.9% at opioid initiation and 17.3% and 26.9% six months later. Accounting for the pre-opioid rate, prevalence of antipsychotic use decreased 0.3 percentage points (pps, 95% confidence interval 0.1–0.5) and BZDR use 0.3 pps (0.3–0.4) per month after opioid initiation. Compared to non-initiators, opioid initiation immediately resulted in an increase of 1.9 pps (1.4–2.3) for antipsychotics and of 1.6 pps (1.3–1.9) for BZDR use. Post-opioid initiation, there was a decrease of 0.5 pps per month (0.4–0.7) for antipsychotics and of 0.4pps (0.3–0.5) for BZDR use until the end of the follow-up.
Conclusions: Opioid use initiation slightly decreased antipsychotic and BZDR use compared to pre-opioid initiation and to non-initiators.

O-018
Associated risk factors of restraint use in older adults with home care: A cross-sectional study

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Introduction: Although there is evidence that restraint use in home care is increasing, research into the factors associated with restraint use in this setting is scarce. The aim of the study was to gain insight into the factors associated with restraint use on older adults receiving home care.
Methods: A cross-sectional survey was completed by the patients' primary care nurses (June 2013). A binary logistic regression model with generalised estimating equations was used to evaluate factors associated with use of restraints. Eight thousand subjects were randomly selected from a total of 45,700 older adults.
Results: The mean age of the sample (n=6397) was 80.6 years, 66.8% were women and 46.4% lived alone. 24.7% of the patients were subject to restraint. Multivariate logistic regression indicated that restraint use was associated with supervision [OR=2.433, 95% CI: 1.948 3.038]; dependency in ADL-activities (i.e. eating [OR=2.181, 95% CI: 1.212–3.925], difficulties in transfer [OR=2.131, 95% CI: 1.191 3.812] and continence [OR=1.436, 95% CI: 0.925–2.231]; perceived risk of falling in the nurses' clinical judgement [OR=1.994, 95% CI: 1.710–2.324], daily behavioural problems [OR=1.935, 95% CI: 1.316 2.846] and less than daily behavioural problems [OR=1.446, 95% CI: 1.048 1.995]; decreased well-being of the informal caregiver [OR=1.472, 95% CI: 1.126 1.925], the informal caregiver's dissatisfaction with family support [OR=1.339, 95% CI: 1.003 1.788]; patient's cognitive impairment [OR=1.398, 95% CI: 1.290 1.515]; polypharmacy [OR=1.415, 95% CI: 1.219 1.641].
Conclusions: The study results provide insight into new and context specific factors associated with use of restraints in home care (e.g. supervision, informal caregiver's decreased well-being and dissatisfaction with family support). These insights could support the development of interventions to reduce use of restraints in home care.

O-019
The risk of Alzheimer's disease associated with benzodiazepines and related drugs: A nationwide nested case-control study

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Objective: To assess the association between benzodiazepine and related drug (BZDR) use and risk of Alzheimer's disease (AD) with cumulative consumption and duration of use based models with 5-year lag time between exposure and outcome.
Methods: A nationwide nested case-control study of all Finnish community dwelling persons who had clinically verified AD diagnosis in 2005–2011 (N=70,719) and their age, sex and region of residence matched controls (N=282,862). AD diagnosis was based on DSM-IV and NINCDS-ADRDA criteria. BZDR purchase data in Defined Daily Doses, were extracted from the Prescription register since 1995. BZDR use periods, i.e. when continuous use started and ended, were calculated using validated PRE2DUP-method. The association between BZDR use and AD was assessed using conditional logistic regression.
Results: Use of BZDRs were associated with somewhat increased risk of AD (adjusted OR 1.05, 95% CI 1.03–1.07). A dose-response relationship was observed with both cumulative consumption and duration when accounting for occupational social class and comorbidities. The association between BZDR use in general and AD was evident also after additional adjustment for other psychotropic use. However, adjustment for other psychotropics removed the cumulative dose-response relationship by attenuating the ORs in the highest dose category.
Conclusions: BZDR use in general was associated with somewhat increased risk of AD with no major differences were observed between different subcategories of BZDRs (i.e. benzodiazepines, Z drugs, short/medium acting or long acting BZDRs). Cumulative dose-response relationship was abolished after adjustment for other psychotropics, indicating that the association may partially be due to confounding by indication.

O-020
2-Hour interactive workshop for family caregivers followed by weekly instruction with postcard for 12 weeks reduced burden of caregivers and improved behavioral psychological symptoms of dementia (BPSD) of care receivers

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Background: Family caregivers for people with dementia are in distress and feel severe burden. Objective: The aim of this study is to evaluate the effectiveness of 2-hour interactive workshop of multimodal comprehensive care methodology for family caregivers who are taking care of people with dementia at home. behavioral psychological symptoms of dementia (BPSD) of their care receivers were measured as secondary outcome.
Methods: Family caregivers participated 2-hour interactive workshop of multimodal comprehensive care methodology: Humanitude. The participants performed this care methodology at home to their cognitive impaired care receivers. 12 postcards were sent to the participants weekly to teach the care techniques of the week. The burden of caregivers was measured by Zarit Burden Interview (ZBI) and BPSD of care receivers was scored by Behavioral Pathology in Alzheimer's Disease (BEHAVE-AD) rating scale. They were evaluated before the workshop (month 0), at month 1 and month 3 after the workshop.
Results: 148 family caregivers enrolled the study and 118 completed 3-month follow up. ZBI of family caregivers was significantly reduced from 13.1 at month 0, then 10.7 at month 1 ($p<0.001$) and 10.5 at month 3 ($p<0.001$). BPSD was also significantly reduced from 12.9 at month 0, then 10.7 at month 1 ($p<0.01$) and 11.2 at month 3 ($p<0.05$).
Conclusion: 2-hour interactive workshop of multimodal comprehensive care methodology: Humanitude followed by 12 weekly postcard instructions is effective to reduce the burden of family caregivers and to improve BPSD of care receivers.

O-021
Is proton pump inhibitor use associated with an increased risk of Alzheimer's disease?

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Introduction: Objective was to investigate whether PPI use is associated with an increased risk of clinically verified Alzheimer's disease (AD).
Methods: A Finnish nationwide nested case-control study MEDALZ includes all community-dwelling persons with newly diagnosed AD during 2005–2011 (N=70,719), and up to four age-, sex- and region of residence matched comparison persons for each case (N=282,862). Data were extracted from Finnish nationwide health care registers. Proton pump inhibitor (PPI) use was derived from purchases recorded in the Prescription register data since 1995 and modelled to drug use periods with PRE2DUP method. AD was the outcome measure.
Results: PPI use was not associated with risk of AD with 3 year lag window applied between exposure and outcome (adjusted OR 1.03, 95% CI 1.00–1.05). Similarly, longer duration of use was not associated with risk of AD (1–3 years of use, adjusted OR 1.01 [95% CI 0.97–1.06], ≥3 years of use adjusted OR 0.99 [95% CI 0.94–1.04]). Higher dose use was not associated with an increased risk (≥1.5 defined daily doses per day, adjusted OR 1.03 [95% CI 0.92–1.14]).
Conclusion: In conclusion, we found no clinically meaningful association between PPI use and risk of Alzheimer's disease. The results for longer duration of cumulative use or use with higher doses did not indicate dose-response relationship.

O-022
Association between potentially inappropriate medication and mild cognitive impairment in patients attending memory clinics, Memento cohort

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The use of potentially inappropriate medication (PIM) is common in older adults and may be associated with adverse health events such as falls. In a large nationwide cohort of persons with either isolated cognitive complaints (ICC) or mild cognitive impairment (MCI), the Memento cohort, we assessed the adjusted association between the PIM use and MCI at baseline. A total of 2323 outpatients were recruited with either ICC or MCI from 28 French research memory clinics. PIM were identified using the Beers 2015 criteria and the EU(7)-PIM list. A multivariate logistic regression analysis was conducted to assess the association between PIM use and MCI (vs. ICC).A total of 1780 patients aged 65 years and over were selected for the purpose of this analysis among whom 1500 had MCI. A total of 945 (53.1%) patients received at least one PIM. The most

common class of PIM were peptic ulcer drugs (70.2%), anxiolytics (30.7%), anti-thyroid synthesis (23.9%), antidepressant (20.1%) and sedative-hypnotics (19.8%). After adjusting for sociodemographic characteristics, MMSE score, number of drugs, NPI depression and anxiety scores, PIM use was more frequent in patients with MCI than ICC (Odds Ratio 1.44, 95% Confidence Interval 1.03 to 1.99). More than half of elderly included in the Memento cohort are exposed at baseline to PIM, most of them are observed among participants with MCI. Medication use needs to be improved in older adults. The Memento cohort will allow to assessing the impact of PIM on further evolution of cognitive profile of the participants.

O-023
The Short Physical Performance Battery (SPPB) relates to neuroimaging biomarkers of Alzheimer's disease in cognitively normal elderly subjects

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Introduction: Gait speed begins to slow a decade before the diagnosis of Mild Cognitive Impairment (MCI), suggesting that gait abnormalities could be markers for preclinical states of dementia. The SPPB tool evaluates locomotion by gait speed, balance and strength. Poor performances are associated with functional decline, hospitalization and mortality. We aim to examine the association between SPPB and neuroimaging biomarkers of Alzheimer's disease (AD) in cognitively normal elderly subjects.
Methods: Cross-sectional design of 318 cognitively normal elderly subjects participating to the INSIGHT PreAD study. A trained nurse assessed SPPB and participants underwent multimodal neuroimaging and automated methods measured hippocampal volumes in MRI, FDG-PET standardized uptake values (SUV) in AD signature regions and amyloid PET SUV ratio (SUVr). Linear regression methods were used for statistical analysis.
Results: Higher PET FDG SUV was associated to higher performances in SPPB total scores (Coef = 0.7, r=0.02, p=0.019), as well as with faster gait speed (Coef = 0.09, r=0.01, p=0.049) and lower time needed to realize 5-chair stands (Coef = −1.4, r=0.01, p=0.038). Similarly, we observed a trend for an association of SPPB scores with hippocampal volumes (Coef = 0.465, r=0.012, p=0.05). After adjustments for potential confounding variables, the association of FDG PET SUV values and SPPB total score (Coef = 0.73, r=0.047, p=0.0207) and gait speed (Coef = 0.12, r=0.0998, p=0.0141) remained statistically significant. There was no association between SPPB and amyloid SUVr.
Conclusion: SPPB total score, gait speed and 5 chair stands are associated with neurodegeneration in cognitively normal elderly people, demonstrating that gait disturbances, assessed with this test, may be a potential marker of preclinical AD.

O-024
Effect of a program for family caregivers with close relatives in institutions

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Introduction: In order to meet the specific needs of the family caregivers with close relatives in institutions, we created a program called "EHPAD Aidant" (Nursing home caregivers) focusing on their difficulties, identified beforehand during focus groups of families and professionals. These difficulties are based on the ignorance of the potential and limitations of a nursing home, and on their own limitations. The objective was to evaluate the impact of the "EHPAD Aidant" program on obstacles, management strategies, satisfaction levels and anxiety-depressive symptomatology among a group of caregivers.
Methods: Eighty caregivers aged 67 (±10) received multidisciplinary support ((psychologists, geriatric physicians, speech therapists, coordinating nurses, nursing home directors) in 2-hour weekly sessions during 6 weeks. Topics included institution management, dementia, psychic stakes of entering an institution, diet and end-of-life support. Pre-and post-intervention evaluations focused on anxiety, depression, caregiver task, situational management strategies, and satisfaction. Focus groups were filmed and analyzed.
Results: Results showed a great satisfaction of caregivers, a better understanding of the functioning of the nursing home and of the professionals' missions, an improved communication with the staff of the institution, an improvement of the relationship with the close in institution, a redefinition of the role and place of the caregiver within the institution, with close relatives in institutions and decreased feelings of guilt among caregivers related with feelings of failure and abandonment.
Conclusion: Providing caregivers with a pathway, changing their perception of the disease and the care relationship resulted in a redefinition of their caregiving role within the institution.

Area: Frailty and sarcopenia

O-025
Tracking changes in frailty throughout later life: Results from a 17-year longitudinal study in the Netherlands

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Introduction: Few studies have investigated changes in frailty throughout later life, and variability in change between subgroups. Our aim was to investigate changes in the degree of frailty with aging, and the extent to which changes are determined by socio-demographic characteristics.
Methods: Six waves of the Longitudinal Aging Study Amsterdam (LASA) across atime period of 17 years were used to study changes in frailty among a sample of 1660 Dutch older adults aged 65 and over at baseline. The degree of frailty was measured at each wave with a 32-item frailty index (FI), based on the deficit accumulation approach. Socio-demographic characteristics included age, sex, educational level and partner status. Generalized Estimating Equation (GEE) analyses were performed to study longitudinal frailty trajectories over a period of 17 years.
Results: The overall mean FI score at baseline was 0.15, and increased to 0.36 after 17 years of follow-up. The average doubling time in the number of deficits was 12.5 years, and this was similar in those aged 65–74 years compared to those aged 75+. Higher baseline FI scores were observed in people with a higher age, females, lower educated and people without a partner. The rate of increase in FI score was only associated with partner status.

Conclusions: The degree of frailty increased with aging, but the rate of deficit accumulation was relatively stable during later life.

O-026
Integrated geriatric and primary care management of frail older adults in the community

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Introduction: Frailty is a reversible state of vulnerability towards disability and other outcomes in older adults. We are implementing an integrated programme between geriatrics and primary care, based on screening, comprehensive geriatric assessment and tailored intervention. We assessed its impact on physical performance and frailty.
Methods: After screening in primary care (Gerontopôle FST), subjects are referred to geriatrician and physiotherapist, who perform comprehensive geriatric assessment and implement a tailored plan, shared with primary care and based on physical activity (PA, 10 group sessions, 1hour/week of functional, endurance, flexibility and aerobics exercises), plus nutritional education and optimization of medications. We assessed the impact on physical performance in a 3-months follow-up.
Results: In the first 6 months of the program, we included 81 older community-dwellers (mean age±SD=81.8±5.4 years, 72.3% female). Despite good functional capacity (Barthel = 95, IQR = 90–100, Lawton = 6, IQR = 3–7.5, 41% living alone), 36,1% were at least "vulnerable" according to the Clinical Frailty Scale, and had impaired physical function (SPPB±SD = 6.2±2.8, gait speed ± SD = 0.77±0.15 m/s, 36,1% with falls last year). Comorbidity was low (Charlson = 2, IQR = 1–4), but 85.5% had polypharmacy (mean ± SD = 8.2±3.7 drugs). Intervention: 92,7% participated in PA, 97,6% received health education and 60,2% treatment modifications. At 3 months (N=39), adherence to PA was high (57.4% $\geq$7.5 sessions), with improved physical function: mean ± SD SPPB = 8.6±2 (mean improvement = 1.6, 95% CI: 1.6–1.8, $p<0.001$), gait speed = 0.77±0.15 m/s (mean improvement = 0.09 m/s, 95% CI: 0.09–0.11, $p<0.001$).
Conclusions: According to our results, a multidisciplinary and comprehensive geriatric intervention in frail older community-dwellers improved physical function and almost reversed frailty at 3 months, according to established physical performance scales' cut-offs.

O-027
How clinical practitioners assess frailty in their daily practice: An international survey

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Introduction: Various operational definitions have been proposed to assess the frailty condition among older individuals. Understanding the strengths and limits of such definitions is important in order to better identify frail individuals in need of specialized care and is thus crucial for the standardization of clinical practice. Our objective was to assess how practitioners measure the geriatric syndrome of frailty in their daily routine.
Methods: An online survey was sent to through the European Union Geriatric Medicine Society (EUGMS) and the European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (ESCEO).
Results: A total of 380 clinicians from 44 countries answered to the survey. Most of them were medical doctors (93%), and their primary field of practice was geriatrics (83%). Fifty-one clinicians always assessed frailty in their daily practice, and 41.5% reported to "sometimes" measure it. The most widely used tool was the gait speed test, adopted by 43.8% of the clinicians, followed by the Clinical Frailty Scale (34.3%), the SPPB test (30.2%), the frailty phenotype (26.8%) and the Frailty Index (16.8%). The functional status, the Short Physical Performance Battery, the gait speed, and the handgrip strength were also assessed by 84.8%, 74.5%, 55.9% and 40.7% of the clinicians, respectively. The cognitive domain was assessed by 90.9% of the respondents, mainly by means of the Mini Mental State Examination (76.5%).
Conclusion: A huge variety of tools is used to assess frailty in clinical practice, highlighting the absence of standardisations and guidelines.

Area: Geriatric rehabilitation

O-028
Emergency department use in post-acute rehabilitation facilities

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Introduction: Discharge of elderly patients from hospitals to skilled nursing facilities (SNF) for post-acute care is a transition when patients are at risk for adverse outcomes. Emergency department (ED) visits in this period indicate unplanned healthcare utilization and are often considered a quality measure by Centers for Medicare & Medicaid Services [1]. We sought to describe the patterns of ED use within 30 days of discharge to a SNF.
Methods: This was a retrospective analysis of 30-day ED use among patients discharged from the hospital to ten area SNFs from January 1, 2009 to June 30, 2014. Demographics and 30- day ED visits obtained from the electronic health record and administrative data were analyzed to determine the frequency and distribution of ED use after discharge to a SNF.
Results: There were 8616 discharges from Mayo Clinic Rochester hospitals to ten area SNFs served by its Division of Employee and Community Health between January 2009 and June 2014. The average age was 79 years (±9.8 years) and 62% of the patients were female. 1671 (19.4%) needed ED visits within 30 days. Of these ED visits, 40.8% occurred within 7 days and 63.2% occurred within 14 days of discharge to the SNF.
Conclusion: A substantial proportion of patients discharged to

SNFs for post-acute care needed unplanned care in EDs within 30 days. Majority of these visits occurred within the initial two weeks of hospital discharge indicating a need for better transition management in this population.

References:

[1] https://www.cms.gov/newsroom/mediareleasedatabase/press-releases/2016-press-releases-items/2016–04–27.html

Area: Frailty and sarcopenia

O-029

Comparison of the performance of different screening methods for sarcopenia within the SarcoPhAge study

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Introduction: Our aim was to compare the performance of 5 screening strategies for identifying elders at risk of sarcopenia.

Methods: We gathered cross-sectional data of elders from the SarcoPhAge (Sarcopenia and Physical Impairment with Advancing Age) study. Following screening approaches were put into perspective: the 2-stage algorithm of the EWGSOP (2010), the SARC-F questionnaire by Malmstrom and Morley (2013), the screening grid by Goodman et al. (2013), the screening test by Ishii et al. (2014) and the prediction equation by Yu et al. (2015). Performance of the screening method was described using sensitivity, specificity, PPV, NPV and AUC, according to 4 definitions of sarcopenia: Cruz-Jentoft et al. (2010); Fielding et al. (2011); Morley et al. (2011) and Studenski et al. (2014). In the SarcoPhAge study, lean mass was measured with DEXA, muscle strength with a handheld dynamometer and physical performance with the SPPB test.

Results: 306 subjects (74.8±5.9 years, 59.5% women) had complete data for statistical analyses. The prevalence of sarcopenia varied from 5.88% (Morley et al.) to 16.7% (Cruz-Jentoft et al.) depending on the definition. The best sensitivity (up to 100%) and the best NPV (up to 99.1%) has been shown by the screening test of Ishii et al., regardless of the definition tested. The highest AUC (0.841 to 0.891) has also been demonstrated by the tool of Ishii et al. The most specific tool was the 2-stage algorithm of the EWGSOP (88.5% to 91.1%). All NPV were superior to 87.0%, whatever the screening tool used. However, all PPV were below 51.0%.

Conclusions: The screening test of Ishii et al. showed better properties in terms of distinguish those at risk of sarcopenia from those who were not at risk. All screening tools identify with a high degree of reliability individuals who do not suffer from sarcopenia.

Area: Geriatric rehabilitation

O-030

Factors associated with Activity of Daily Living (ADL) decrease in geriatric rehabilitation unit

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Introduction: The first aim of geriatric rehabilitation units is to restore functional independence to elderly patients in terms of Activities of Daily Living (ADL). We know that some patients will suffer ADL decrease in this unit, however factors associated with functional decline are debated.

Objective: To assess frequency of functional decline during rehabilitation unit stay and factors associated with ADL decrease.

Methods: Between July 2006 and December 2008, 252 consecutive patients aged ≥75 years admitted in geriatric rehabilitation unit in a university hospital in Créteil, France were included in this prospective cohort study. During follow up, Hospital Acquired Infection (HAI) and ADL at rehabilitation unit discharge were recorded. Multivariable logistic regression and mediation analyses were used to identify factors associated with ADL decrease.

Results: Among 165 patients with baseline and discharge ADL available, median age was 85 IQR [81–90] years, Cumulative Illness Rating Scale for Geriatrics (CIRS-G) 11 [9–13] baseline ADL 7 [4–10]). Thirty patients (18.2%) suffered ADL decrease and 24 (14.5%) experienced pulmonary HAI. Factors independently associated with ADL decrease were albumin<35g/l (p=0.02), CIRS G index (p=0.02) or CIRS G ≥2 for Respiratory (p=0.03) (CIRSG-R) and psychiatric diseases (p=0.02) (CIRSG-P). Pulmonary HAI could be a mediator in the association between CIRSG-R and ADL decrease (p for mediation test = 0.07).

Conclusion: Baseline elderly characteristics such as comorbidities are associated with ADL decrease in geriatric rehabilitation unit. Some mediators such as pulmonary HAI could take part in this association, thus, improving prevention of HAI could enhance the effects of a stay in geriatric rehabilitation unit.

Area: Comorbidity and multimorbidity

O-031

Activities of daily living at admission to acute geriatric wards as predictor of mortality: A Danish nationwide population-based cohort study

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Introduction: The Barthel Index (BI) is used to measure geriatric patients' activities of daily living. Our study examines whether routine BI assessment at the time of hospital admission predicts mortality.

Materials and methods: This nationwide population-based cohort study included all patients aged ≥65 years admitted to a Danish geriatric ward during 2005–2014. BI-100 was assessed at admission and data linked at the individual level to Danish national health registers. BI-score was reported numeric and categorized in four standard sub-categories. All individuals were followed-up until death or the end of study (December 31st 2015). Multivariate Cox regression was used to analyze associations adjusting for relevant confounders (age, admission year, civil status, BMI, Charlson Comorbidity Index, polypharmacy, hospital admissions).

Results: Totally 74,603 patients were included. Women (63%) were significantly older with higher BI than men ((median [IQR]) age 84 [79–89] vs. 81 [76–86] years, and BI score 55 [(30–77] vs. 52 [26–77], respectively). Median survival (years, 95% CI) according to BI sub-category was 4.9 (4.7–5.0) and 3.6 (3.4–3.7) in BI=80–100, 3.5 (3.4–3.6) and 2.3 (2.2–2.4) in BI=50–79, 2.7 (2.6–2.8) and 1.7 (1.6–1.8) in BI=25–49, and 1.3 (1.2–1.4) and 0.9 (0.8–0.9) in BI=0–24,

women and men, respectively. Adjusted hazard ratio for mortality (95% CI) for BI=0–24 was 2.42 (2.32–2.52) in women and 2.07 (1.97–2.18) in men (reference BI=80–100). The adjusted model with BI as a continuous variable revealed a significantly increased mortality risk by 1.1% in women and 0.9% in men for each single point scored below 100 on the BI.
Conclusion: BI at hospital admission is a strong and independent predictor of mortality in geriatric patients.

O-032
The impact of the community Transitional Care (TC) program on hospital utilisation, mortality and cost

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Introduction: Aging population is a growing challenge in Asia and Singapore. Older adults with multiple comorbidities and disability have high hospital utilisation, and are vulnerable to poor outcomes during care transition from hospital to home. Addressing post-hospitalisation needs of these complex and frail older adults in the community is vital in improving care. Objectives: To evaluate the impact of a 3-month post-hospitalisation nurse-led Transitional Care (TC) on hospital utilisation, mortality and cost among patients with complex medical, social and functional needs in northern Singapore.
Methods: We analysed a retrospective cohort of patients eligible for TC between April 2012 and March 2014 using hospital administrative data. Outcome measures were number of hospitalisations, emergency department visits, hospital length of stay, cost, rehospitalisation and mortality at 30, 90 and 180 days post index hospitalisation discharge. A quasi-experimental study with difference-in-difference analyses was done to compare outcomes between eligible patients who accepted TC (intervention) and those who rejected (control).
Results: Mean age was 81.5±10.5; and 64.9% were female. Participants had mean disability and disease severity index of 2.2±1.7 Activities of Daily Living (ADL) limitation and Charlson Comorbidity Index (CCI) of 6.2±2.3, respectively. At 180 days, intervention group had 4.2 less hospital bed-days/patient (95% CI: −8.25, −0.14; $p<0.05$) and lower cost (mean savings of €836/patient*). They tend to have lower re-admission with similar condition that precipitated the index hospitalisation (AOR=0.82; 95% CI: 0.44–1.54) and mortality (AOR=0.69; 95% CI: 0.45–1.07) during the follow-up period, compared to controls; although these were not statistically significant.
Conclusion: TC is effective in reducing hospital bed-days and cost among older patients with complex care needs.
*Converted using yearly exchange rate from Singapore Dollar to Euro as of 31st December 2014.

O-033
The effect of 2 year intervention of diet, physical exercise, cognitive training and monitoring of vascular risk versus control on chronic morbidity – the FINGER trial

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Objective: We evaluated the effect of a multidomain intervention on the development of chronic diseases in older adults.
Methods: Multicenter, randomized clinical trial of 1260 persons aged 60–77 years enrolled in the Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability (FINGER). Seventeen diseases were assessed at baseline and at 24-month follow-up. Complete-case analyses were performed including 532 (84.3% of the original sample) participants in the intervention group and 527 (83.8%) in the control group. The two-year multidomain intervention consisted of: nutritional guidance; exercise; cognitive training and social activity; and management of metabolic and vascular risk factors.
Results: After 24-month follow-up the average number of new chronic diseases was 0.47 (SD 0.7) in the intervention group and 0.58 (SD 0.8) in the control group ($p\leq0.01$). After adjustment for age, sex, education, current smoking, alcohol intake, baseline number of chronic diseases, being in the intervention group showed a HR ranging from 0.81 (0.66–0.98) for developing 1+ new chronic diseases to 0.39 (0.17–0.88) for developing 3+ new chronic diseases compared to the control group. The absolute risk reduction of developing 3+ new chronic diseases was 2.1 per cent, meaning that 2 out of 100 have been prevented related to the intervention. After stratification for the presence at baseline of zero or 1+ chronic diseases, findings were significant only in those already affected by baseline morbidity.
Conclusion: A multidomain intervention could reduce the risk of chronic diseases in older persons, especially in those already affected by morbidity.

O-034

HOMR model accurately predicts 1-year mortality in older hospitalized patients

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An important principle in caring for older people with frailty and multi-morbidity is to align interventions and treatments to the patient's condition, preferences, and prognosis. Making accurate prognostic assessments is a major challenge however. Recently, the Hospital patient One-year Mortality Risk (HOMR) model was shown to accurately predict risk of death 1 year after hospital admission. This model was validated in a large cohort of adult hospitalized patients in North America and significantly exceeds the predictive performance of other published validated prognostic tools. External independent validation has not been performed to date. In addition, the HOMR model has not been tested in an exclusively older patient cohort. We applied the HOMR model to patients aged 65 and over who were discharged from the geriatric service in our institution from January 1st 2013 to March 6th 2015. Patients who died during the index hospital admission were excluded. Overall 1409 patients were included in the analysis. Of these, 476 (33.4%) were frail. In total, 259 (18.4%) died within one year of hospitalization. The HOMR model was very discriminative with an area under the receiver operating characteristic curve (c-statistic) of 0.79 (95% confidence interval of 0.754 to 0.82). In conclusion, the HOMR model is robust and accurately predicts risk of death in older hospitalized patients and could potentially motivate discussions about values, priorities and goals of care between physicians and their patients. Its performance compares favorably to other published prognostic models.

O-035

Genetic and cardiovascular risk factors in relation to physical limitation in older adults – a population-based study

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Introduction: Behavioral (i.e., smoking, physical inactivity, heavy alcohol consumption) and metabolic (e.g., hypertension, diabetes) cardiovascular risk factors (CRFs) may increase the risk of physical limitation, however, the role of APOE ε4 on potentially heightening this risk remains unknown. The association between APOE and its interactions with CRFs on limitation in balance, walking speed, chair stand, and their composite was examined.
Methods: Data were from the longitudinal Swedish National study on Aging and Care in Kungsholmen, including adults aged 60+ at baseline (2001–2004) without cardiovascular disease (CVD), grouped into 4 limitation-free sub-populations: balance (n=1542), walking speed (n=1748), chair stand (n=1811), and composite (n=1401). Limitation was defined as balance stand <5 seconds, walking speed <0.8m/s, unable to stand from a chair, and limitation in at least 1 test. Cox proportional models, over 9 years, was utilized, with age as time-scale. Covariates included sex, mutual CRFs, prevalent and incident cognitive impairment, and incident CVDs.
Results: During follow-up 268 (22%), 263 (19%), 323 (22%), and 357 (30%) persons developed limitation in balance, walking speed, chair stand, and composite, respectively. APOE was significantly associated with limitation in chair stand (HR 1.29, 95% CI: 1.00–1.67) and composite (HR 1.28, 95% CI: 1.01–1.62), adjusting for all covariates. No significant interactions were found between individual CRFs and APOE. The risk of limitation for chair stand (HR 1.89, 95% CI: 1.23–2.89) and composite (HR 1.75, 95% CI: 1.19–2.57) was highest for the combination of aggregated behavioral CRFs and APOE.
Conclusions: Presence of ε4 allele may modify CRFs conferring a substantial risk of limitation.

O-036

The assessment of functional status and health-related quality of life in elderly patients with peripheral artery disease

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Introduction: The objective of the study was the assessment of the functional status and quality of life of the elderly patients with symptomatic peripheral arterial disease (PAD) admitted to the angiology department.
Methods: Results from basic and instrumental activities of daily living scales (bADL, IADL) and Quality of Life (EQ-5D-3L) were compared in PAD patients of different groups of ages: 55–64 years – Group I, 65–74 years – Group II and 75 years and over – Group III. The degree of PAD was evaluated using Rutherford's classification.
Results: The study enrolled 151 patients (I – 54 subjects, mean age 60.4±2.5 years, II – 54, 69±3.1, III – 43, 79.7±3.6), 66.9% were male gender. The degree of PAD was comparable in all groups. Patients had similar score in bADL scale, but score of IADL significantly decreased with age (22.5±3 vs. 21.5±4.5 vs. 20.6±3.4 points, p=0.001). Patients lost their independence most frequently in transportation. Index of EQ-5D-3L significantly decreased with age, (0.712±0.23 vs. 0.676±0.26 vs. 0.594±0.29, p=0.04). In the EQ-5D-3L questionnaire, the groups did not differ significantly in frequency of reported problems with movement, pain, anxiety and/or depression. However, older patients reported more difficulty in self-care (13.0 vs. 14.8 vs. 39.5, p=0.008).
Conclusions: Age may significantly influence on the quality of life and the loss of independence in instrumental activities daily living in patients with PAD.

O-037

What do nursing home patients with mental-physical multimorbidity need and who knows best?

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Introduction: Aging societies will bring an increase in the number of long-term care patients with mental-physical multimorbidity (MPM). To optimize care for patients with MPM, it is important to know their care needs, since unmet needs lower quality of life. To date, knowledge about (un)met care needs of these patients is limited. Therefore, the aim of this study was to explore their (un)met care needs and determinants of unmet needs.
Methods: Cross-sectional cohort study among 141 patients with MPM without dementia living in 17 geronto-psychiatric nursing home units across the Netherlands. Data collection consisted of chart review and semi-structured interviews. The Camberwell Assessment of Need for the Elderly (CANE) was used to rate (un)met care needs from patients' and staff's perceptions. Descriptive analyses and multivariate regression analyses were conducted.
Results: Patients rated a lower total number of needs, but a higher number of unmet needs than the staff. The highest numbers of met needs were reported in the physical and environmental domains. Most unmet needs were found in the social domain according to the

patients and in the psychological domain as reported by the staff. Disagreement between patient and staff regarding unmet needs was most common in the areas accommodation, company, and daytime activities. Depression, anxiety and less care dependency were the most important determinants of unmet needs.
Conclusions: Systematic assessment of care needs showed discrepancies between the perspectives of patient and staff. This should be the starting point of the dialogue between them about needs and expectations regarding care. This dialogue will lead towards the most optimal individually tailored care plan.

O-038
Health inequalities during dementia: A nation-wide 3-year longitudinal study of diabetes monitoring and complications among older adults

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Introduction: The association of Alzheimer's Disease and Related Syndromes (ADRS) and diabetes mellitus is increasing. Based on a nationwide healthcare reimbursement database, we compared diabetes care and the incidence of diabetes-related hospitalizations between patients with or without incident ADRS.
Methods: Reimbursement data from the French insurance health system database was used to identify subjects aged 65 years or more with incident ADRS between 2010 and 2012. Each subject was matched to a pair free of ADRS. 87 816 subjects with known diabetes were included. Diabetes monitoring and complications (HbA1c, lipid profile, microalbuminuria tests; eye examination; diabetes-related hospitalization) were studied between the year preceding ADRS identification (Y-1) and the subsequent two years (Y0 and Y1). We calculated Standardized Incidences Ratios (SIR) between ADRS and non ADRS group.
Results: HbA1c test was less frequent in ADRS group: 82.6% vs 88.5% had at least one HbA1c testing during Y-1 (SIR=0.94, 95% CI 0.93–0.95), 73.4% vs 89.0% during Y0 (SIR=0.83, 95% CI 0.82–0.84), and 75.4% vs 89.3% during Y1 (SIR=0.85, 95% CI 0.83–0.86). Subjects with ADRS were at higher risk of diabetes-related hospitalizations (SIR Y-1: 2.04, Y0: 3.14, Y1: 1.67), hospitalizations for diabetic coma (SIR Y-1: 3.84, Y0: 9.30, Y1: 3.06) and hypoglycemia (SIR Y-1: 4.20, Y0: 5.25, Y1: 2.27).
Conclusions: Incident ADRS is associated with a lower receipt of diabetes monitoring and an increased risk of diabetes complications. Further investigations of the mechanisms underlying these results are required, in order to propose actions limiting such health inequalities.

Area: Comprehensive geriatric assessment

O-039
At-home orthostatic hypotension among non-demented elderly subjects: Prevalence and determinants by self-measured home blood pressure monitoring

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Objective: To evaluate prevalence and determinants of orthostatic hypotension detected by self-measured home blood pressure monitoring (SMOH) among non-demented elderly subjects.
Patients and methods: Subjects attending a memory clinic, comprehensively evaluated in day care hospital (including detection of OH), 65 years or older, able to stand for ≥3 minutes and with Mini Mental State Examination >25/30were consecutively included In this observational study, OH was defined by a fall of at least 20mmHg in systolic blood pressure (BP) and/or at least 10mmHg in diastolic blood pressure. Subjects were instructed on SMOH detection protocol and lent validated devices. BP was to be measured three consecutive times, after 10 minutes of seated rest with readings taken one minute apart and after one and three minutes of standing, in the morning and in the evening for three consecutive days and BP results written down on a standardized data sheet. OH prevalence was evaluated according to OH occurrence at 3 minutes compared with the last BP in sitting position. Successful SMOH was defined by the ability to properly fill in at least four BP measurements in the data sheet.
Results: Mean age of the 151 included patients was 75.7 (8.4) years old (60.3% of women). One hundred twenty seven patients (84%) provided SMOH. There was no significant difference between the group "success" and "failure". Over the 3 days, 40.9% of patients had at least 1 occurrence of SMOH. Patients had 1, 2, 3 and 4 SMOH occurences in 26.8%, 7.9%, 4.7% and 1.6% respectively. SMOH determinants were low albumin level (p=0.03), high depression risk according to the Geriatric Depression Scale (p=0.03), benzodiazepine use (p=0.004) and ≥4 medications (p=0.04). In multivariate ordinal logistic regression SMOH was associated with benzodiazepine use (p=0.03).
Conclusion: SMOH appeared feasible to detect OH among subjects with preserved cognitive function. OH's prevalence increases with repetition of measurements. The determinants found are in accordance with the literature review. No association was disclosed between hypertension and antihypertensive treatments numbers probably due to a selection bias Predicative value of this SMOH for unfavorable outcome ought to be in investigated in a prospective study.

O-040
Qualitative gait abnormalities of neurologic type, clinical characteristics and disability in older community-dwellers without neurological diseases

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Introduction: Gait abnormalities are common even in well-functioning older adults, and are associated with falls, dementia and death. We evaluated the cross-sectional association of neurologic-type qualitative gait abnormalities (NGA) with clinical characteristics and disability in older community-dwellers.
Methods: The Healthy Brain Project enrolled a sub-sample of older community-dwellers of the Health ABC study without previous psychological or neurological illnesses. We detected NGA using standardized and validated readings of video-records (adapted from Verghese et al). Non-neurological abnormalities were not considered NGA. We also assessed demographics, vascular risk factors and comorbidities, cognitive function (3MSE and Digit-Symbol Substitution Test), brain MRI (cerebral volumes and connectivity), and disability in seven activities of daily living (ADL).
Results: Of 177 participants (mean age = 82, IQR = 4 years, 55% women, 58% Caucasian), 49 (27,7%) had NGA. In a multivariable logistic regression model, adjusted for different covariates, diabetes was associated with prevalent NGA (OR=3.24, 95% CI: 1.38–7.59),

whereas higher physical activity (OR=0.89, 95% CI: 0.80–0.99) and gait speed (OR=0.04, 95% CI: 0.005–0.27) were protective. NGAs were associated with disability in at least 1 ADL, adjusting for confounders (OR=3.95, 95% CI: 1.64–9.52), but this association was attenuated after adjusting for gait speed.
Conclusions: In our sample of community-dwelling older adults without clinical neurological diseases, NGA, assessed through standard visual classification, were associated with risk factors, such as diabetes and physical activity, which might have a "systemic" action (on cardiovascular, central and peripheral nervous systems, etc.). Gait speed could mediate their impact on disability. These results, if confirmed by longitudinal studies, might add information for preventing and managing mobility disability.

O-041
Postoperative delirium after aortic valve replacement: incidence, risk factors and cognitive outcomes

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Introduction: Older patients undergoing transcatheter (TAVR) or surgical (SAVR) aortic valve replacement can develop postoperative delirium (POD). This prospective study aims to determine: 1) POD incidence; 2) patients' characteristics associated with POD; 3) the relationship between POD and cognition at 3-month follow-up.
Methods: Patients aged = 70 years who underwent TAVR or SAVR in an academic hospital were assessed before and 3 months after the intervention. Data were collected on health, functional status (including instrumental (IADL) activities of daily living), mood, and cognition (MMSE). POD was assessed using the Confusion Assessment Method (CAM) at postoperative days 1, 2, 3, and 7.
Results: Among patients (N=84, mean age 81.5±6.5 years, 42.9% women) who underwent TAVR (N=57, 67.9%) or SAVR (N=27, 32.1%), POD incidence was 19.1% (N=16), not different in TAVR and SAVR (19.3% vs 18.5% respectively, P=0.932). Patients with POD had significantly baseline lower IADL (6.3±1.8 vs 7.2±1.2, P=0.034), lower MMSE (24.4±5.7 vs 27.4±2.4, P=0.017), and higher Society of Thoracic Surgeons (STS) score (6.2±5.4 vs 4.5±4.7, P=0.035). Only MMSE score remained associated with POD (AdjOR 0.79; 95% CI: 0.68–0.91, P=0.001) when adjusting for STS score. At 3-month (N=63), patients with POD (N=12, 19.0%) tended to have higher odds of cognitive impairment (AdjOR 4.61; 95% CI:0.87–24.36, P=0.072) once adjusting for baseline cognition.
Conclusions: About one out of five older patient had POD after aortic valve replacement. Worse baseline cognition was most strongly associated with POD incidence. Even when controlling for baseline cognitive performance, POD tended to further increase the odds of cognitive impairment at 3-month.

Area: Psychiatric symptoms and illnesses

O-042
Restraint use in older adults in home care: a systematic review

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Objectives: To get insight into restraint use in older adults receiving home care and, more specifically, into the definition, prevalence and types of restraint, as well as the reasons for restraint use and the people involved in the decision-making process.
Design: Systematic review, registered in PROSPERO (CRD42016036745).
Data sources: Four databases (i.e. Pubmed, CINAHL, Embase, Cochrane Library) were systematically searched from inception to end of April 2017.
Review methods: The study encompassed all empirical research on restraint use in older adults receiving home care that reported definitions of restraint, prevalence of use, types of restraint, reasons for use or the people involved. We considered publications written in English, French, Dutch and German. One reviewer performed the search and made the initial selection based on titles and abstracts. The final selection was made by two reviewers working independently; they also assessed study quality. We used an integrated design to synthesize the findings.
Results: Eight studies were reviewed (one qualitative, seven quantitative) ranging in quality from moderate to high. The review indicated there was no single, clear definition of restraint. The prevalence of restraint use ranged from 5% to 24.7%, with various types of restraint being used. Families played an important role in the decision-making process and application of restraints; general practitioners were less involved. Specific reasons, other than safety for using restraints in home care were noted (e.g. delay to nursing home admission; to provide respite for an informal caregiver).
Conclusions: Restraint use is common in home care and is influenced by the specifics of the home care setting. This implies that the wealth of knowledge about restraint use in residential settings cannot simply be transferred to the home care setting and so further research is urgently needed.

O-043
Risk of head and traumatic brain injuries associated with antidepressant use among community-dwelling persons with Alzheimer's disease, a nationwide matched cohort study

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Background: Antidepressant use has been associated with an increased risk of falls and fractures among older persons. However, risk of head and brain injuries has not been investigated.
Objectives: To investigate the risk of head injuries and traumatic brain injuries (TBI) associated with antidepressant use among persons with and without Alzheimer's disease (AD).
Methods: A matched cohort study compared new antidepressant users (N=10,910) with two nonusers (N=21,820) within the MEDALZ study cohort which includes all community-dwelling persons newly diagnosed with AD during 2005–2011 in Finland. Incident users were identified based on Prescription register data with a one-year washout period for antidepressant use. Nonusers were matched with users based on age, gender and time since AD diagnoses. Head injuries and TBIs were identified from Hospital Discharge and Causes of Death registers. Propensity score adjusted Cox proportional hazard models were utilized. Sensitivity analyses with case-crossover design were conducted.
Results: Antidepressant use was associated with an increased risk of head injuries (adjusted HR 1.35, 95% CI 1.20–1.52) and TBIs (HR 1.26, 95% CI 1.06–1.50). The risk was highest during the first 30 days of use (head injuries HR 1.71, 95% CI 1.10–2.66, TBIs HR 2.06, 95% CI 1.12–3.82) and remained on elevated level for head injuries for over 2 years of use. In case-crossover analyses, antidepressant use was consistently associated with higher risk of head injuries.
Conclusions: Antidepressant use was associated with an increased risk of the most severe outcomes, head and brain injuries in persons with Alzheimer's disease.

Area: Comprehensive geriatric assessment

O-044

Cancer related fatigue (CRF) before oncologic treatments: Fatigue related factors and analyses of early death associated to fatigue — AST-ELD study, a prospective cohort study with 979 elderly cancer patients

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Introduction: CRF is a common symptom, misunderstood and under-manage which can greatly affect the quality of life (QoL).The aims of this study were: Identify potential reversible factors associated with fatigue and analyze the relation between fatigue and early death in older patients.
Methods: This is a multicentric, prospective cohort study approved by an ethics committee. Patients over 70y have been enrolled. At the baseline and before the specific treatments we collected: MMSE, MNA,ADL, IADL, CIRSg, Gait speed, Charlson, G8, PS, Balducci score, fatigue and intensity (QLQC30), need to rest and intensity, medication review, Haemoglobin, clearance of creatinine,stage and cancers types; presence of: weakness, sleep disorders, anxiety, polypharmacy, isolation, confined patients. Events (deaths) have been collected during the follow up of 100 days.
Results: 979 patients were enrolled with median age:of 82y [70–100]. Fatigue was observed in 69% (In 21% and 25% respectively mild and high intensity). Patients who have expressed fatigue at the baseline before treatments were significantly more linked to death HR 1.9 [1.3–2.7]. Factors significantly associated with fatigue in multivariate analyses were polypharmacy >5 OR: 1.6 [1.1–2.1], anxiety OR 2.3 [1.7–3.2],GDS >5 OR: 2.2 [1.5–3.3], PS >2 OR 1.6 [1.1–2.5], lung cancers OR 4.1 [1.3–11.9], Hb <10g/dl OR 1.8 [1.2–2.8],homebound OR 1.5 [1.1–2.5], MNA <17 OR 1.8 [1.1–3.2] and MNA≤23.5 and >17 OR1.4 [1.1–2.1]. Among patients presenting fatigue at baseline (n=681) factors linked to death in multivariate analyses were: MNA <17 OR 12.1 [4.1–35.1] and MNA≤23.5 and >17 OR 6.7 [2.3–19.5], MMSE <24 OR1.5 [1.1–2.4],male gender OR1.8 [1.1–2.7], stage 4 OR2.7 [1.7–4.1], gait speed <0,8m/s OR3.1 [1.9–5.3] and weakness OR 2.5 [1.2–4.9].
Conclusions: Some of these factors are potentially reversible and can lead to guided interventions to improve QoL and possibly survival.The originality of this study is the relation between fatigue and geriatric assessment, biological factors, and early survival in a huge cohort of a real geriatric population.

Area: Pharmacology

O-045

Differences between drug related problems in aged and middle-aged patients: analysis of pharmacists medication order review during 8 years

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Introduction: Involvement of clinical pharmacists to prevent Drugs Related Problems (DRP) through pharmaceutical interventions (PI) is supported by literature, underlying positive patient outcomes and improvement of care. Identifying specific DRPs and PIs occurring in aged patients compared to middle-aged patients should help to better manage at-risk patients and prioritize PIs. This study aimed to analyses differences in DRPs during daily medication order review between patients aged ≥75 and patients aged 18–75.
Methods: A retrospective study on DRPs documented at the French university hospital of Lyon - 8 hospitals - into a dedicated module of the French Society of Clinical Pharmacy website (Act-IP®), was conducted from beginning of 2008 to end of 2015.
Results: A total of 56241 DRPs were registered: 19071 among aged patient and 37170 among patient aged 18–75. Compared to middle-aged patients, aged patients were, in particular, significantly associated with 1) interventions: Non Conformity of the drug choice to guidelines (OR=1.693, 95% CI [1.520–1.887]), adverse drug reaction (OR=1.532, 95% CI [1.408–1.667]), 2) drug class: Cardiac therapy (OR=5.257, 95% CI [3.404–8.119]), Antithrombotic agents (OR=3.059, 95% CI [2.003–4.671]). A supratherapeutic dosage of benzodiazepines (4.03%) was the most frequent DRP in aged people compared to middle-aged.
Conclusion: The medication review by pharmacists allows detecting DRPs effectively. This study highlights some directions that could be taken to improve prevention of DRP among aged patients: specific training to medical team, targeted information on safe drug use and a closer collaboration between physicians and pharmacists.

O-046

Trend analysis: prescription changes during geriatric care episodes

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Background: The number of prescribed drugs among old people has been rising in recent decades. With increasing age and many medications, risk of complications and drug prescription complexity increases. Many changes in prescriptions could be a factor that improves treatment quality. Aim: to investigate drug-prescription trends and factors that contribute to prescription changes. Specific objectives were to find out if high numbers of prescription changes are significantly correlated with age, gender, comorbidity, care-episode length, and number of drugs.
Methods: Data were extracted from geriatric clinic records in Stockholm during 2005, 2010, and 2015. Indicators for good drug therapy were used to assess the effects of prescription changes on quality, using an inappropriate drug use index, IDU index. Data were analyzed with Student's t-test; PR test, Wilcoxon's rank sum test, and linear regression.
Results: The patients had more comorbidities and more drugs, but shorter hospital stays and significantly fewer prescription changes in 2015 compared to 2005. There were significant associations between care-episode length and the prevalence of prescription changes. Our model showed that the prescription changes decreased with 8% for each day of shortening of the care episode. The number of prescription changes was negatively correlated to the IDU index.
Conclusions: The study showed that more prescription changes were associated with longer care episodes and improved drug prescribing quality as per the IDU index. Given prescription changes are regarded as a quality factor in geriatric care, quality may have decreased along with reduction of care-episode lengths, during the 2005–2015 period.

O-047

Discontinuing Inappropriate Medication In Nursing Home Residents (DIM-NHR study): A cluster randomized controlled trial

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Introduction: Inappropriate prescribing is a prevalent problem in nursing home residents that is associated with cognitive and physical impairment. Few interventions have been shown to reduce inappropriate prescribing. The aim was therefore to examine successful discontinuation of inappropriate medication.
Methods: A cluster randomized controlled trial was conducted. Fifty-nine wards were randomly assigned to the intervention or to "care as usual". The intervention was a Multidisciplinary Multistep Medication Review (3MR), consisting of an assessment of the patient perspective, a medical history, a critical appraisal of medication, a meeting between the elderly care physician and a pharmacist, and the execution of medication changes. The primary outcome was successful discontinuation of $\geq$1 inappropriate drug(s), without relapse or severe withdrawal symptoms. Secondary outcomes included neuropsychiatric symptoms, cognitive function and quality of life. Nursing home residents with a life expectancy of >4 weeks who did not refuse treatment with medication were included. Data were collected at baseline and at an average follow-up of 144 days.
Results: A total of 426 nursing home residents participated (intervention group: N=233 and control group: N=193). Generalized linear mixed models (logit link function) showed that for 91 (39.1%) of the residents in the intervention group $\geq$1 inappropriate drugs could be successfully discontinued vs. 57 (29.5%) of residents in the control group (adjusted odds-ratio: 1.57, 95% CI: 1.03 to 2.39). There was no deterioration on secondary outcomes.
Conclusions: The 3MR is effective in discontinuing inappropriate medication in nursing home residents whilst probably not compromising their wellbeing.

O-048

Acetyl-L-carnitine supplementation and the treatment for depressive symptoms: A systematic review and meta-analysis

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Introduction: Deficiency of acetyl-L-carnitine (ALC) appears to play a role in the risk of developing depression, but the data regarding its supplementation in humans are limited. We thus conducted a systematic review and meta-analysis investigating the effect of ALC on depressive symptoms across randomized controlled trials (RCTs).
Methods: A literature search in major databases, without language restriction, was undertaken from inception until 30 December 2016. Eligible studies were RCTs of ALC alone or in combination with antidepressant medications with a control group taking placebo/no intervention or antidepressants. Standardized mean differences (SMD) and 95% confidence intervals (CIs) were used for summarizing outcomes with a random-effect model.
Results: Twelve RCTs (11 of which were ALC monotherapy) with a total of 791 participants (mean age 54 years, % females = 65%), were included. Pooled data across nine RCTs (231 treated with ALC vs. 216 treated with placebo and 20 no intervention) showed that ALC significantly reduces depressive symptoms (SMD=−1.10; 95% CI: −1.65 to −3.99; I2=86%). In three RCTs comparing ALC vs. antidepressants (162 for each group), ALC demonstrated similar effectiveness compared toestablished antidepressants in reducing depressive symptoms (SMD=0.06; 95% CI: −0.22 to 0.34; p=0.69; I2=31%). In these latter RCTs, the incidence of side effects was significantly lower in ALCthan the antidepressant group.
Conclusions: ALC supplementation significantly decreases depressive symptoms compared to placebo/no intervention, whilst offering a comparable effect to established anti-depressant agents with fewer side effects. Future large scale trials are required to confirm/refute these findings.

O-049

Concurrent use of alcohol interactive medications and alcohol in older adults: A systematic review of prevalence and associated adverse outcomes

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Objectives: The quantity of alcohol consumed declines with age however, older adults drink more frequently. [1] Alcohol interactive (AI) medicines have the potential to interact with alcohol. [2] The aim of this review was to investigate the prevalence of concurrent alcohol and AI medicines use among older adults and associated adverse outcomes.
Methods: We conducted a search of PubMed, Embase, Scopus and Web of Science databases from January 1990-June 2016. Included studies reported: the quantity/frequency of alcohol consumption and concomitant use of alcohol & AI medicines in the same or overlapping recall periods in older adults. Data was extracted and the risk of bias was evaluated, using an adapted form of the Newcastle Ottawa cohort scale (NOS).
Results: From 546 records identified, 20 studies were included in this review. Nine reported a wide range of AI medicines; three investigated any medicine use and eight focused on psychotropics. Alcohol consumption was more prevalent among older men; while psychotropic use was higher among older women. Concurrent alcohol consumption with a wide range of AI medicines ranged between 18–39%, whilst concurrent use of psychotropics and alcohol ranged from 2–15.7%. Four studies reported the occurrence of adverse outcomes, with mixed evidence for falls and adverse outcomes.
Conclusions: This review highlights the prevalence of concurrent use of alcohol and AI medicines among older adults. With considerable heterogeneity in the inclusion of AI medicines, research is required to identify a comprehensive list of AI medicines in the future. Further research is required to investigate adverse outcomes due to concurrent use among older adults.
References:

[1] Britton A, Ben-Shlomo Y, Benzeval M, Kuh D, Bell S. Life course trajectories of alcohol consumption in the United Kingdom using longitudinal data from nine cohort studies. BMC Med. 2015;13:47.
[2] Weathermon R, Crabb DW. Alcohol and medication interactions. Alcohol Res Health. 1999;23(1):40–54.

O-050

Association between psychotropic and cardiovascular iatrogenic alerts and risk of hospitalizations in elderly people treated for dementia

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Introduction: Elderly people are at risk of repeated hospitalizations, some being drug-related and preventable. In 2011, French experts selected 5 "iatrogenic alerts" (IAs), from the existing sets of explicit criteria, to assess the appropriateness of medication in elderly patients. Our objective was to examine the association between hospitalizations and IAs in elderly patients treated for dementia.
Methods: A two-year longitudinal national database study using an approach similar to the "self-controlled case series" between January 1, 2011 and December 31, 2012 was set up to analyze data on drug prescriptions and hospital stays. IAs were defined as: (1) long half-life benzodiazepine; (2) antipsychotic drug; (3) co-prescription of 3 psychotropic drugs or more, (4) co-prescription of 2 diuretics or more and (5) co-prescription of 4 antihypertensive drugs or more. Data were obtained from the matching of two French National Health Insurance Databases. All affiliates, aged 75 or more, in treatment for dementia, still alive on January 1st, 2011 were included. The analysis was performed over a period of 6 months.
Results: 10,754 patients were included. During the IA periods, compared to others periods, hospitalization incidence increased by (0.23/year vs. 0.36/year) and the number of hospitalizations doubled (Proportional Fold Change PFC=1.9, 95% CI [1.8, 2.1]). We calculated that 22% (95% CI [20%, 23%]) of all hospitalizations were associated with IAs, 80% of which were due to psychotropic IAs.
Conclusion: IAs seem to be a simple and clinically relevant tool that enables the prescribing physicians to assess the appropriateness of the prescription in elderly patients treated for dementia.

O-051
The change in psychotropic drug use in Norwegian nursing homes (between 2004 and 2011)

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Objectives: We aimed to assess whether there were any changes in the use of psychotropic drugs in Norwegian nursing homes between 2004 and 2011. Also, we investigated whether the predictors of use of specific psychotropic drug groups have changed.
Methods: We conducted a secondary analysis of two cohort studies of two Norwegian nursing home samples (2004/05 and 2010/11). Multivariate models were applied.
Results: We found a significant decrease in the prescription of antipsychotic drugs between 2004 and 2011 (0.63 OR, 95% CI: 0.49–0.82, $p<0.001$) even after adjusting for relevant demographic and clinical variables. There are only minor changes for the other psychotropic drugs. We found that (1) the use of specific psychotropic drug groups as well as the number of psychotropic drugs used were associated with more affective symptoms and (2) the use of specific psychotropic drug groups as well as the number of psychotropic drugs used were associated with lower scores on the Physical Self-Maintenance scale.
Conclusions: This is the first study to show a robust decrease in antipsychotic drug use in nursing home patients with dementia unrelated to possible changes in case mix. The change might be explained by treatment recommendations against its use except in the most severe conditions of aggression or psychosis. Our findings indicate that it takes several years to implement scientific knowledge in clinical practice in nursing homes.

O-052
Preventability of serious adverse drug reactions in the elderly: analysis of the spontaneous reports to a French pharmacovigilance center over 10 years

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Introduction: Adverse drug reactions (ADR) are a major health issue, especially in the elderly, due to frailty and polymorbidity requiring polypharmacy. The risk of ADR and ADR-related hospitalizations increases with age. One to 2 thirds of ADR are predictable and preventable.The aim of this study was to identify characteristics of preventable and non-preventable ADR in the elderly.
Material and methods: We performed a retrospective analysis of serious ADR that occurred in the elderly over 75 years and were spontaneously reported to the Grenoble pharmacovigilance center from 2005 to 2015.
Results: Overall, 966 notifications of serious ADR were analyzed. Patients were 82.1±5.2 years old and 56.5% were women. Among these ADR, 27.7% (n=268) were preventable and 319 errors occurred, mostly during prescription (68.7%) and drug dispensation (29.9%). Patients suffering from preventable ADR were significantly older than those with no preventable ADR (p=0.008).Vascular disorders (ie. hemorrhages and hematomas), renal disorders (ie. acute kidney injury) and disorders of hemostasis were significantly more frequent in case of preventable ADR. Preventable ADR were significantly more related to antithrombotics, drugs acting on the renin-angiotensin system (RAS), analgesics, antigout and anti-inflammatory. A drug-drug interaction was much more frequent in preventable ADR (21.6%) than in not preventable ADR (1.9%).
Discussion/Conclusion: A quarter of ADR were preventable in the elderly, as it has been previously reported. Precautions have to focus on prescription and medical monitoring of antithrombotic agents and drugs acting on the RAS. Collaboration between pharmacovigilance, clinical pharmacist and practitioner could easily help to reduce occurrence of preventable ADR.

Area: Biogerontology and genetics

O-053
Estimating the association of 5HTTLPR polymorphism with delusions in Alzheimer's disease

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Introduction: Mechanisms underlying delusions in Alzheimer's disease (AD) patients have not been fully clarified. 5HTTLPR is

a 44-bp deletion polymorphism in promoter region of serotonin transporter gene SLC6A4, with 2 alleles: 1 termed long (L) and 1 short (S). Aim of this study was to determine whether the 5HTTLPR serotonin transporter gene polymorphism is associated with delusions in patients with AD.
Methods: A total of 257 consecutive AD patients were included. Of these, 171 AD patients with delusions (AD-D) and 86 AD patients without delusions (AD-noD). All participants underwent a comprehensive evaluation with standardized CGA, Mini-Mental State Examination (MMSE), and Neuropsychiatric Inventory (NPI). Individuals were genotyped for 5HTTLPR polymorphism in blinded fashion.
Results: No significant differences were shown between two groups on gender, mean age, educational level, in disease duration and in age at onset. AD-D showed significantly an higher cognitive impairment in MMSE ($p=0.047$), a major impairment in NPI ($p<0.0001$) and in NPI-Distress ($p<0.0001$), and a worsening in several CGA domains. Homozygosis for L/L genotype was associated with a lower MMSE in all ($p=0.002$) and AD-D ($p=0.024$) patients, and an increased risk for delusions in all AD-D ($p<0.0001$), moderate AD-D ($p<0.0001$) and severe AD-D ($p=0.006$) patients. L/L genotype seems to be associated to cognitive deterioration ($p<0.0001$) and delusion severity ($p=0.005$) after 5-years follow-up.
Conclusions: This study showed that 5HTTLPR polymorphism is associated with delusions in AD, with important implications regarding mechanisms underlying this symptom. Because of this, it could be possible to implement a personalized therapy for AD-D patients.

Area: Cognition and dementia

O-054
How do community-dwelling persons with Alzheimer's disease fall? Falls in the FINALEX study

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Introduction: People with dementia are at high risk for falls. However, little is known of the features causing falls in Alzheimer's disease. The aim of this study was to investigate how participants with Alzheimer's disease fall.
Methods: In the FINALEX exercise trial, participants' (N=194) falls were followed up for one year by diaries kept by their spouses. We investigated various features and risk factors behind the falls.
Results: Altogether 355 falls occurred during follow-up. The most common reason for a fall was stumbling (N=61). Of the falls, 123 led to injuries, 50 to emergency department visits, and 13 to fractures. The participants having no falls (N=103) were younger and had milder dementia than those with one (N=34) or two or more falls (N=57). Participants scoring around ten points on the Mini Mental State Examination were most prone to fall. In age-, sex-, and intervention-adjusted regression models, good nutritional status, good physical functioning according to Functional Independence Measure, timed "Up & Go" test, and Short Physical Performance Battery, and use of antihypertensive medication (Incident Rate Ratio (IRR) 0.68, 95% Confidence Interval (CI) 0.54 to 0.85) protected against falls, whereas fall history (IRR 2.71, 95% CI: 2.13 to 3.44), osteoarthritis, diabetes mellitus, COPD, higher number of drugs, drugs with anticholinergic properties, psychotropics, and opioids (IRR 4.27, 95% CI: 2.92 to 6.24) were risk factors for falls.
Conclusions: Our study provides a detailed account on how and why people with Alzheimer's disease fall, suggesting several risk and protective factors.

O-055
Trauma resurgence and impact on a dementia process

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Introduction: Links may exist between Alzheimer's disease (AD) and Post-Traumatic Stress Disorder (PTSD). No existing study seems to have verified if a PTSD treatment in AD patients can improve episodic memory and dementia stage. We verify if a PTSD treatment can improve memory in early or a moderate dementia subjects, with a positive impact on the AD evolution.
Method: 40 patients are studied with 20 subjects for the target group with AD and PTSD, and 20 subjects for the control group with AD but without PTSD. Our longitudinal study compares the two groups evolution over a 12-month period: before PTSD treatment (T0), after PTSD treatment (T2) and after an additional 6 months of follow-up. During the 3 periods, the episodic memory and the autobiographical episodic memory are examined with the Alzheimer's Disease Assessment Scale, the Memory Impairment Screen and the french version of the Autobiographical Memory Interview. The dementia stage is calculated with the Mini Mental State Examination. PTSD symptoms (with the Clinician Administered PTSD Scale) and quality of life (with the Alzheimer's Disease-Related Quality of Life) are examined.
Results: PTSD treatment in AD patients improve capacities in: (1) word recall, (2) word recognition, (3) immediate recall, (4) delayed recall, (5) recall of personal childhood events, (6) recall of personal young adult events, (7) recall of personal adult events, (8) recall of personal events of the 5 past years, (9) recall of personal events of the 12 past months, (10) general cognitive abilities and (11) quality of life.
Conclusion: PTSD identification and PTSD treatment in AD patients can increase, for more than 6 months, cognitive performance, verbal and autobiographical episodic memory efficiency, can stabilise the dementia process and significantly improve the quality of life.

O-056
Long-term effects of prediabetes and diabetes on cognitive trajectories in a population-based cohort

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Introduction: Diabetes has been linked to dementia risk. However, the cognitive trajectories in older adults with diabetes remain unclear. We aimed to investigate the effect of prediabetes and diabetes on cognitive trajectories among cognitively intact older adults in a long-term follow-up study.
Methods: Within the Swedish Adoption/Twin Study of Aging, 793 cognitively intact older adults aged $\geq$50 were identified at baseline and followed for up to 23 years. Cognitive domains (verbal, spatial/fluid, memory, speed) were assessed at baseline and up to seven follow–ups. Prediabetes was defined according to blood glucose levels in diabetes–free participants. Diabetes was ascertained based on self–report, hypoglycemic medication use and blood glucose levels. Data were analyzed with linear mixed–effect models adjusting for potential confounders.
Results: At baseline, 68 participants (8.6%) had prediabetes and 45 (5.7%) had diabetes. Compared to diabetes–free individuals, people with diabetes had lower performance in spatial/fluid abilities (β −2.63; 95% CI: −5.36, 0.05; $p=0.058$), and an accelerated linear decline over time in verbal abilities (β −0.15; 95% CI: −0.29, −0.01; $p=0.041$). Prediabetes was associated with an accelerated decline in processing speed (β −0.01; 95% CI: −0.02, −0.004; $p=0.041$), but with a better maintenance of memory (β 0.23; 95% CI: 0.05, 0.42; $p=0.013$) over the follow-up.

Conclusions: Prediabetes may accelerate processing speed decline, and diabetes is associated with the verbal ability decline, suggesting that diabetes and even prediabetes affect especially the cognitive domains of fluid intelligence at the early stages of cognitive impairment.

O-057
The association between clinical symptoms of dementia with Lewy bodies and functional image findings using SPECT for dopamine transporter and cerebral blood flow

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Introduction: I-123 ioflupane SPECT is a relatively new imaging tool to assess the integrity of the nigrostriatal dopaminergic neuron. I-123 ioflupane is the radioligand for the presynaptic dopamine transporter (DaT), which improves the accuracy of clinical diagnosis for dementia with Lewy bodies (DLB). Additionally, cerebral blood flow (CBF) in DLB is well-known to decline in the primary visual cortex using I-123 iodoamphetamine (IMP) SPECT which is possible to analyze regional CBF with the 3D stereotactic surface projection method. Few reports to compare the clinical symptoms and the SPECT findings are present.
Methods: Patients with memory loss, visiting our department of General Geriatric Medicine from May to December in 2016 were reviewed. We reviewed their clinical symptoms including tremor, rigidity, gait, visual hallucination, REM sleep behavior disorder, depression, and cognitive disorders. In DaT SPECT, average specific binding ratio (SBR) was calculated. In IMP SPECT, indexed regional CBFs were calculated. Biserial/Polyserial correlation between each clinical symptom and the imaging "marker" from scintigraphy was evaluated.
Results: There were high correlation between the below; tremor and SBR (rho=0.67), time orientation and CBF in parahippocampus gyrus (rho=0.52), pentagon drawing and CBF in parietal cortex (rho=0.65), and pentagon drawing and CBF in primary visual cortex (rho=0.78).
Conclusions: Some of clinical symptoms are associated with the functional imaging markers using clinically available radioisotopes. Our results will be helpful to interpret functional image findings linked the clinical symptoms.

O-058
Long-term exposure to anticholinergic and sedative drugs and cognitive and physical function in later life

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Introduction: Anticholinergic and sedative drugs from various therapeutic classes are frequently prescribed to older people. These drugs are known to impair cognitive and physical function in the short-term. However, long-term exposure to these drugs remains less examined.
Methods: Data from the Longitudinal Aging Study Amsterdam, a Dutch nationally representative cohort study, collected over twenty years (1992–2012) at seven occasions, were analyzed. On each occasion, cumulative exposure to anticholinergic and sedative drugs was quantified with the Drug Burden Index (DBI), a linear additive pharmacological dose-response model. The relationships between the DBI and outcomes of cognitive function (MMSE, Alphabet Coding Task, 15-Words Test) and physical function (Walking Test, Chair Stands Test, Cardigan Test, and Functional Independence Scale) were examined using linear mixed models adjusted for sex, marital status, age, education, smoking status, drugs not included in DBI, body mass index, depression, and co-morbidities.
Results: At baseline, there were 2896 individuals (52% women; mean age 70±9 years). Of them, 62% had no exposure to anticholinergic and sedative drugs (DBI=0), 24% moderate exposure (DBI =0–1), and 14% high exposure (DBI >1). Significant independent associations were found between the DBI and physical function (Walking Test log transformed: B=0.02 [95% CI: 0.01; 0.03], Cardigan Test log transformed: B=0.02 [95% CI: 0.01; 0.03], Chair Stands Test B=0.48 [95% CI: 0.20; 0.76], and Functional Independence: B= -0.89 [95% CI: −1.22; −0.55]). No associations were found between the DBI and cognitive function.
Conclusions: Over 20 years, higher anticholinergic and sedative exposure is associated with poorer physical but not poorer cognitive function.

Area: Pharmacology

O-059
Potential drug interactions in older patients with cancer: the ELCAPA cohort survey (ELCAPA-15)

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Introduction: Because of the increasing number of comorbidities with age leading to polypharmacy, older cancer patients are at higher risk of adverse events related to drug-interactions in the daily medications, but also between daily medications and chemotherapy drugs.Objectives: To identify Potential Drugs Interactions (PDI) in the daily medications, PDI between daily medications and chemotherapy, Potential Clinical Outcomes (PCO) related to major PDI.
Method: From 2007 to 2014, all consecutive cancer patients aged 70 years or older, referred for geriatric assessment were included in the prospective ELCAPA cohort survey. For the present study patients receiving chemotherapy were analyzed. PDI were analyzed using Lexicomp Online® (Lexi-Comp, Inc., Hudson, USA) software and completed with the Theriaque® website for French medications. Collected PCO were those relevant in geriatrics. PDI and PCO were classified according to importance (A: no interactions known, B: no action needed; C: monitor therapy; D: consider therapy modification; X: avoid combination). Factors associated with PDI of grades C, D or X were analyzed using ordered multivariate logistic regression dependent variable being the PDI in three categories, PDI of grade A or B (reference), versus C, versus D or X.
Results: The study included 442 patients (median age: 77 years;

Q1: 74.5 - Q3: 81; 48.7% of women). Most frequently tumor site were colorectal (20.9%), followed by urological tracts (19%), breast (12.4%); 22.9% had metastasis. The median number of drugs per patients per day was 6 [3–8], the median comorbidities index CIRS-G was 12 [9–16]. At least 1 PDI per patient was identified in the daily medications in 70.6% of patients (median 4 [2–7]), and between daily medications and chemotherapy drugs in 33.9% (median 2 [1–3]). Overall, 171 patients had PDI of grade C (38.7%) and 166 of grade D or X (37.6%); 1918 grade C, D or X PDI were identified (83.8% of C and 16.2% of D or X), 1578 (71.5%) in the daily medications and 340 (28.5%) between daily medications and chemotherapy. Considering drug-interaction in daily medications, main PCO were hypotensive risk (31.7% of all PDI), psychotropic effects (16.4%), glycemic disorders (11%), hemostasis deregulation (7.9%), fluid disorders (7.4%), and QT prolongation (3.6%). Considering drug-interaction between daily medications and chemotherapy, main PCO were risk of renal, cardiovascular, hemostasis deregulation, or neurogenic impairment (17.6%), over-exposition of chemotherapy (11.7%) or under-exposition (8%). After adjustment for age, tumor site and metastasis, factors independently associated with PDI were increase number of daily medications (adjusted OR (ORa)1-medication increase = 1.74; 95% CI [1.43–2.11] for grade C; ORa=1.95; 95% CI [1.56–2.43] for grade DX), hypertension (ORa=4.10; 95% CI [1.84–9.17] for grade C) and overweight/obesity (ORa=2.55; 95% CI [1.12–5.82] for grade C).

Conclusion: PDI were frequent in older cancer patients. This highlights the need of monitoring the iatrogenic risk, especially for hypotension risk, psychotropic side-effects, glycemic and hemostatis regulation mainly in patients with polypharmacy, hypertension, and overweight, with integrated team involving geriatricians, pharmacists, and oncologists.

Area: Ethics and end of life care

O-060
The use of opioids in the dying geriatric patient: comparison between the acute geriatric ward and the palliative care unit

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Introduction: Palliative care for the older person is often limited, resulting in poor quality of dying. Using opioids can be one of the cornerstones to achieve better symptom control. However, little data concerning the use and dosage of opioids are available.

Methods: In this multicentric retrospective study, we included patients 75 years and older who died on the acute geriatric unit (AGU) and the palliative care unit (PCU) in 3 hospitals (during a 2-years period). Sudden deaths were excluded. Demographic and clinical variables, and data concerning use and dosage of opioids in the last 72 hours before death were collected. Underlying pathology was divided into several groups: cancer, organ failure, dementia, others.

Results: Data from 556 patients were collected (38.5% from PCU, 61.5% from AGU). On the PCU, cancer was the most frequent underlying pathology, compared to organ failure on the AGU. After adjusting for the variables age, gender, underlying pathology, opioids seemed to be given more frequently (OR 1.2; 95% CI: 1.1–1.3; P<0.001) and in a higher dosage (B 34.2; 95% CI: 15.0–53.4; P=0.001) on the PCU compared to the AGU.

Conclusions: Organ failure is more frequently considered as the underlying pathology in elderly dying on an AGU, compared to cancer on a PCU. After adjusting for these variables, opioids are more often used and in a higher dosage in the terminal phase in patients on the PCU compared to the AGU.

O-061
Use of opioids at the end of life in adults with advanced dementia in Finland

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Introduction: Alzheimer's disease as well other types of dementias are inevitably progressive. Recognizing their terminal stage is therefore a basis in the adequate palliative care planning. Pain is believed to be under-treated in elderly, especially in patients with dementia.

Methods: Data from long-term care facilities was extracted from the Resident Assessment Instrument (RAI) database of Finnish National Institute for Health and Welfare during the 3-year study period. Study was descriptive and cross-sectional. Relationships were performed as chi-squares and logistic multivariation tests.

Results: The total number of assessments was 23454. Mean age was 84 years and it was almost equally distributed across the country. The number of residents over 90 years was significantly higher in Helsinki (27%) compared to the rest of Finland (22%). Two-thirds of residents were female. Opioids were used in more than a third of all observations. Buprenorphine was the most common. Phentanyl (OR 0.35, 95% CI: 0.26–0.47) and buprenorphine (OR 0.73, 95% CI: 0.58–0.90) were significantly less used in Helsinki. Opioids were significantly more used among patients over 90 years (OR 1.30, 95% CI: 1.05–1.62). Despite observed more pain, patients with dementia were more likely to receive lower doses of opioids in Helsinki compared to those in other parts of Finland. However, the lowest percentage of use was found among nursing home residents.

Conclusion: Our results show that there are clear differences in treatment of patients with dementia at the end of life in Helsinki compared to other parts of Finland, especially among nursing home residents.

Area: Pharmacology

O-062
Effect of the Mebrobamate removal on psychotropic drugs consumption in patients with dementia (PACAL-Alz cohort)

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Introduction: Describe the consumption of psychotropic drugs 6 months after the withdrawal of Meprobamate (usually prescribed for behavioral symptoms of dementia in France) in the PACA-Alz cohort with the hypothesis of a switch to other psychotropic drugs.

Methods: Retrospective observational pharmacoepidemiological study from 10/01/2011 to 07/01/2012 based on Provence Alpes Côte d'Azur region (PACA)-ALZ cohort including patients with the chronic condition "Alzheimer disease or related disease" and/or had at least one delivery of Alzheimer's specific treatment, registered in the General Health Care System. Four subgroups were analyzed according to the moment of the meprobamate removal announcement (October 2011) and the removal (10/01/2012). Chronic exposure defined as 3 consecutive deliveries.

Results: Among the 36442 subjects of the cohort, 11.1% had at least a delivery of mebrobamate in 2011; out of which 44.6% (n=1814) were still consumers after the removal announcement. Those who were the latest to stop meprobamate were more likely to be on a chronic consumption (86.5%). In all groups, meprobamate withdrawal was associated with an important increase of benzodiazepines (+15.3%, p<0.001) and antipsychotics consumption (+5.6%,

p<0.001), in particular in the subgroup who stopped in January 2012 (+25.1% and +10.0% respectively).
Conclusions: The removal of a psychotropic drug is associated to the switch to others psychotropic classes. This should be taken into account when specific warnings are published with pharmacoepidemiological studies to follow consumption modifications.

O-064
Trajectories of long-term exposure to anticholinergic and sedative drugs: A latent class growth analysis

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Introduction: A variety of drugs, which are frequently prescribed to older people, have anticholinergic and sedative effects whereby they may impair cognitive and physical function. Although substantial inter-individual variation in anticholinergic and sedative exposure has been documented, little is known about subpopulations with distinct trajectories of exposure.
Methods: Data from the Longitudinal Aging Study Amsterdam (LASA), an ongoing Dutch population-based cohort study, collected over 20 years (1992–2012) at seven occasions, were analyzed. On each occasion, cumulative anticholinergic and sedative exposure was quantified with the Drug Burden Index, a linear additive pharmacological dose-response model. The most likely number of trajectories were empirically derived with Latent Class Growth Analysis using "Goodness of fit" statistics. Trajectories were then compared on physical and cognitive function.
Results: A total of 763 participants completed all follow-ups (61% women; mean age 83, ±6). "Goodness of fit" statistics (Bayesian Information Criterion = 22916, Bootstrapped Likelihood Ratio Test of 3 vs. 2 classes = 514.12 p<0.01, Entropy = 0.87) indicated the presence of 3 distinct trajectories: "Gradual Increase" (67%), "Stable High" (8%), and "Steep Increase" (25%). Linear mixed models adjusted for co-morbidities and other covariates demonstrated poorer physical function but not poorer cognitive function for "Stable High" and "Steep Increase" trajectories compared to the "Gradual Increase" trajectory.
Conclusions: Three trajectories of long-term anticholinergic and sedative exposure were identified. The present findings need corroboration by examining whether more adverse trajectories are associated with poorer outcomes on other measures of physical and cognitive function.

O-065
Implementing medication reconciliation for elderly hospitalized in an orthopedic unit raised surgeons' awareness to therapeutic recommendations and led to decrease the cumulative exposure to sedative and anticholinergic drugs

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Introduction: Sedative and anticholinergic medications are widely used in older adults. They are associated with adverse clinical outcomes, especially falls that can lead to hospitalization. In the orthopedic unit, the mobile geriatric multidisciplinary team (MGMT) is consulted to assess clinics of patients over 75. Recently, we have integrated systematic medication reconciliation and medication review to therapeutic recommendations. The aim of our study was to evaluate the impact of this process on in-hospital prescriptions, and exposure to sedative and anticholinergic drugs.
Methods: We recruited patients over 75 hospitalized in the orthopedic unit of a 1200-bed University Hospital. After a clinical assessment, medication reconciliation was performed and medication review was implemented to provide therapeutic recommendations. Cumulative exposure to anticholinergic and sedative drugs within the chronic treatment was measured by the drug burden index (DBI). We retrospectively compared recommendations provided by the MGMT, before and after implementation.
Results: 58 and 56 patients were recruited before and after implementation, respectively. Demographics and DBI at admission, were comparable for both groups. After implementation: (i) the number of therapeutic recommendations significantly increased (1.7±2.0 vs 3.4±2.2 p<0.05), such as their acceptance rate (10±6% vs 67±35%; p<0.05); (ii) the DBI of chronic treatment was significantly decreased at discharge (1.09±0.72 vs 0.81±0.58, p<0.01).
Conclusion: Medication reconciliation ensured the process of medication history and provided a solid basis for medication review. We had a significant impact on cumulative exposure to anticholinergic and sedative drugs at discharge. Further studies are required to evaluate the long-term clinical impact.

Area: Ethics and end of life care

O-066
A high sense of coherence in old spousal caregivers protects from burden

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Introduction: Studies about caregiving focus often on the "burden" of the caregiver but few have looked at caregiver's potential resources like the sense of coherence (SOC). SOC has 3 components (comprehensibility, manageability and meaningfulness) and has been positively associated to perceived health and quality of life. Our research question was: Has SOC an influence on the burden in older caregivers?
Methods: Seventy-nine spousal caregivers of frail older patients were recruited through the geriatric outpatient clinic. Data collected: Zarit Burden Inventory, SOC, Geriatric Depression Scale (GDS-15), sleep, time of supervision. Among care-receiver: Katz Index, Global Deterioration Scale and Neuropsychiatric Index. A

multivariable logistic regression was performed to identify the variables which best predict caregivers' burden. Results are presented as mean ± SD, median ± P25–P75, odd ratios (OR) and 95% confidence intervals (CI).
Results: Mean age was 79.4±5.3; 53% were women. Among care-receiver (mean age 81.6±5.3) 82% had cognitive impairment and the median (P25-P75) Katz Index was 14 out of 24 (8–17). Caregivers' burden mean score was 32 out of 88 representing a "mild to moderate burden" according to Zarit. Caregivers with a high SOC and caregivers older than 80 years old showed a lower burden (OR=0.2; 0.05–0.68 & OR=0.88; 0.78–0.99, respectively). A higher burden was associated with more ADL-dependency among the care-receiver (OR=9.31; 2.1–53.7).
Conclusions: Having a high sense of coherence seems to be a protective factor against the burden. To support caregivers, health providers should recognize their expertise and the meaning of this care situation in order to enhance their positive reactions.

Area: Pre and post operative care

O-067
Pre-operative Geriatric Medicine Surgical Liaison Clinic: A service evaluation

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Introduction: We set up a pre-operative geriatric medicine clinic for the frailest patients undergoing elective surgery. The nurse-led pre-operative assessment clinic was asked to identify patients using a validated frailty score.
Methods: The Edmonton Frail Scale (EFS) has been shown to be valid for use by non-geriatricians [1]. Patients aged ≥65 with EFS score ≥10 (orthopaedic surgery) or ≥7 (vascular or colorectal surgery) were referred to a geriatrician pre-operatively.
Results: 47 patients (69–94 years, mean age 80.4) were reviewed. 43% did not meet referral criteria. This was disproportionately seen with increasing age; 70% of patients aged <76 being appropriately referred and 54% of patients aged ≥76. Only 35% of orthopaedic referrals met the EFS criterion.Geriatricians recommended specific interventions in 66% of patients. This did not correlate with EFS and geriatric review was at least as likely to prompt a change in management in patients with low EFS scores as in those with higher scores.
Conclusions: Our results suggest limitations to the reproducibility of EFS scoring and to its value in this setting. Bias towards referral to geriatric clinic may be introduced because of older patient age, or the nature of the intended surgery. EFS served as a poor predictor as to whether geriatrician review could drive medical optimisation pre-operatively.Local practice has evolved, with referrals now based on clinical concern from surgical or anaesthetic colleagues rather than EFS.
References:
[1] Rolfson DB et al. Validity and Reliability of the Edmonton Frail Scale. Age and Ageing 2006 35(5) 526–9.

O-068
Isolated cardiac troponin rise does not modify the prognosis in elderly patients with hip fracture

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Introduction: Perioperative myocardial infarction remains a life-threatening complication in non-cardiac surgery and even an isolated troponin rise (ITR) is associated with significant mortality. Our aim was to assess the prognostic value of ITR in elderly patients with hip fracture.
Methods: In this cohort study, all patients admitted between 2009 and 2013 in our dedicated geriatric post-operative unit after hip fracture surgery with a cardiac troponin I determination were included divided into Control, ITR and acute coronary syndrome (ACS) groups. The primary end point was a composite criteria defined as 6 month mortality and/or re-hospitalization. Secondary end points included 30-day mortality, 6 month mortality, and 6 month functional outcome.
Results: 312 patients were (age 85±7 years) divided into Control (n=217), ITR (n=50) and ACS (n=45) groups. There was no significant difference for any post-operative complications between ITR and Control groups. In contrast, atrial fibrillation, acute heart failure, hemorrhage, and ICU admission were significantly more frequent in the ACS group. Compared to the Control group, 6-month mortality and/or rehospitalization was not significantly modified in the ITR group (26 vs 28%, P=0.84, 95% CI of the difference -13 to 14%) whereas it was increased in the ACS group (44 vs 28%, P=0.02, 95% CI of the difference 2 to 32%). ITR was not associated with a higher risk of new institutionalization or impaired walking ability at 6 month, in contrast to ACS group.
Conclusion: In elderly patients with hip fracture, ITR was not associated with a significant increase in death and/or rehospitalization within 6 months.

O-069
Clinical and functional differences at 1-year follow-up between nursing home and community dwelling hip fracture patients

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Introduction: The aim of this study was to know if there are dif-

ferences in clinical and functional outcomes at 1-year of follow-up between nursing home (NH) and community dwelling (CD) hip fracture (HF) patients.
Methods: All patients admitted with HF from January 2013 through February 2014 to a co-managed orthogeriatric unit in a 1,100-bed university hospital were included. A geriatric assessment protocol was applied and patients were treated with a specific protocol aimed to improve function, nutrition, bone metabolism, pain and anaemia. They were classified in function of their previous place of residence. One year after HF, patients or relatives were contacted by telephone and requested about vital and functional status and readmissions. The impairment of the gait was moderate/severe if the patient had ≥2/5 points decline in the Functional Ambulatory Category Scale.
Results: Five hundred and nine patients were included, 116 (22.8%) of them were admitted from NH. At 1 year follow-up NH patients had a similar mortality rate than CD patients (27.6% vs 21.9%, p=0.201), they had similar hospital readmissions (27.6% vs. 23.6%, p=0.479), they reached their baseline gait ability less frequently (38.5% vs 56.2%, p<0.001). The impairment of gait was moderate/severe more frequently (41.0% vs 18.8%, p<0.001) in NH than in CD patients.
Conclusions: HF patients admitted from NH and treated by means of a specific orthogeriatric assessment and management protocol did not die or were readmitted more frequently at 1-year follow-up but they had more functional decline than CD patients.

O-070
Preoperative geriatric assessment and tailored interventions in frail older patients with colorectal cancer. A randomised controlled trial

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Background: Colorectal cancer (CRC) is prevalent in the older population, and surgery is the mainstay in curative treatment. A preoperative geriatric assessment (GA) can identify frail older patients at risk for developing postoperative complications. In this randomised controlled trial we wanted to investigate whether tailored interventions based on a preoperative GA could reduce the frequency of postoperative complications.
Methods: Patients >65 years scheduled for elective CRC surgery and fulfilling predefined criteria for frailty were randomised to either a preoperative GA followed by a tailored intervention, or care as usual. Primary endpoint was severe postoperative complications. Secondary endpoints included any complication and survival.
Results: 122 patients with a mean age of 78.6 years were randomised. Time from inclusion to surgery was median 6 days. We found no statistically significant differences between the intervention group and the control group for severe complications (68% vs 75%, p=0.43) or 30-day survival (4% vs 5%, p=0.79). Any complication occurred in 76% of intervention group patients compared to 87% in the control group (p=0.10). In secondary analyses adjusting for prespecified prognostic factors, there was a statistically significant difference in favour of the intervention for reducing the total number of complications (p=0.05).
Conclusion: A preoperative GA and tailored interventions did not reduce the rate of severe complications in frail older patients electively operated for CRC. Secondary analyses showed an effect of the intervention for reducing the total number of complications. This effect was due to a reduction of less severe complications in the intervention group.

O-071
Prognostic value of the Erasmus Frailty Score on post-operative delirium after transcatheter aortic valve implantation in older patients. The TAVI Care & Cure study

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Introduction: Post-operative delirium (POD) is a frequent and severe complication in older patients undergoing TAVI. However, little is known about the prognostic value of frailty on POD. This study investigated the potential independent value of a novel, self-developed frailty score in predicting delirium after TAVI in older patients.
Methods: TAVI Care & Cure is an observational ongoing study including consecutive patients undergoing TAVI at the Erasmus University Medical Centre. Prior to TAVI, a frailty status was assessed. The Erasmus Frailty Score was defined as follows: 1 point assigned when: MMSE was <27 points, MUST <2 points, grip strength <20 kg for females, <30 kg for males, KATZ index ≥1 limited activity, Lawton and Brody index ≥2 limited activities. Maximum score was 5. Patients were classified as frail when the score was ≥3. Presence of delirium was evaluated by daily clinical assessment by a geriatrician pre- and post TAVI. Primary outcome was to investigate the predictive value of frailty on delirium in TAVI patients. Logistic regression was used.
Results: 213 patients were included for analysis. Incidence of POD was 19.5% (n=50). A frailty score of ≥3 was significantly more present in the group of patients developing a delirium (OR 2,9 (95% CI 1,30–6,6], p=0.009). Other independent predictors of POD included: age (OR 1.10 [95% CI 1.01–1.19], p=0.021), previous stroke (OR 6.36 [95% CI 2.2018.40], p=0.001), MUST-score ≥2 (OR 2.8 [95% CI 1.03–7.44], p=0.043), and cognitive disorder (p=0.015).
Conclusion: The Erasmus Frailty Score is an independent predictor of POD in the elderly.

O-072
Impact of anticoagulants and antiplatelet agents on long-term mortality after hip fracture

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Objectives: To evaluate the impact of preoperative anticoagulant and antiplatelet therapy on the long-term mortality of hip fracture patients.
Methods: One-year follow-up study including patients aged >65 admitted with hip fracture. Variables: demographic, functional (Barthel Index – BI, Functional ambulation classification – FAC, Lawton index – LI), comorbidity (Charlson's Index – CCI), time to surgery (T-Surg), length of stay (L-stay), use and type of Anticoagulant and antiplatelet agents, admission haemoglobin (Hb-a), lowest haemoglobin level (Hb-L), blood transfusion, complications and mortality at 1-year follow-up. Statistical analysis: Chi-square and Mann-Whitney U test, Kaplan-Meier survival curves, Cox regression model. SPSS 23.0.
Results: n=418, mean age 84.9 (SD: 7.2), women 79.9%, BI 85 (IQR = 65–95), FAC 4 (IQR = 3–5), CCI 6.4 (SD: 2.0), cognitive impairment 43.5%. T-Surg 3.8 (IQR = 2.1–5.5); L-stay 9.3 (IQR = 6.4–14.7). Anticoagulants 15.8% (acenocumarol 86.2%). Antiplatelet agents 34.4% (Acetylsalicylic acid 100mg/day 76.9%, 300mg/day 9.0%, Clopidogrel 9.0%). Hb-a 12.5; Hb-L 8.9; preoperative blood transfusion 24.7%. Complications: delirium 45.6%, heart failure 16.5%, kidney injury 25.9%. In-hospital mortality 3.3%, one-year mortality 15.2% (anticoagulant therapy 18.3%, antiplatelet therapy 17.1%, and other 9.8%; with no differences between groups). There was statistical association between death and sex, age, functional status, comorbidity, Hb-a, length of stay and complications (p<0.05). Predictors of

one-year mortality in multivariate analysis: men HR 2.18 (p=0.010), age HR 1.04 (p=0.054), CCI HR 1.28 (p<0.001), kidney injury HR 2.62 (p=0.001), and delirium HR 2.07 (p=0.025).
Conclusions: There was no association between use of anticoagulant and antiplatelet agents and mortality 1-year follow-up in our sample; being demographic, comorbidity, and certain complications the main predictive factors.

O-073
Consultants of the week model in orthogeriatric care

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Objectives: There are various models of orthogeriatric care. This includes older models such as the traditional model of orthopaedic care and post-operative geriatric care. Newer models include orthopaedic patients having routine orthogeriatric review, admitted under geriatricians and shared care (patients are managed throughout their stay by a named orthopaedic surgeon and a named orthogeriatrician within a defined orthogeriatric team).
Methods: We use the shared care model but noted that the orthogeriatrician focused on the hip fracture patients (NoFs) whereas the orthopaedic surgeon focused on the other trauma patients. The medical needs of the trauma patients were not addressed early and at times the orthopaedic needs of the hip fracture patients were delayed.In November 2016, we implemented the CoW, whereby the same orthopaedic surgeon and orthogeriatrician saw every patient on the ward round.
Results: 6 months before the CoW model (July – Oct 2016), the Length of Stay (LOS) for NoFs was 13.13 days and 4 months after the CoW model (Nov–Feb 2017), the LOS was 13.33 days.For other trauma patients, before CoW, LOS was 7.77 days and after CoW 6.49 days.We receive 400 NoFs and 1291 other traumas annually. With a 1.28 day reduction for other trauma; the cost savings (£275/bed) is approximately £454,432 for other trauma with total net saving of £432,432. Midnight bed occupancy: 26.77 before CoW and 24.44 after COW.Readmissions: 16.0% before CoW and 13.1% after CoW.
Conclusion: The CoW model reduced the LOS for trauma patients with significant cost-savings.

O-074
Association between actigraphy sleep parameters and recovery of walking ability after hip fracture

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Introduction: Several studies had shown an association between sleep disorders and sarcopenia, cognitive function, mood and mortality, especially among elderly with osteoporotic fracture. The main objective of this study is to examine the association between objective sleep parameters and recovery of walking ability in acute care after hip fracture.
Methods: All patients admitted within 3 days after hip fracture surgery (HFS) into a dedicated unit of peri-operative geriatric (UPOG) care and who completed wrist actigraphy were included. Actigraphy was used to record sleep parameters including total sleep time, daytime and nighttime sleep duration and a sleep-wake parameter, the circadian rhythm, which refers to the relationship between daytime and nighttime activity. Demographic and medical data were also prospectively collected and especially if patient had or not a walking disability prior to the fracture.
Results: From 06/2015 to 03/2017, 133 patients were included (age 87±6 years; men 17.3%, dementia 39%, CIRS 10±4, previous walking disability 65%). After discharge, 68% patients recovered previous ambulation status (95.4% with previous walking disability, 15.2% without). In patients with previous walking disability, recovery was inversely associated with daytime sleep duration (p=0.047), and positively associated with circadian rhythm (p=0.002) and nighttime activity (p<0.001). No association was found in patients without walking disability.
Conclusion: In elderly patients with hip fracture surgery managed in UPOG care pathway, recovery of previous ambulation status at discharge is associated with daytime sleep duration and physical activity assessed by actigraphy at admission.

Area: Cognition and dementia

O-075
Relationship of brain amyloid deposition to daily functioning in older adults without dementia: A longitudinal study from the MAPT trial

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Objectives: Amyloid plaques are pathologic features of Alzheimer's disease and negatively impact the longitudinal course of cognitive function in older adults. However, the longitudinal evolution of daily limitations in amyloid positive individuals remains largely unknown so far. Here we aimed at examining the evolution of instrumental activities of daily living (IADL) performance according to the presence of brain amyloid deposition. Design: Observational longitudinal analysis. Setting: Amyloid Positon Emission Tomography (PET) ancillary study from the Multidomain Alzheimer Prevention Trial. Participants: 269 community dwelling elders aged 70 and over without dementia. Measurements: Linear mixed models were performed to assess the 36-month modification of ADL-PI performance according to the presence of amyloid deposition (Standardized Uptake Value $\geq$1.17). Additional analyses were also performed to examine the changes in specific domains of daily functioning. Analyses were also performed with adjustments for age, gender, ApoE and randomization group.
Results: Among our participants (women = 60%, age = 75±4 years), 102 (37.9%) were amyloid positive. Amyloid negative subjects showed a statistically significant improvement in ADL-PI total score (p=0.04 after 36 months). The difference in change between the amyloid positive and negative participants was not significant (β=−0.95±0.53 after 36 months, p=0.08). These changes in IADL performance after 3 years were consistent in adjusted models (β=−1.04±0.53, p=0.07). Amyloid positive subjects were also likely to present more difficulties in memory tasks (β=−0.45±0.24, p=0.06) than their amyloid negative counterparts.
Conclusion: Amyloid positive elders showed poorer IADL performance after 3 years. Future research is needed to better understand the relationship of amyloid plaques to functional limitations.

O-076

Corneal Confocal Microscopy a potential surrogate end point for mild cognitive impairment and dementia

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Background: There are no validated biomarkers to diagnose mild cognitive impairment (MCI) or dementia. Corneal confocal microscopy (CCM) is a non-invasive ophthalmic device which can detect neuronal loss, characterised by a reduction in corneal nerve fibre density (CNFD), branch density (CNBD) and length (CNFL). We have pioneered CCM as a surrogate marker of neuronal loss in a range of peripheral neuropathies and more recently in central neurodegenerative conditions like Parkinson's disease and Multiple Sclerosis.
Aims: To evaluate the association between cognitive impairment and corneal axonal loss in individuals with MCI and dementia.
Methods: 56 subjects (20 with MCI, 14 with dementia and 22 controls) underwent assessment of cognitive impairment (MoCA) and CCM.
Results: Comparing dementia vs MCI vs controls, CNFD (24.33±1.9 vs 25.68±2 vs 32.53±1.8, p=0.008), CNBD (78.1±12.5 vs 92.76±10.1 vs 120.51±10.7, p=0.02) and CNFL (19.92±1.8 vs 21.28±1.4 vs 26.09±1.3, p=0.01) were significantly reduced. Age (74.2±2.4 vs 69.1±1.7 vs 67.9±1.8) p=0.09 and HbA1c (6.49±0.4 vs 6.94±0.4 vs 7.27±0.34%) p=0.4 were comparable between subjects with dementia, MCI and controls, respectively. Furthermore, in a multiple linear regression model adjusted for age and HbA1c, there was a significant association between loss of cognitive ability and CNFD (R2=30.5%, F=6.44, p=0.001), CNBD (R2=28.26%, F=5.78, p=0.002) and CNFL (R2=29.55%, F=6.15, p=0.001).
Conclusion: CCM detects axonal loss and may therefore act as a viable surrogate end point for clinical trials in patients with MCI or dementia.

O-077

Reperfusion therapy and long-term outcomes in patients with ST-elevation myocardial infarction and pre-existing dementia

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Introduction: ST-elevation myocardial infarction (STEMI) patients with dementia were less likely to receive reperfusion procedures than those without mental disorders but the long-term outcomes were inconclusive. In this study, we examined the long-term outcomes of patient with dementia between the groups of with reperfusion and without reperfusion in an incident STEMI cohort from a population-based database.
Methods: Using the data claimed by Taiwan National Health Insurance between 2003 and 2009, incident cases of STEMI with age over 65 years with dementia were identified. We identified 759 eligible patients, 402 with and 357 without reperfusion therapies in the course of hospitalization for STEMI until 2012. Adjusting for age, gender and comorbidities, we used survival analysis for all-cause, cardiovascular (CV), non-CV mortality and hospitalization due to heart failure and analyzed the risk of mortality by stratified the different hospital levels.
Results: Participants had a mean age of 80.3 years (47.8% female). The group without reperfusion was associated with increased risk of long-term all-cause mortality rate (Hazard Ratio (HR) 1.69, p-value <0.001) and CV mortality rate (HR 2.32, p-value <0.001). The risk of CV mortality between without and with reperfusion therapy group was higher in medical center (HR 4.41, 95% CI: 2.21 to 8.77) than regional hospital (HR 3.06, 95% CI: 1.70 to 5.52) and local hospital (HR 1.34, 95% CI: 0.37 to 4.85).
Conclusions: STEMI older patients with dementia who didn't receive reperfusion therapy showed higher mortality risk. In higher hospital level, the benefit of reperfusion therapy was more significant.

O-078

Hippocampal calcifications: Risk factors and association with cognitive functioning

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Background: Hippocampal calcification (HCC) is commonly seen on computed tomography (CT) in people above 50 years old. The etiology and possible association with cognitive functioning is poorly understood. Our aim was to identify risk factors for HCC and to investigate the association of HCC with cognitive functioning.
Methods: Consecutive patients visiting a memory clinic of a Dutch general hospital between April 2009 and April 2015 were identified. All individuals underwent a standard routine diagnostic work up including cognitive tests and a CT scan of the head. Vascular risk factors as hypertension, diabetes mellitus (DM), hyperlipidemia and smoking were assessed. Cognitive screening consisted of the Cambridge Cognitive Examination (CAMCOG), Visual Association Test (VAT) and the Clock Drawing Task (CDT). CT scans were analyzed by presence and severity (absent, mild, moderate or severe) of HCC.
Results: A total of 1991 patients (median age 80 years, inter quartile range 73; 85) were included, of whom 380 (19.1%) had HCC. Increasing age (odds ratio [OR] per year 1.05, 95% confidence interval [CI] 1.03–1.07), DM (OR 1.49, 95% CI 1.12–2.00) and current smoking (OR 1.50, 95% CI 1.05–2.14) were associated with the presence of HCC. No associations were found between presence and severity of HCC and cognitive functioning.
Conclusions: Increasing age, DM and current smoking appear to be associated with an increased risk of HCC. However, there is no evidence from this study that HCC has a role in the multicausal etiology of dementia.

O-080

The relationship between stress, carotenoids and cognitive function in The Irish Longitudinal Study on Ageing (TILDA)

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Introduction: It is well established that psychological stress can adversely affect cognition. Dietary antioxidants have long been associated with health benefits, via a putative reduction in cellular stress. Recently the antioxidant carotenoids lutein and zeaxanthin have been associated with better cognition. Therefore, the study aim was to investigate whether these carotenoids can buffer the negative impact of psychological stress on cognition.
Methods: The sample comprised 3,577 older adults, who were part of The Irish Longitudinal Study on Ageing. Cognitive function was comprehensively assessed at baseline and 4 years later. Stress was

measured using the 4-item Perceived Stress Scale. Blood levels of the carotenoids lutein and zeaxanthin were measured at baseline. Covariates included demographics, education, health conditions, and health behaviours. The effect of stress, carotenoids and their interaction on cognitive function was analysed using mixed-effects regression.
Results: Stress was negatively associated with global and memory scores. There was a positive main effect of zeaxanthin on memory (b=−1.12, $p<0.05$, 95% CI: −2.24, −0.006). There was also a significant effect of the interaction between zeaxanthin and stress on memory scores such that, among individuals with higher stress, those with higher levels of zeaxanthin showed better memory than those with lower zeaxanthin (b=0.32, $p<0.01$, 95% CI: 0.08, 0.55). There was no significant effect of the interaction on the other cognitive domains.
Conclusions: There is limited evidence that antioxidant compounds such as lutein and zeaxanthin may have a protective role in stress-related cognitive dysfunction. More detailed study is warranted.

O-081
The effect of a cognitive stimulation program on institutionalized elderly: a randomized controlled trial

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Introduction: Cognitive stimulation therapy (CST) offers a range of activities, which provide general stimulation for thinking, concentration, and memory, commonly in a social setting. This paper describes the effectiveness of CST on cognition and depressive symptoms in older adults in nursing homes (NHs).
Methods: A randomized controlled trial, carried out in 2016, included 100 residents from five NHs, 75 women and 25 men (randomized into experimental (n=49) and control groups (n=51)). Six participants dropped out (intention to treat (ITT) analysis and per protocol (PP) analysis were performed). During 7 weeks, participants of the experimental group underwent 14 CST sessions, and participants of the control group received usual care. The Mini-Mental State Examination, the Geriatric Depression Scale-15, were administered at baseline and postintervention.
Results: Inferential statistics revealed that CST increased cognition in the experimental group ($p<0.01$; R2 (%) =58.82), although evidence of differences between groups in depressive symptoms was not found ($p>0.05$; R2 (%) =43.4). However, from a clinical point of view, in the experimental group there was evidence of depressive symptoms reduction ($p<0.05$), while there was no evidence reduction in the control group ($p>0.05$).
Conclusions: CST had significantly improved cognition, with a moderate significant correlation, but there was no statistical evidence of its effectiveness on depressive symptoms. These results support the implementation of CST in NHs. Additionally CST may also have an important economic impact by reducing the costs of the impact of elders' cognitive frailty.

O-082
Optimization of antipsychotic drug's prescription through an efficient personalized awareness campaign towards nursing home residents suffering from dementia

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Introduction: Antipsychotics drugs (AP) are commonly used to treat behavioral and psychological symptoms in dementia (BPSD) although their non-negligible adverse effects. Despite several warnings, the prevalence of AP use remains high, particularly in nursing homes (NH).
Aim: Optimizing the AP's prescription of NH residents suffering from dementia, with a personalized awareness campaign to the resident's general practitioner (GP) by the NH practitioner. Study design: Observational prospective multicentric study.
Methods: All permanent NH residents suffering from dementia or cognitive impairment that are treated with AP were included in the study. Each related NH's practitioners were asked to fill up a questionnaire for every resident, based on her/his medical record. Then, the practitioner asked the resident's general practitioner (GP) to reevaluate the need of the AP's prescription after giving information about the benefice/risk of AP in these indications and reminding national warnings about AP's prescriptions in NH.
Results: 30 NH volunteered to participate for a total of 2344 residents. Out of those residents, 24% were under AP regimen, 15% were diagnosed demented and had AP's prescriptions. 317 residents' file were retained; 80,1% of which had an atypical AP's prescription. Most of the residents had a psychotropic drugs coprescription (anxiolytic Benzodiazépines and BZD-like: 43.2%; Antidepressants: 33.1%; Hypnotics: 16.1%). Only 187 files (60%) were completed by the GPs. After the campaign, 44.8% of the AP's prescriptions were modified by the GP (15.5% withdrawal, 19.3% dose modification).
Conclusion: The number of AP's prescription is high in NH residents with dementia and is often associated to other psychotropic drugs prescription. Personalized awareness campaign showed an improvement in optimizing AP's prescription in this population. This has to be confirmed with the follow up of this cohort.

Area: Acute care

O-083
Acute heart failure management and treatment in the elderly: adherence to current guidelines in the real world. Data from the ATHENA Registry

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Introduction: Heart failure (HF) has a high prevalence in the elderly. Aim of our study was to compare adherence to current clinical guidelines in the management of elderly patients hospitalised for acute HF in the settings of care of most frequent management: cardiology, internal medicine and geriatrics.
Methods: Data derived from the ATHENA retrospective observational study which included elderly patients (≥65 years) admitted for acute HF to the emergency department of a tertiary University teaching-hospital and transferred to the above described settings of care in the period 01.12.2014–12.01.2015.
Results: 342 patients composed the study population; 17.8% were hospitalised in cardiology, 17.3% in geriatrics and 64.9% in internal medicine. Mean age was 83.7 years, females were 54.1%. 28.1% of the patients had not performed any echocardiographic evaluation during hospitalization. In 44% of patients, no information regarding body weight measurement was collected during hospitalisation. In patients with HF with reduced ejection fraction prescription rates

for beta-blockers, ACE-inhibitors/angiotensin receptor blockers and mineralocorticoid receptor antagonists were 77.3%, 58.6% and 49.3% respectively, without significant differences across the considered settings of care. A clinical FU at the discharge was scheduled only in 16.0% of the total study population, 70.0% in cardiology, 7.0% in geriatrics and 5.0% in internal medicine; p=0.001).
Conclusions: In elderly patients hospitalised for acute HF a low adherence to current international guidelines recommendations regarding HF management could be observed. This was particularly evident for non-pharmacological strategies that are known to reduce the risk of rehospitalisation.

O-084
Screening for frailty in the Emergency Department: The utility of The SHARE-FI in predicting outcomes in a cohort of older patients

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Introduction: Greater numbers of older patients are accessing hospital services. Specialist geriatric input at presentation may improve outcomes for high risk patients. The Survey of Health, Ageing and Retirement in Europe Frailty Instrument (SHARE-FI) was developed for use in the community but has been shown to be useful in the emergency department (ED). To measure frailty, review its prevalence in older patients presenting to ED and compare characteristics and outcomes of frail patients with their non-frail counterparts.
Methods: Prospective cohort study was carried out with prespecified convenience sampling of those aged ≥70 years presenting to ED on a 24/7 basis, from January-August 2014. Patient characteristics were recorded using symphony® electronic data systems; SHARE-FI assessed frailty. Cognition, delirium and six and twelve month outcomes were reviewed.
Results: Older patients were more likely to die (OR2.34, 95% CI1.30–4.21, p=0.004) and less likely to be alive and at home at twelve months (OR=0.49, 95% CI: 0.23–0.83, p=0.009). Patients with dementia (OR=0.24, p=0.005) and on ≥5 medications (OR=0.37, 95% CI: 0.16–0.87, p=0.022) had a lower likelihood of being alive and at home at twelve months. Frailty was not associated with a significant difference in mortality rates (OR=0.89, 95% CI:0.58–1.38, p=0.614) or being alive and at home at twelve months (OR=1.07, 95% CI: 0.72–1.57, p=0.745).
Conclusions: This study suggests SHARE-FI was an inappropriate screening instrument in ED. It may be more useful to treat all older patients as being at risk of adverse outcomes. New screening tools to assess older patients presenting to hospital are required.

Area: Longevity and prevention

O-085
The obesity paradox: A result of mismeasurement?

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Introduction: In middle aged cohorts, being overweight (BMI 25–29.9) or moderately obese (BMI 30–34.9) is clearly associated with increased mortality, but in later life reduced mortality has been reported. This opposing mortality risk is termed the obesity paradox in older people. We aimed to examine this paradox by assessing the impact of smoking, conditions associated with weight loss, and measurement errors associated with BMI, in very large cohorts.
Methods: We used electronic medical records (from Clinical Practice Research Datalink) for nearly 1 million primary care patients aged ≥60 years, with 14.9 years of follow-up. We also used UK Biobank data, including 500,000 volunteers aged 40 to 69 years, with 8 years of follow-up.
Results: Mean BMI declines progressively for 14 years before death, potentially biasing risk estimates. Mortality is increased for moderately obese patients aged ≥60 years after properly accounting for smoking and conditions associated with weight loss. The risk paradox is explained further by central adiposity not being measured by BMI. Measures combining BMI and waist-to-hip ratio classified patients more accurately: there were major excess risks for mortality and incident cardiovascular disease in overweight or moderately obese but otherwise healthy 60 to 69 year olds.
Conclusions: In later life, people within BMI defined overweight or obesity are at substantially increased risk for mortality and incident cardiovascular disease after accounting for confounding conditions. Calls to amend policies for obesity prevention and to promote healthy ageing are unwarranted.

Area: Metabolism and nutrition

O-086
Associations between dietary intake and resistance exercise with change in body composition and physical function among elderly

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Background: Age related changes in body composition and physical function are important factors in healthy aging. Dietary intake and physical resistance exercise (RE) can affect these changes. The aim of this study was to investigate the associations between dietary intake and resistance exercise with change in body composition and physical function (PF) among elderly Icelanders.
Method: Intervention study with RE for 12 weeks. Participants were community dwelling, aged 65 years and older (60% females). Body composition was measured using DXA. Quadriceps- and grip strength was measured. PF was measured as timed up and go test (TUG) and the 6 minute walk for distance (6MWD). Three day weighed food records were analysed.
Results: On average, all outcome parameters improved significantly after the RE intervention. However, 19% lost lean mass (LM) after the intervention. Where those who lost LM had lower protein intake compared with those who gained LM (80±25 vs. 69±21 g/day, P=0.012 or 0.98±0.27 vs. 0.84±0.24 g/kg body weight, P=0.001), no difference in age, gender, medication or physical activity was found between those who gained LM or lost LM. Participants who did not improved PF had lower energy intake (1656±502 vs. 1870±515 kcal/day, P=0.060)
Conclusion: A many studies have demonstrated the beneficial effect of progressive RE on LM, strength and PF among older adults. However, few studies have looked at association with dietary intake among non-respondents participants. Our study underlines the importance of sufficient energy and protein intake in the maintenance of LM, strength and PF in elderly.

Area: Acute care

O-087
Which are the main precipitating causes of heart failure in elderly patients? Real world evidence from the ATHENA registry

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Introduction: Whilst clinical trials and cardiological clinical registries identify cardiovascular pathologies as the main precipitating cause leading to hospitalisations for Acute Heart Failure (AHF), "real world" administrative data suggest that precipitating causes may be mainly non-cardiovascular. Our purpose was to compare precipitating causes of Heart Failure (HF) in elderly patients hospitalised for AHF in three different, common care settings: cardiology, internal medicine and geriatrics.
Methods: Data derived from ATHENA retrospective observational study which included elderly patients (≥65 years) presenting with a diagnosis of AHF to the emergency department of a tertiary University teaching-hospital and subsequently transferred to the cardiology, internal medicine and geriatric wards in the period 01.12.2014–01.12.2015.
Results: Study population was formed by 342 patients; 17.8% of them were hospitalised on the cardiology ward, 17.3% on the geriatrics ward and 64.9% on internal medicine. Mean age was 83.7 years old, females were 54.1%. Pneumonia was found in 39.7% of the cases and was more prevalent on geriatrics (52.1%) and internal medicine (42.6%) settings compared to the cardiology one (20.0%), P=0.001. Sepsis also had a greater focus in geriatrics (4.2%) and internal medicine (8.1%) than in cardiology (no cases), P=0.001. Acute Coronary Syndrome (ACS) caused hospitalization in 6.2% of individuals, reaching a significantly higher prevalence in cardiology (21.7%) compared to geriatrics (2.1%) and in internal medicine (2.5%), P=0.001.
Conclusions: Precipitating causes of HF in the elderly population hospitalised for AHF are mainly non-cardiovascular, as pneumonia and sepsis, and they seem to be criteria for admission onto different care setting.

Area: Metabolism and nutrition

O-088
Tailored nutritional guidance has positive effect on energy and protein intake of geriatric patients after discharge: a randomized controlled trial

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Introduction: Malnutrition is common among hospitalized older adults and nutritional status may deteriorate during hospital stay. Recovering from acute disease requires good nutritional status and adequate energy and protein intake.
Methods: 24-week randomized, controlled trial was used to investigate effectiveness of tailored nutritional guidance on nutrient intake after discharge among independently living older adults with normal cognition. MNA was used to assess nutritional status and three-day food diaries collected after discharge to assess nutrient intake. Nutritional guidance included at least one home visit with registered dietitian, personalized nutritional care plan, written material and ONSs when needed.
Results: 41 (73% women) older adults, age 76 y (SD 6) were recruited. 61% of all participants were at risk for malnutrition and only 17% reached the recommended protein intake of 1.2g/kg. Mean energy intake increased in the intervention group (I) from 1210 kcal (SD 359) to 1655 kcal (SD 468) and decreased in the control group (C) from 1532 kcal (SD 477) to 1425 kcal (SD 412) ($P<0.05$). Mean protein intake increased from 57 g (SD 19) to 76 g (SD 20) in I and decreased from 75 g (SD 25) to 65 g (SD 22) in C ($P<0.001$).
Conclusions: The risk of malnutrition, poor energy and protein intake are common among geriatric patients after discharge. Tailored nutritional guidance and use of ONSs improve energy and protein intake which are essential when recovering from acute disease.

O-089
Agreement between ESPEN criteria and MNA in the diagnosis of malnutrition in elderly patients with hip fracture

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Introduction: Recently, new malnutrition diagnosis criteria have been proposed by ESPEN (European Society of Clinical Nutrition and Metabolism) in patients with positive nutritional screening. Validation is still advocated. The objective of this study was to describe the agreement of two methods of nutritional assessment: Mini Nutritional Assessment (MNA) and the new ESPEN criteria.
Methods: Patients admitted to the Orthogeriatric Unit above 65 years. During the first 48 hours from admission, a nutritional assessment was carried out: MNA-SF as a screening tool, and when positive, complete version of the MNA and the ESPEN criteria method were applied. A monofrequency Akern® bioimpedance was used to measure the fat free mass index (FFMI). The agreement was determined by Kappa index.
Results: 213 patients were evaluated. 42.7% (91) were at risk of malnutrition. The complete version of the MNA in this subsample showed a malnutrition prevalence of 14.3% – n=13 – (score <17) and 84.6% – n=77 – (when a score <24 was considered). The prevalence of malnutrition with ESPEN criteria was 30.8% – n=28; 14 patients with lost values of FFMI and those from the estimation of weight loss 3 months earlier. Considering a MNA score <17, the kappa index for malnutrition diagnose was 0.207 (p=0.038). When a MNA score <24 was used, the kappa index for malnutrition diagnose was 0.043 (p=0.498).
Conclusions: The two methods evaluating the nutritional status show a poor or very poor agreement in elderly hip fracture patients. To test the value of each method it is mandatory to assess their relationship with disability and clinical events (mortality, length of stay and complications).

Area: Acute care

O-090
HFmrEF in elderly patients: the pathogenetic role of ischemia. Real world data from the ATHENA registry

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Introduction: Recently, the ESC has recognized the presence of an "area" of patients with ejection fraction between 40 and 49% defined as "mid-range" Heart Failure (HFmrEF).
Methods: Data derived from ATHENA retrospective observational study (patients ≥65 years) admitted with diagnosis of AHF (worsening or de novo) to the Emergency department in the period 01.12.2014–01.12.2015.
Results: 246 patients were included: (HFmrEF 19.5%, HFrEF 30.5%, HFpEF 50.0%). HFmrEF and HFpEF shared similar characteristics: mean age 83.8–84.5 versus 79.9 in HFrEF, p<0.001, prevalence of females 41.7%, 67.5% versus 32.0%, p<0.001. History of coronary disease was more frequent in HFmrEF (41.7%) and HFrEF (36.0%) than HFpEF (19.5%), p=0.004, as well as the prevalence of previous PCI (27.1%, 25.3% and 11.5% respectively, p=0.014). Ischemic aetiology was prevalent in HFmrEF (47.9%) and HFrEF (40.0%), while in HFpEF was only 28.5%, p=0.038. Acute coronary syndromes represented (in HFmrEF), was the most frequent precipitating cause (11.6%) and coronary angiography was the procedure most frequently performed in elderly with HFmrEF (12.5%) and in those with HFrEF (22.7%), higher than those reported for patients with HFpEF (6.5%), p=0.004.
Conclusions: These data suggest that ischemia plays a role in the pathogenesis of HFmrEF. Patients with HFmrEF could be a group consisting of a subgroup of patients with HFpEF that have experienced a reduction of ejection fraction and a subgroup of patients with HFrEF that improved part of the LVEF: (HFrecEF, Recovered Ejection Fraction).

Area: Comorbidity and multimorbidity

O-091
Pre-stroke mobility associated with worse outcomes in dementia patients with stroke – data from the Swedish Dementia (SveDem) and Stroke registries

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Stroke is a common cause of morbidity and mortality in patients with dementia. Pre-stroke dementia is associated with worse outcomes, including a higher rate of disability and mortality. Baseline mobility is an important predictor of functioning and mortality after stroke.
Objectives: To assess the role of mobility and dementia as predictors of level of residential assistance, dependency for mobility and mortality in older patients with stroke. Methods: This is a longitudinal cohort study based on SveDem, the Swedish Dementia Registry and Riksstroke, the Swedish Stroke Registry. 1689 patients >65 years old with dementia registered in SveDem and suffering a first stroke between 2007 and 2014 were matched with 7973 non-dementia controls with stroke.
Results: Pre-stroke dependency in activities of daily living and mobility was worse in dementia patients than non-dementia controls. Patients with dementia were more likely to be discharged to nursing homes after a stroke than non-dementia controls (51 vs 20% p<0.001). After the stroke, mortality at three months was higher in dementia patients (31 vs 23% p<0.001) and fewer were living at home without help (21 vs 55%; p<0.001). Patients who moved independently before stroke were more often discharged home (60% vs 28%) and had lower mortality. In adjusted analyses, pre-stroke mobility limitations was associated with higher odds for poorer mobility, needing more residential assistance, and death.
Conclusion: Patients with mobility impairments and/or dementia present a high burden of disability after a stroke. There is a need for research on stroke interventions among these populations.

O-092
Risks of longer term proton pump inhibitor exposure in 228,752 older adults

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Introduction: Proton Pump Inhibitors (PPIs) are commonly prescribed and often continued in older adults, with limited understanding of longer term risks. We aimed to estimate the risk of fragility fractures (FFs), late community acquired pneumonia (CAP), and cardiovascular disease (CVD) in older adults exposed to PPIs for ≥1 year.
Methods: We conducted retrospective cohort analyses in adults over 60 years old using primary care records (CPRD) linked to hospital records (HES). We analysed: i) 86469 patients to estimate the 4-year FF risk; ii) 150100 to estimate the second-year CAP incidence after PPI start; iii) 228752 clopidogrel-free patients to estimate the 4-year CVD (myocardial infarction [MI] and ischaemic stroke [stroke]) risk; and relevant 1:1 age- and gender-matched controls. We used a statistical difference-in-difference methodology (the "Prior Event Rate Ratio" [PERR]) to adjust for measured and unmeasured confounding, as well as traditional propensity-score-adjusted Cox's models.

Results: PPI patients were at greater longer-term risk of: i) Fragility fracture (PERR-adjusted Hazard Ratio [HR]: 1.27, 95% CI: 1.16 to 1.34); ii) Community Acquired Pneumonia (HR=1.82, 1.27 to 2.54); iii) MI (HR=2.11, 1.79 to 2.54) and stroke in aspirin treated patients (HR=1.43, 1.12 to 1.94), with no increased stroke risk without aspirin exposure (HR=1.01, 0.83 to 1.17). Several sensitivity analyses conducted in relevant sub-groups and/or using alternative statistical methods provided consistent results.
Conclusions: These results raise questions about the safety of current widespread prescribing practices of PPIs in older patients.

Area: Organisation of care and gerotechnology

O-093
Benchmarking European Community care delivery on costs and quality of care, a novel approach

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To deliver adequate care in the future to the rapidly ageing population and avoid excessive costs, reform of healthcare systems is necessary. Evidence-based restructuring of systems should build on reliable benchmarks of quality and costs of care, which are lacking. A novel benchmark method on organizational efficiency in community care was developed with the IBenC project.Longitudinal data collection was performed among 2884 community care clients (six countries, 38 organizations) by means of the comprehensive geriatric assessment instrument interRAI-HC. Baseline and six month follow-up assessments were used. The 11-point Independence Quality scale (IQS) and Clinical Balance Quality scale (CBQS) expressed quality, respectively reflecting quality of care aimed at functional independence and engagement, and at functional improvement. Higher scores indicate better quality. Six month cost of care were estimated by valuing resource utilization with Dutch standard costs. Case-mix adjustments were applied.Organizational quality varied between poor to good: IQS scores varied between 2 and 7, CBQS between 4 and 8. Mean adjusted costs were €21.004 (range €14,300-€24,209). Quality and cost outcomes were integrated in the IQS-index and CBQS-index. Index values of 1 indicate average quality against average costs, higher values reflect better organizational efficiency. IQs-index ranged between 0.49 to 1.74 and CBQS-index between 1.00 and 1.66. The indexes had high face-validity compared to the plotted costs and quality and discriminated organizations based on their efficiency. The indexes permit for a novel benchmark approach, opening up possibilities for unexplored areas of research and knowledge in organizational performance and restructuring care systems.

O-094
City4Age: unobtrusive detection of mild cognitive impairment and frailty by harnessing sensor technology and big data sets in smart-cities

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City4Age aims to demonstrate the potential of large datasets obtained from sensing technologies in smart-cities' contexts, to adopt preventing actions for older people [1]. In particular, the challenge is to demonstrate that such datasets can be harnessed to early detect the onset of Mild Cognitive Impairment (MCI) and frailty – ideally before signs and symptoms become evident – and to consequently enact more effective interventions [2]. A fundamental assumption is that current technology allows "unobtrusive" detection, without the need to place significant burden on the monitored person or on her carers [3]. To achieve this goal, City4Age is applying the following approach:- review of established scales, commonly used in geriatrics to measure MCI and frailty onset (e.g. such as the Lawton IADL scale or the Fried Frailty Index) [4] – identification of relevant behaviours implied in such scales (e.g. communication, shopping, use of transportation, cultural/social activities, engagement in physical activities, gait/motility progression, etc.) – review and classification of data types that can be collected through sensors and from smart-cities' datasets, and used to reconstruct the above behaviours and to discover relevant changes that may have predictive value in relation to the inception of MCI/frailty Currently, the Project has successfully completed the above actions and defined a risk model that is, at the same time, easy to understand by geriatricians and technically feasible. Since April 2017 such model is under testing at 6 different Pilot cities (Athens, Birmingham, Lecce, Madrid, Montpellier and Singapore), involving 200 elderly participants, monitored for 6–12 months.
Acknowledgement: The City4Age project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 689731.
References:
[1] Paolini P et al, City4Age: Smart Cities for Health Prevention, IEEE Second International Smart Cities Conference, Trento, September 2016.
[2] Lathia N et al, Smartphones for Large-Scale Behavior Change Interventions, IEEE Pervasive Computing, July 2013.
[3] Rantz MJ et al, Using Sensor Networks to Detect Urinary Tract Infections in Older Adults, IEEE 13th International Conference on e-Health Networking, Applications and Services, June 2011.
[4] Memory Training e Ginnastica Mentale per l'anziano, Monica Bacci, CESI, Roma, 2000.

O-095
Functional status and social support network as risk factors for hospital readmission in Heart Failure

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Introduction: Hospital readmission in chronic heart failure (CHF) is widely recognized as a quality indicator of health care. Sociodemographic factors that supplant the power of medical action, are sometimes neglected in assessing the risk of readmission. The set of social disadvantages surrounding the patient have important implications and should be considered at hospital discharge.
Aim: The aim is to examine the impact of demographic characteristics, functional status and social support network on hospital readmissions for CHF.
Methods: Retrospective study of total admissions at an Internal Medicine Department of a Portuguese hospital, with the main diagnosis of CHF. Data was obtained through the SClinico system and processed by SPSS 24.0® software. The demographic characterization was according to gender and age; functional status according to Katz Scale; social and hospital support network by type of residence, type of support (family/institutional/none) and destination after discharge (with or without referral for external consultation). For hospital readmission were considered hospitalizations with the same diagnosis in the following 12 months.
Results: During one year, 336 admissions with the main diagnosis of CHF were reported, 9.3% of the total hospitalizations.

The readmission rate within 12 months was 49.7%. Among the patients 61.3% were female, with a mean age of 79.9±10 years. The functional status was associated with hospital readmission (X2 (4) =32.3, p≤0.05), unlike gender, age and the social support network. Contrary to expectations, the referral for external consultation was associated with more readmissions (OR=2.47, [1.55–3.94], IC 95%).
Conclusion: Functional status appears to be a major risk factor for hospital readmission in CHF. The recognition of patients' sociodemographic disadvantages allows better continuity of care after discharge. Future research is needed to define sociodemographic indicators and to measure their role on readmission risk.

O-096
Comparing the quality of discharge documentation between specialist elderly care wards and acute medical or surgical wards

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Objectives: We wanted to identify if there were differences in the quality of documentation if a patient was discharged from specialist ageing and complex medicine (ACM) wards in comparison to acute medical or surgical wards (non-ACM).
Methods: Using established national and local guidance, we reviewed the discharge documentation of three ACM wards and three non-ACM wards; a medical admissions unit, a general surgical ward and an orthopaedic ward. Patients aged ≥74 years were included.
Results: 321 records were reviewed. Regarding authorship, 95% of records were written by a team member involved in a patient's care when from an ACM ward in comparison to 84% from general wards. ACM wards performed more highly in documenting the key elements of an inpatient stay; visit summary (98% ACM wards vs. 93% non-ACM wards), investigations (96% vs. 93%), clear list of new diagnoses (69% vs. 57%) and an up-to-date past medical history (65% vs. 38%). If a patient was from a care facility this was documented in 82% of ACM ward summaries compared to 47% of summaries from non-ACM wards. In contrast, discharge documents from non-ACM wards recorded changes to medication regimes with greater accuracy (84%) than those from ACM wards (79%).
Conclusions: Across most domains, discharge summaries from ACM wards were of higher quality when compared to those from non-ACM wards. Standardising the approach to discharge documentation across a variety of inpatient wards will improve continuity of care for our elderly population.

O-097
Robots in care for older people: Opinions of potential end-users

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Introduction: The ENRICHME project - Enabling Robot and assisted living environment for Independent Care and Health Monitoring of the Elderly (Horizon 2020 Programme, No: 643691C), uses a mobile social robot for long-term interaction and monitoring of an older person with MCI, with the aim to optimise their independence. We used focus group discussions to collect opinions about the robot-related requirements of older people, as well as their formal and informal caregivers.
Methods: Six focus groups discussions were analysed: one organised in Italy (composed of older subjects attending a day centre, and health workers of a day centre), four in Poland (two with older volunteers, one with professional, and one with informal caregivers), one in Greece (with older participants); all participants were willing to discuss the issues related to the introduction of a robot.
Results: Six areas of interest were identified:
- overall attitudes towards the robot,
- ethical issues,
- the scope of the robot's functions,
- safety issues,
- doubts about the preparedness of older persons for the robot,
- issues related to the introduction of robots into the lives of the elderly.

In general, the expectations towards the introduction of a social robot were positive.
Conclusions: The use of robots by community-dwelling older persons is generally accepted by all participating groups, especially if the robots' introduction is preceded by efficient pre-training. Ethical and practical issues should be taken into account.

O-098
Predicting hospitalisations and emergence visits: Comparing nine risk scores in care dependent elderly from 6 countries: IBenC Study

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Introduction: We compared the accuracy of nine existing risk scores to predict hospitalisations or emergency department visits among older care dependent home dwelling adults.
Methods: We assessed 2884 persons aged 65 or older, who received professional homecare in six different countries in Europe. Main outcome was the occurrence of hospitalisations or Emergency Department visits within 6 months. Nine existing index risk scores were computed using baseline data: (1) The Changes in Health, End-stage Disease, Signs, and Symptoms Scale (CHESS); (2) Detection of Indicators and Vulnerabilities for Emergency Room Trips (DIVERT); (3) Method of Assigning Priority Levels (MAPLe); (4) Identification Seniors At Risk Primary Care (ISAR PC); (5) Emergency admission risk likelihood index (EARLI); (6) Sherbrooke Postal Questionnaire (SPQ); (7) the Elders Risk Assessment (ERA), (8) Community Assessment Risk Screen (CARS), ad (9) Rockwood's Frailty Index. Their accuracy to predict was expressed in the area under the ROC curve (AUC).
Results: 194 older adults were admitted at the ED and/or hospital ward during the six-month study period. The highest AUC value was found for the DIVERT (AUC=0.70) and CARS (AUC=0.69), followed by EARLI (AUC=0.60), CHESS (AUC=0.58), ERA (AUC=0.63), Frailty Index (AUC=0.54), MAPLE (AUC=0.52), ISAR-PC (AUC=0.49) and SPQ (AUC=0.46). Significantly better AUC values were found in persons without a recent admission at baseline for DIVERT, EARLI and CARS risk scores.
Conclusion: DIVERT and CARS were the most promising risk scores: These may help to target preventive interventions in high-risk groups.

Area: Longevity and prevention

O-099
Long-term effects of the LUCAS health promotion and preventive care intervention (RCT) for senior citizens in the community (LUCAS IV/MINDMAP: HORIZON 2020, research and innovation action 667661)

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Introduction: A health-promotion and preventive-care RCT was performed in initially community-dwelling older people without need of nursing-care between 2001–2002 as part of the Longitudinal Urban Cohort Ageing Study (LUCAS). The Intervention-group (IG) participants had the opportunity to choose between the programmes "small-group-session" at a geriatric centre performed by an interdisciplinary geriatric team giving information on healthy ageing, physical activity, healthy nutrition and social participation [1]; "preventive home visit (PHV)" performed by a nurse trained in geriatrics [2] or no programme. The 1-year (y) follow-up (FU) results showed significantly higher use of preventive-services and better health-behaviour in the IG (n=878) than the control-group (CG; n=1,702). After completion of the 1-y FU, the CG had the opportunity to participate in the small-group-session, too.
Methods: Long-term survival-analyses were performed 12y after 1-y FU. ITT-analyses and in addition, for the subgroup of small-group-session participants On-Treatment-analyses were performed.
Results: ITT-Analysis: In the 1y RCT 503 (62.5%) participants of the IG chose small-group-session, 77 (9.6%) persons chose PHV and 224 (27.9%) persons did not choose any. Mean observation-time accounted 10.3y. 313/878 (35.7%) IG-participants and 674/1,702 (39.6%) of the CG died; HR=0.89 [3]. On-Treatment-Analysis: 768 (IG: 503; CG: 265) small-group-session participants were analysed against 1,335 (IG: 224; CG: 1,111) non-participants. Mean observation-time was 10.9y. 194/768 (25.3%) small-group-session participants and 531/1,335 (39.8%) non-participants died; HR<0.001. The results were confirmed after adjustments.
Conclusions: The small-group-session addresses ROBUST older persons (ca.18.4% of the European population >65y), to strengthen functional competence and reserves to proactively prevent/postpone frailty and/or need of nursing-care.
References:
[1] Dapp etal. J Public Health 2005;13:122–7.
[2] vonRenteln-Kruse etal. Z Gerontol Geriatr 2003;36:378–91.
[3] Neumann et al. J Nutr Health Ageing 2017; inprint.

O-100
Reducing physical restraints in a care home company

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Introduction: Half of Spanish Alzheimer patients have suffered, at some point, the use of physical restraints, especially with people with behavioral symptoms and cognitive impairment, especially those that have symptoms of dementia. Prevalence of restraints for elderly residents with dementia has been reported between 21.5 and 41.2% in different Spanish regionsThe main issue of the study was to demonstrate that the use of physical restraints provides no benefits in the care of people with dementia.
Methods: In 2011 Sanitas Mayores started an ambitious program to reduce physical restraints in all of its 41 care homes. After implementing an All Staff training programme and analyzing a sample of more of 7,657 subjects from care homes showed that the frequency of residents having at least one restraint was reduced from 18.1% to 1.0%.
Results: Beside the use of benzodiacepines was reduced, with no significant changes in mortality. The rate of total falls increased from 13.1% to 16.1% with no significant increase in injurious falls. The group of residents most restrained before the program were people with dementia (29%). There was no significant difference in use of bed rails at both study waves when the total samples were compared (43.5% vs. 41.7%). A global decrease in psychotropic medication prescription was recorded in people who had dementia.
Conclusions: It is safe to reduce physical restraints after a training programme delivered to all staff. The reductions of physical restraints was not accompanied by an increase of psychotropic medications prescription

O-101
Predictors of attrition in a large, long-term exercise randomized controlled trial – The Generation 100 study

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Introduction: Dropout from exercise programs both in the real world and in research is a challenge, but few have examined predictors of attrition in exercise randomized controlled trials (RCTs) conducted in the real world, in the general population and over a longer time period – among older adults. The aim of the present study was to examine attrition prevalence rates and predictors, from baseline to 3-years, in a long-term exercise RCT with older adults.
Methods: Generation 100 is the world's largest RCT (n=1567) in a general older population, examining the effect of exercise on mortality in older adults (70–77 years at baseline). All study participants were randomized to either exercise- or control group for 5 years. Self-reported demographics (e.g. education), general health, specific health conditions (e.g. heart disease, memory loss, psychological distress), smoking and physical activity (PA) were examined at baseline. Cardiorespiratory fitness (CRF) and grip strength were directly measured. Multivariate logistic regression analysis was used to identify predictors of attrition.
Results: The total attrition rate was 14.4% (n=225) after 3-years. Significant predictors of attrition in the exercise group were CRF, level of education ($p<0.01$), memory status and PA level ($p<0.05$), and in the control group CRF ($p<0.01$) and memory status ($p<0.05$).
Conclusions: This is the largest study of predictors of attrition in a long-term exercise RCT on older adults. Our findings provide new and important knowledge about older adults potentially at risk of attrition in long-term exercise RCTs.

O-102
Dietary consumption and self-reported health status in older adults. A cross-sectional study

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Introduction: Little is known about the association between dietary consumption and health status in older adults. We investigated the relationship between them.
Methods: We recruited 1394 community-dwelling older adults in Nagano (highest life expectancy in Japan). Food frequency questionnaire and self-reported health condition (physical condition and depressive mood) were asked all participants. Dietary data covered

13 major food groups: fish, meat, eggs, milk, soybeans products, vegetables, seaweeds, potatoes, fruits, fat or oil, snakes, salty foods, and alcohol. Physical condition contains 5 questionnaires, fall, walking distance, one-leg stand, usage of cane and decline of walking speed. Depressive mood also contains 5 questionnaires such as fulfilment in your daily life, a lack of joy, difficulty in doing what you could do easily before, and tiredness. Chi-square tests and regression analysis were done to investigate the relationship between dietary consumption and health status.
Results: Participants' mean age was 76.3±5.5 years, female were 778 (55.8%). Women consumed meat, soy beans products, potatoes, fruits and snakes frequently compared with men. On the other hand, male consumed salty food and drink alcohol frequently. In men, higher meat consumption was related to long walking distance and less depressive mood. In women, higher soybeans products and vegetable consumption were related to long walking distance and less depressive mood. Logistic regression analysis revealed vegetable consumption was significantly connected to favorable effect on both physical conditions and depressive mood.
Conclusion: In older adults, health status might be improved by daily dietary intake such as meat, soy beans products and vegetables.

O-103
Variation in falling and fall risk among community-dwelling older citizens in 12 European countries

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Introduction: The rate of falling among older citizens appears to vary across different countries, but the underlying aspects causing this variation are unexplained. We aim to describe between-country variation in falling and explore whether intrinsic fall risk factors can explain possible variation.
Methods: This was a prospective study of Survey of Health, Ageing and Retirement in Europe (SHARE) data in twelve European countries among community-dwelling persons aged ≥65 years (N=18,596). Socio-demographic factors (age, gender, education level and living situation) and intrinsic fall risk factors (less than good self-rated health (SRH), mobility limitations, limitations with activities of daily living (ADL), dizziness, impaired vision, depression and impaired cognition) were assessed in a baseline interview. Falling was assessed 2-years later by asking whether the participant had fallen within the 6 months prior to the follow-up interview.
Results: There was between-country variation in the rate of falling. The prevalence of intrinsic fall risk factors varied 2–4 fold between countries. Associations between factors age ≥80 years, less than good SRH, mobility limitations, ADL limitations, dizziness and depression, and falling were different between countries ($p<0.05$). Between-country differences in falling largely persisted after adjusting for socio-demographic differences but strongly attenuated after adjusting for differences in intrinsic fall risk factors.
Conclusion: There is considerable variation in the rate of falling between European countries, which can largely be explained by between-country variation in the prevalence of intrinsic fall risk factors. These findings emphasize the importance of addressing intrinsic fall risk in (inter)national fall-prevention strategies, while highlighting country-specific priorities.

Area: Oral and dental health

O-104
Oral pain and discomfort in community-dwelling older people – a randomised 2-year intervention study

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Introduction: Oral pain or discomfort can cause problems in eating, speaking and swallowing affecting the quality of everyday life. The aim of this study was to examine the effect of oral health intervention on the self-reported oral pain or discomfort among community-dwelling people aged 75 years or older over a 2-year period.
Methods: The study was based on subpopulation in Geriatric Multidisciplinary Strategy for Good Care of Elderly People (GeMS) study (2004–2007). In this 2-year randomised intervention study, 279 community-dwelling old people completed the study, 145 person in the intervention group and 134 in the control group. Oral health intervention included individually tailored instructions for oral and/or denture hygiene and healthy oral habits. Oral pain and discomfort were asked by the dentist at the baseline and after one year and two years. Both groups also had the possibility to get basic dental treatment during the study.
Results: In the intervention group, at the baseline 31% (n=45) and at the end 21% (n=30) reported oral pain or discomfort. In the control group, the corresponding figures were 22% (n=30) and 18% (n=24). In the intervention group the main reasons at the beginning of the study were problems with removable dentures (n=16), teeth (n=13) or mucosa/tongue (n=13) and after two years problems with teeth (n=11), removable dentures (n=9) or mucosa (n=5).
Conclusions: Despite the preventive intervention and dental treatment, every fifth of the participants had oral pain or discomfort. The management of oral pain in old people is challenging, a multifactorial treatment approach is often needed.

Area: Infectious diseases and vaccines

O-105
Procalcitonin to individualize antibiotic therapy duration in hospitalized pneumonia in very old population

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Background: Procalcitonin (PCT) may help Physician to reduce duration of antibiotic therapy (ATBt) in pneumonia in adult. However, there was no specific study older population. We performed a Randomized Clinical Trial assessing if PCT serial measurements reduces antibiotic duration in pneumonia (community or nosocomial) in older patients.
Methods: Inclusion criteria were: >80 years old, ATbt <3 days for pneumonia, and had a PCT measurement. After inclusion, PCT was measured every 2 days in both groups (from Day 2 to the end of treatment or discharge). In the PCT group, physician could use PCT levels to stop ATBt according a PCT algorithm, (stop ATBt if PCT <0.25 ng/l and pursues if PCT >0.25 ng/l). Demographic, clinical and geriatric characteristics, and, severity of pneumonia (pneumonia severity index (PSI), CURB 65) at baseline and every 2 days were collected. Diagnosis was confirmed by reviewed Chest

X ray or/and CT Scan. ATBt duration without outcome differences (Day 45) was the first end point.
Results: Final analysis includes 107 pneumonia (57 in control group, 50 in PCT group). All characteristics of patients and severity of pneumonia weren't significantly different; In control group, 86% had a CURB 65 of 2 or 3 and 84% had PSI class IV or V; in PCT group 86% had a CURB 65 of 2 or 3 and 78% had PSI was class IV or V; PCT levels were not significantly different in between both group; Antibiotic duration was significantly shorter in PCT group (8. 4 days ±3.1) than in control group (10.7 days ±3.6) ($p<0.001$). with a good outcome in both groups (>85%). Algorithm was followed for only 52% of PCT group.
Conclusion: PCT algorithm is useful to individualize the duration of ATBt for pneumonia in very old without any impact on outcome and leads to decrease ATBt duration. Further studies need to measure the impact of the limitation of antibiotic use at individual and collective level in this special population.

Area: Pre and post operative care

O-106
Baseline characteristics and clinical outcomes of older surgical persons admitted to a tertiary hospital. Proactive care of older people admitted to General surgery-Salford General Surgery (POPS-GS)

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Introduction: We describe the characteristics of older people admitted to general surgical wards reviewed by an elderly care in-reach service.
Methods: Prospective non-randomised study of consecutive patients >74 years of age requiring admission to general surgery.
Results: Between 08/09/2014 and 28/02/2017 we reviewed 719 consecutive patients, age 81.4±4.6, 55.2% females, 577 emergency (Em) and 142 elective (El). 36% underwent surgery (Em 135- 23.3% El 124- 87.3%), 15.4% non-surgical procedure (Em 102- 17.7% El 9- 6.3%) and 48.5% medical management (Em 340- 58.9% El 9- 6.3%). Most common diagnoses: biliary disease in emergency (22.4%) and cancer in elective admissions (70.4%). There were differences in emergency vs elective regarding independence for basic (78.6% vs 98.6%) and instrumental (52.8% vs 88%) ADLs, mobility with no aids/cane (69.2% vs 92.3%), absence of cognitive impairment (81.3% vs 95.8%), ASA I-II (35.7% vs 51.4%), average medications (8.4 vs 6.2) and comorbidities (5.5 vs 4.6). No differences in individual comorbidities except in emergency patients who suffered more ischemic heart disease (30.2 vs 19), stroke (15.9 vs 7.7) and dementia (12 vs 0.7). Median length of stay was 9 days (8 Em, 10 El); in hospital mortality 5.9% 43/719 (2.1% Em, 6.9% El), 30-day mortality from admission 7.3% 53/719 (Em 8.8%, El 1.4) and 30-day readmission rate 8.8% 60/676 (Em 9.9%, 4.3% El).
Conclusions: Older persons admitted to surgery are multimorbid and take multiple medications. Biliary disease and cancer are the commonest diagnoses. 50% are managed non-invasively. Individuals admitted electively are significantly less complex and experience significantly better clinical outcomes.

Area: Infectious diseases and vaccines

O-107
Elderly patients (>75yo) with infective endocarditis: geriatric, therapeutic and prognostic characteristics before, through and 3 months after the infection course. (Elderl-IE)

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Introduction: 1/3 patient with infective endocarditis (IE) is >75 yo in Western countries with specific features and prognosis, but geriatric characteristics are poorly known. Our aim was to describe geriatric assessment through the infective endocarditis (IE) course and its impact on 3-month prognosis.
Methods: Comprehensive geriatric assessment was performed during the first week after diagnosis of IE (D0) and at 3 months follow-up (M3) over one year in 14 French hospitals.
Results: Prior IE, among the 111 pts (83.1±5.1 yrs, 53% men) included, most patiens lived at home (88%) with a low CIRS-G score (14.1±6.9) and subnormal ADLs (5.1±1.7). At diagnosis (D0), functional status decreased (ADLs 3.2±2.1) with a cognitive (MMSE 20.2±7.2) and nutritional (MNA<17 in 40%) impairment. Intracardiac devices were frequent (valvular prosthesis 31%, PM 22%). Digestive bacteria and Staphylococcus aureus were the most prevalent pathogens. Surgery was indicated in 36 patients (32%) but performed only in 18. Operated patients were more fit: CIRS-G 9.2±4.3 vs 15.2±7, $p<0.001$ and MNA 20.9±4.8 vs 17.4±5.9, p=0.03 than others. At M3, 29 patients were dead (27%) and 27 did not attend the visit (24%). The 55 assessed patients recovered and autonomy was almost back at the initial level (ADLs 4.7±1.8), 80% were back at home. Low ADLs (HR 0.7 (0.5–0.9), p=0.002) and MNA score (HR 0.9 (0.8–1.0), p=0.006) at D0 were associated with a poorer prognosis.
Conclusions: Nutritional and functional impairment are frequent at admission in elderly patients with IE. They are associated with a less aggressive management and a poorer prognosis.

O-108
Management of elderly patients with Clostridium difficile infections: Observational data of the French survey CLOdi

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Introduction: Incidence of Clostridium difficile infections (CDI) is high in hospitalized elderly patients, estimated at 2.28 cases/10,000 day-patients. Risk of recurrence is reported between 10 and 30% at 3 months, and CDI-related mortality varies from 5 to 40%. The main objective of the French survey CLOdi, is to assess prognosis of elderly patients with CDI. We report observational data collected during hospitalization and therapeutic regimen regarding to the European recommendations, published in 2013.
Methods: Prospective observational multicentric study, supported by the French Societies of Geriatrics and Infectious Diseases. From march 2016 to march 2017, patients aged ≥75 presenting with CDI were included in 31 french hospital centers. An online survey focused on clinical criteria of severity, and CDI therapeutic support. A systematic follow-up was performed to report recurrences.
Results: One hundred and eighty-two patients were included with 74% of CDI cases that were nosocomial. Overall 144 (79%) patients presented with at least one severity criteria. CDI episods were treated with metronidazole, vancomycin and fidaxomicin, respectively in 55%, 30% and 15% of patients. Less than half of the patients were treated with the appropriate regimen according to the European recommendations. Thirty-one patients (17%) died during the acute infectious episode and the rate of CDI recurrence was up to 11%.
Discussion: This is the first national survey focusing on CDI in very elderly patients. Rate of recurrence and mortality are close to literature data. Still our results highlight the lacks of knowledge or of adequacy of therapeutic regimen to the guidelines.

O-109
Pertussis incidence in older individuals: Results from the French EPICOQSEN study

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Introduction: In France, vaccination against Bordetella pertussis is recommended in children and young adult (cocooning strategy) but not for people aged 50 years and over (50+). As the duration of protection is limited following vaccination, the 50+ may be infected and participate in the spread of the disease. The aim of this survey was to assess the incidence of B. pertussis (whooping cough) in 50+ in France.
Methods: Between June 2013 and August 2014, participating general practitioners (GPs) using management software Axisanté® were to include all volunteer 50+ patients suffering from a cough lasting 7 to 21 days. Final diagnosis of whooping cough was based on polymerase chain reaction (PCR) (nasopharyngal samples) or on clinical or epidemiological definition. Crude incidence rates were calculated and then extrapolated to France.
Results: 42 GPs included 129 patients (large towns: 38; medium-sized towns; 57, rural areas: 34); 106 samples were collected for analysis. Overall, 30 pertussis cases were diagnosed; 10 were confirmed by PCR and 20 based on clinical and/or epidemiological definitions. Crude incidence rate was 103.6 [95% confidence interval (CI): 69.9–147.9]/100'000 patients (50+) and extrapolated incidence rate was 187.1 [126.2–267.1]; the lowest incidences (77.1 and 131.1, respectively) were observed in large towns.
Conclusions: According to these results, older individuals (50+) may play a role in B. pertussis circulation in France. As whooping cough may be severe in the older population, booster dose of vaccine in 50+ should be discussed. Similar studies are required to elaborate adapted vaccine programs in adult.

O-110
Antibiotic resistance of Escherichia coli in 312 non-hospitalised nursing home acquired urinary tract infection

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Introduction: Urinary tract infection is one the major infection in Nursing home (NH) leading to overuse of antibiotic. The risk of emerging resistance leads to use inappropriate empirical therapy in a high-risk population. E coli is the main bacteria responsible for UTI and bacteraemia and takes part of Intestinal flora in older population. Yet we believe that antibiotic susceptibility of E coli may represent an overview of ATBic susceptibility in NH. The aim of this study was then to analyse ATBic resistance of Escherichia coli in urine culture collected in 14 NH of the same French area.
Methods: Between 2014 and 2015, we retrospectively selected from a community private laboratory all positive urine cultures for E. coli performed in 14 NH because of UTI suspicion. All usual antibiotics were tested.
Results: 312 Positive urines cultures were analysed. Antibiotic resistances were as follow: amoxicillin 52%, amoxicillin+ clavulanate 34%, ciprofloxacine 18%, ceftriaxone 11,8%, cefexime 14,1% and below 5% for penems, gentmamycin, Furan and fosfomycin; there was no difference in between NH.
Discussion and conclusion: Regarding the high level of resistance Amoxciclin, coamoxiclav can no longer be used as empirical treatment; of concern, resistance to 3rd cephalosporin generation, becoming higher than at the university Hospital of the area. This suggests that NH may act as a reservoir of multidrug resistance bacteria; Yet, the surveillance of the resistance is critical in NH to better guide the empirical therapy.

Area: Pre and post operative care

O-111
Total transfusion requirements in hip fracture patients from emergency department to geriatrics: retrospective validation of a restrictive regimen. The UPOG-TRF1 study

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Introduction: In the elderly, management of anaemia and blood transfusion is still a matter of debate in hip fracture (HF). According to the FOCUS study (2011), we evaluated the association between restrictive transfusion strategy and cardiovascular complications during hospitalizations for hip fracture in a dedicated unit of perioperative geriatric care (UPOG).
Material and methods: All patients >70 years old admitted for HF to our emergency department were included in our time series analysis study. Patients with multiple, metastatic or periprosthetic fractures were excluded. We used a liberal strategy (LS) (Goal: hb level ≥10 g.dL-1) from July 2009 (the opening of UPOG) until December 2011 and a restrictive strategy (RS) (Goal Hb level ≥8 g.dL-1 or transfusions according to symptoms) from January 2012 until June 2016. The primary endpoint was in-hospital acute cardio-

vascular complications (acute heart failure (AHF), acute coronary syndrome (ACS), acute atrial fibrillation (AF) or stroke). Secondary endpoints were in-hospital 6-month mortality rate, transfusions and infections.
Results: 667 patients were included: 193 in the LS group, 474 in the RS group. The change of transfusion regimen for a RS was associated with a reduction in acute cardiovascular complications (21 vs 34%, $p<0.01$), including AHF (10 vs 19%, $p<0.01$) and ACS (8 vs 17%, $p<0.01$), and a UPOG transfusion reduction (31 vs 50%, $p<0.01$).
Conclusion: In elderly patients with consecutive hip fracture, a change to restrictive strategy of transfusion is associated with fewer cardiovascular complications and transfusion with no effect on in-hospital and long-term mortality

Area: Geriatrics in organ disease

O-112
Analysis of a national dataset: Single kidney transplant outcomes in recipients over 65

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Introduction and aims: It is well established that patients with end-stage kidney failure that receive kidney transplants have huge improvements in life expectancy compared with the alternative treatment of dialysis. However, the risks versus benefits of kidney transplantation become less clear with increasing age. With our aging population and many patients in their 70's and 80's are receiving transplants yet they are often excluded from clinical research trials. Therefore, I intend to look at the current practice of transplantation in elderly patients in the UK and determine how recipient age affects clinical outcomes in the contemporary era of transplantation practise. Results from this study will hopefully aid decision making into the optimal allocation of these precious resources.
Method: This nationwide population cohort analysis used the NHS Blood and Transplant Registry dataset for all deceased donor single kidney transplants to adults aged 18 and over performed in the UK between 2003 to 2015. We originally stratified cases into recipients aged 18–40, 41–59, and 60 and older and then undertook further subgroup analysis focusing on patients over 60, using the following age bands ($1\leq59$, 2=60–65, 3=66–70, 4=71–75, 5=$76>$). Patient and graft survival outcomes were assessed using Kaplan Meier curves and Cox regression models, while delayed graft function (DGF) was assessed using binary logistic regression.
Results: There were 18,769 transplants in our study cohort, with the median age for recipients 48, and age groups were as follows; 40 and under (n=4712), 41–59 (n=8968), and 60 and over (n=5055). In unadjusted analyses, graft survival differed significantly across the age groups ($p<0.001$). Cox regression analysis showed graft survival was significantly better for the age group 41–59 years (Hazard Ratio [HR]: 0.793, $p<0.001$) compared with the over 60's group. However, there was no significant difference between graft survival of the over 60's compared to the under 40's [HR=0.984, p=0.755]. Patient survival between the three groups confirmed reduced patient survival with HR 0.143 ($p<0.001$) and HR 0.353 ($p<0.001$) for the ages under 40's and 41–59 respectively. Delayed graft function varied significantly between the age groups (40 and under, 23.4%; 41–59, 28.1%; 60 and over, 33.1%, $p<0.001$). Mean creatinine among surviving kidneys was higher in the 60 and over groups (142 mmol/l) versus the 41–59 group (139 mmol/l) and 40 and under (138 mmol/l) ($p<0.001$). Further stratification of age groups 60–65 (n=2396), 66–70 (n=1496), 71–75 (n=679), and >75 (n=148) showed worse outcomes for creatinine, delayed graft function, graft and patient survival for the over 75 groups compared to other "older" adults.
Conclusion: Even in the contemporary era, increasing recipient age remains a predictor of inferior clinical outcomes graft survival, adding a layer of complexity into the decision of how best to allocate such scarce resources. In the literature, there is much heterogeneity in defining at the elderly and therefore we lack clear guidelines on risk of kidney transplantation stratified by recipient age. In our analysis, we highlight this difficulty by showing the gradual stepwise decrease in graft survival and the unusual pattern of delayed graft function amongst the 60 and over group. Therefore, we recommend further research into clinical outcomes among the 60 and over group and consideration should be given for targeted research for age-adapted immunosuppression to optimise outcomes for older kidney transplant recipients.

O-113
IGF-1 pathway in the regulation of Nox4 ROS production in chondrocytes: Osteoarthritis physiopathology

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Introduction: Osteoarthritis (OA) is characterized by a cartilage dysregulation, a degenerescence of the chondrocytes with oxidative stress (OS) involvement. Nox 4 isoform dependent reactive oxygen species (ROS) production is one of the triggers for the matrix metalloproteases (MMPs) synthesis and extracellular matrix (ECM) degradation. IL-1β could induce OA conditions. Insulin-like Growth Factor-1 (IGF-1) is another key regulator in human articular chondrocytes. The main objective of the study was to assess IGF-1 stimulation on MMPs synthesis in chondrocytes immortalized cell line C-20/A4.
Methods: We used human C-20/A4 chondrocyte cell line. Nox4 overexpression was performed with retrovirus (RV) Nox4. Rv Nox4 C-20/A4 stimulation was performed using IL1-b 20ng/ml or IGF-1 200ng/ml. Quantitative RT-PCR was used to assess MMP 1, 9, 13, Nox 4 expression level.
Results: Human IL-1β stimulation induced MMP-1 -13 and -9 mRNA rate elevation. IGF-1 cell stimulation induced MMP-9 peak at 4 hours and an increase of MMP-13 mRNA level sevenfold at 24 hours. The effect seemed to be Nox4 dependent.
Conclusions: We showed for the first time that IL-1β induced MMP-9 by a Nox 4 dependent pathway. High concentrations IGF-1 induced MMP-9 and MMP-13 mRNA synthesis, trigger of catabolism. IGF-1 pathway is interesting since Klotho anti-ageing protein has at least two ways to participate in OA pathway. Klotho is known to inhibit Insulin/IGF-1 pathway and to enhance cellular protection against OS by inducing transcription of anti oxidant enzyme as Mn Superoxide dismutase. Klotho could be a protein of interest for future OA treatment.

O-114
Analyzing kidney impairment in the elderly

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Introduction: Chronic Kidney Disease (CKD) is a disease with a high prevalence in people over 65 years old. It's 23.6% in Spain, 35.7% in Canada, 35.8% in Finland and 23.4% in the USA [1,2]. The most widely accepted method for measuring renal function is glomerular filtration (GFR), for which different formulas have been developed (MDRW, CKD-EPI, Cockroft Gault (C-G), BIS1), although none have been validated in a population older than 70 years or overestimate the true glomerular filtration rate in subjects over 65 years. In 2011 was created a new formula, called HUGE formula (hematocrit, urea and gender). It will help to assure if the GFR is reduced below 60

ml/min, is due to a physiological process associated with aging or due true CKD [3].
Objectives: To evaluate the sensitivity (S) and specificity (E) of the different formulas (MDRW, CKD-EPI, CG, BIS1) to diagnose CKD. Evaluate if the HUGE formula has predictive value in people over 90 years.
Methods: Prospective longitudinal cohort study. Study the characteristics of patients over 90 years seen in the out patient clinic between 2015 and 2016 in Huesca. Also Socio-demographic data, comorbidity, analytical results and drugs were recorded. All collected data was analyzed with Statistical analysis SPSS 23.
Results: A total: 288 patients with age: 94.5±2.4 years, 69.8% were female, survival in first year of 81.3%. Comorbidities: HTA 78.5%, DM 29.2%, dyslipidemia 45%, anemia 35.7%. We evaluated (S) and (E) of each formula twice during the study: At the beginning of the study, comparing all the formulas against the CKD-EPI obtaining: MDRW4: S: 77.3% and E: 100%. C- G: S: 100% and E: 10.7%. BIS1: S: 100% and E: 20.4%. Throughout the follow-up year, comparing all the formulas against the CKD-EPI from the beginning of the study obtaining; MDRW4: S: 82.9% and E: 93.5% and CKD-EPI: S: 95.9% and E: 74.2%. According to the HUGE formula of patients with GF below <60 ml/min (48.6%) had a physiological deterioration associated with aging. CKD identified by HUGE formula was associated with higher mortality at one year (p=0.003).
Conclusions: It is confirmed that despite different and new formulas for estimating glomerular filtration rate, CKD-EPI continues to be the most sensitive and specific even in older patients.Current available formulas can overestimate the diagnosis of CKD, so it is advisable to apply the HUGE formula in a complementary way, which also gives us prognostic value.
References:
[1] Otero A, Francisco ALM De, Gayoso P, García F, Study E. Prevalence of chronic renal disease in Spain: Results of the EPIRCE study. Rev Soc Española Nefrol. 2010;30(1):78–86.
[2] Martín De Francisco A., Piñera C, Gago M, Ruiz J, Robledo C, Arias M. Epidemiología de la enfermedad renal crónica en pacientes no nefrológicos. SEN. 2009;29:101–5.
[3] Heras M, Fernández-Reyesa M. Nuevas herramientas para abordar la función renal en ancianos: la ecuación Berlin Initiative Study y la fórmula hematocrito, urea y género. Med Clin (Barc). SEGO; 2016;146(10):450–4.

O-116
Low diastolic blood pressure increases risk of cardiovascular events in the vascular frail

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Background: In older age, a low diastolic blood pressure (DBP) has been associated with increased risk of cardiovascular events, especially in frail older people. A potential mechanism might be that low DBP leads to inadequate perfusion of vital organs due to a 'frail' vascular system. Here, we tested the hypothesis that low DBP is associated with a high risk of cardiovascular events in people with a previous history of cardiovascular disease, as a proxy of vascular frailty.
Methods: 5,804 participants (mean age 75 years) from the PROspective Study of Pravastatin in the Elderly at Risk (PROSPER) who as part of the trial were intensively monitored for an average period of 3.2 years. Baseline DBP was categorized in low (<70 mmHg), normal (70–90 mmHg) or high (>90 mmHg). Cox proportional hazards analyses were used to estimate hazard ratio (HR) with 95% confidence intervals (CI) for the association of DBP with cardiovascular events. Analyses were stratified for cardiovascular history.
Results: Participants with low DBP had an 1.24-fold (1.04; 1.49) increased risk of cardiovascular events compared to those with normal DBP. After further adjusting for cardiovascular factors, this association attenuated to 1.05 (0.86; 1.28). A previous history of cardiovascular disease significantly modified the relation between DBP and risk of cardiovascular events (p-interaction = 0.042). In participants without a history of cardiovascular disease, DBP was marginally significant associated with a increased event risk (HR (95%) per 10 mmHg increase in DBP 1.08 (0.99; 1.18), p-value = 0.07), whereas in participants with a history of cardiovascular disease higher DBP was associated with a decreased risk of cardiovascular events (HR (95%) per 10 mmHg increase in DBP 0.92 (0.85; 0.99, p-value = 0.018). These risk estimates were independent of potential confounders, including classical cardiovascular risk factors.
Conclusion: The association of DBP with cardiovascular events in older people varies upon their previous history, showing that in participants who are vascular frail (pre-existing cardiovascular diseases) lower DBP associates with an increased risk of future cardiovascular events.

Area: Urology and continence management

O-117
Recurrent urinary retention: 6 months follow-up of elderly patients who benefited an alternative treatment to the indwelling catheter after a multidisciplinary team board

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Introduction: The indwelling urinary catheter (IUC) is over used on the elderly. The aim is to analyze the success rate of alternative treatments (AT) to the IUC at 6 months follow up.
Methods: A standardized multidisciplinary team board was established to screen patients, over 70y, who can benefit from an alternative treatment option to IUC, using comprehensive geriatric assessment. We evaluated success of AT (defined by the lack of urinary retention at 7 days, 1, 3 and 6 months) and overall death rates.
Results: Sixty-one patients were enrolled with a mean age of 87y (women: 42.6%). Alternative technics were offered to 62% (n=38), including 23 catheter withdrawals, 7 thermo-expandable intra-prostatic stents, 8 prostatic photovaporizations. Overall, the success rate was 92.1% at 7 days and raised up to 100% at 1, 3 and 6-month follow-up. The IUC group patients were significantly older (89.3 vs 85.3y, p=0.021), very dependent (ADL <2, 78.3% vs 39.5%, p=0.03) and with neurologic comorbidities (78.3% vs 52.6%, p=0.045). The global rate of death of the cohort were at 1, 3 and 6 months: 6.6% (n=4), 21.3% (n=13), 36% (n=22). At 6 months, the rate of death in the IUC group was higher (65% vs 18.4%, p=0.01). In univariate analyzes, predictive factors of a 6-months death were neurologic comorbidities (HR: 4,3 [1.2–14.9], p=0.023), a dependence (ADL<2) (HR: 4.9 [1.5–16]) and the IUC (HR: 5.5 [1.8–17], p=0.003). In multivariate analyzes, the factors were a dependence (ADL<2) (HR: 3.9 [1.1–13.4], p=0.034) and the IUC (HR: 4.4 [1.4–14.5], p=0.014).
Conclusion: The multidisciplinary analysis may offer a better chance to deal with IUC in elderly people with a steady global success rate of 62% catheter withdrawals at 6 months. The elevated rate of death in IUC group highlight the frailty of dependent patients and data is needed to report the relation with IUC.

Late Breaking Abstracts – Oral presentations

LB-001
Genetic variants associated with physical performance and anthropometry in old age: a genome-wide association study in the *ilSIRENTE* cohort

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Background: Unraveling the complexity of aging is crucial for understanding its mechanisms and why aging is the risk factor for most chronic conditions. The advancements marked by genome-wide association studies (GWASs) have sparked interest in gene cataloguing in the context of aging and age-related conditions. Here, we used GWAS to explore whether single nucleotide polymorphisms (SNPs) were associated with functional and anthropometric parameters in a cohort of old community-dwellers enrolled in the *ilSIRENTE* aging study.
Methods: Analyses were carried out in men and women aged 80+ years enrolled in the *ilSIRENTE* Study (n=286) and replicated in the *inCHIANTI* Study (n=1055). Genotyping was accomplished on Infinium Human610-QUAD version 1.
Results: In the *ilSIRENTE* population, genetic variants in ZNF295 and C2CD2 (rs928874 and rs1788355) on chromosome 21q22.3, were significantly associated with the 4-meter gait speed (rs928874, $p=5.61\times10^{-8}$; rs1788355, $p=5.73\times10^{-8}$). This association was not replicated in the *inCHIANTI* population.
Conclusions: Our findings suggest that specific SNPs may be associated with a key measure of physical performance in older adults. GWASs using larger samples are needed to confirm these preliminary results to enhance our comprehension of complex age-associated phenomena.

LB-002
MtDNA content and MtDNA deletion mutation abundance in skeletal muscle of sedentary high- and low-functioning elderly individuals

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Introduction: Mitochondrial dysfunction in skeletal myocytes has been proposed as a major factor contributing to the development and progression of sarcopenia. Hence, the quantitation of mitochondrial DNA (mtDNA) abundance and mtDNA deletion mutation load may help clarify the role of mtDNA instability in muscle aging.
Methods: We applied real-time PCR-based approaches to total DNA purified in muscle samples obtained from young adults, sedentary older adults, classified as high- and low-functioning based on the Short Physical Performance Battery (SPPB), in order to examine the effect of aging on key quantitative alterations of mtDNA and how this relates to physical performance.
Results: Muscle volume, as quantified via 3D-NMR, was decreased by 38% and 30% in low- (LFE) and high-functioning elderly (LFE) participants, respectively when compared to young and high-functioning elderly participants, respectively, and positively correlated with physical performance. The content of mtDNA was found to be significantly reduced in both groups of elderly participants, regardless of the SPPB score, relative to their younger counterparts. The age-associated decrease in mtDNA abundance was paralleled by an increase in the mtDNA deletion in HFE and LFE participants, with no differences between the two groups. Further investigations will probe alterations in mtDNA encoding genes: NADH dehydrogenase 1 (ND1/Complex 1), Cytochrome b (Complex III), and cytochrome c oxidase (COI/Complex IV).
Conclusion: This study shows altered mitochondrial homeostasis in muscles of aged human. The decline in myocyte mitochondrial mass and the accumulation of mtDNA deletions may therefore represent critical steps to muscle aging and possible targets for interventions against sarcopenia.

LB-003
A study of executive function (EF) and prospective fall risk in community-dwelling older adults

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Background: Recent findings suggest that older people with executive function (EF) impairment have an increased fall risk. Prospective evidence with prolonged follow-up is however lacking.
Objective: To examine 1) whether EF impairment at baseline predicts falls at 6-year follow-up; and 2) whether a dose-response relationship exists between EF impairment and falls at 6-year follow-up.
Methods: Community-dwelling older adults (N=906, mean age 69±1.4, women 59.8%) were followed between 2005 and 2011. Measures of EF at baseline: clock drawing test (CDT), verbal fluency (VF), TMT-A, -B, and ratio (TMT B-A/A). Falls were collected prospectively in 2011using monthly calendars.
Results: At baseline, 5.5% were cognitively impaired (MMSE≤24), 17.9% had abnormal CDT (score≤7). In 2011, 13% fell one time without injury and an additional 20.2% had multiple or injurious falls. Baseline cognitive profiles of non-fallers and multiple/injurious fallers were similar. In multivariable analysis, poor EF at baseline was significantly associated with reporting one non-injurious fall ($RR_{\text{worst quintile TMTB}}$ = 0.38, 95% CI: 0.19–0.77, p=0.007; $RR_{\text{worst quintile ratio TMT B-A/A}}$ = 0.33, 95% CI: 0.16–0.67, p=0.002). There was no significant association between poor EF and multiple/injurious falls, showing no dose-response relationship. In subgroup analysis among fallers, poor EF was associated with recurrent or injurious falls ($OR_{\text{worst quintile of TMT B}}$ = 1.86, 95% CI: 0.98–3.53, p=0.059; ($OR_{\text{worst quintile ratio TMT B-A/A}}$ = 1.84, 95% CI: 0.98–3.43, p=0.057).
Conclusions: Among fallers, EF impairment at baseline predicted recurrent or injurious falls. Further investigations will examine whether decline in EF increases fall risk during follow-up.

LB-004

Incidence and cost of medication-related harm in older adults following hospital discharge in the UK: Results from the PRIME study

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Introduction: Medication-related harm (MRH) is the most common adverse event following hospital discharge [1]. We sought to determine the incidence of MRH post-discharge in a population of older adults in the UK and associated cost of National Health Service (NHS) utilisation.

Methods: The study methods have been published [2]. Patients 65 years and above were recruited at the point of discharge following an acute admission from 5 teaching hospitals in South-England between September 2013 and November 2015. Patients were followed-up by research pharmacists for 8 weeks to determine whether they experienced MRH through 3 sources; hospital readmission, patient/carer telephone interview and GP records. MRH was defined as harm from adverse drug reactions or non-adherence. National Health Service (NHS) utilisation associated with MRH was recorded and costed using national NHS tariffs, and extrapolated using national hospital admissions data.

Results: Data from 1116 patients were analysed, median age 81.9 years (IQR, 75.5–86.9), and 58.4% female. The median discharge medicines per patient was 9 (IQR, 7–12). Four hundred and thirteen (37.0%) patients experienced MRH in the 8-weeks follow-up period, of which 51.9% was potentially avoidable. The most common MRH events were gastrointestinal (25.4%), neurological (17.9%), cardiovascular (11.0%) and musculoskeletal (10.5%). Four patients experienced fatal MRH (0.4%). Medicine classes associated with the highest risk of MRH (adverse events per 1000 discharge prescriptions) were opiates (399), antibiotics (189), benzodiazepines (180) and diuretics (153). Of 413 patients that experienced MRH, 328 (79.4%) sought NHS care. The incidence of MRH-associated patient readmission was 78 per 1000 discharges. We estimate post-discharge MRH in older adults to cost the NHS £ 395.5 million annually, of which £ 243.4 million is potentially avoidable.

Conclusions: MRH is common in older adults following hospital discharge, and results in substantial use of NHS resources. Interventions to prevent avoidable MRH could lead to considerable savings for NHS.

References:

[1] Forster AJ, Murff HJ, Peterson JF, Gandhi TK, Bates DW. The incidence and severity of adverse events affecting patients after discharge from the hospital. Ann Intern Med 2003;138:161–7.

[2] Stevenson J, Parekh N, Ali K, Timeyin J, Bremner S, Van Der Cammen T, et al. Protocol for a Prospective (P) study to develop a model to stratify the risk (RI) of medication (M) related harm in hospitalized elderly (E) patients in the UK (The PRIME study). BMC Geriatr 2016;16:22. doi:10.1186/s12877–016–0191–8.

LB-005

Caregivers' tailored nutritional counseling increases protein intake among male caregivers and patients receiving care at home

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Introduction: Older caregivers (CG) and care recipients (CR) are vulnerable to nutritional problems. Low intake of protein is common and can affect to their nutrition and health. Tailored nutrition counseling is needed to improve caregivers' and care recipients' nutrition.

Methods: In this RCT, we investigated the effectiveness of tailored nutrition counseling on nutrient intake among CG aged ≥65 years with normal cognition and CR aged ≥50 years. Nutrient intake was assessed with three-day food diary. Six-month intervention included tailored nutritional counseling with home visits, group meetings and written material in intervention group (I). Written material was offered to control group (C). Main outcome measure was change in protein intake (g/kg bodyweight (BW)/d) and it was analyzed among participants with protein intake under 1.2 g/kgBW/d (intervention target) at baseline.

Results: Total of 55 CG (n=28 I, n=27 C) and 40 CR (n=25 I, n=15 C), who had protein intake under 1.2 g/kgBW/d at baseline (79.7% CG and 88.8% CR), completed the study. Mean protein intake was 0.86 g/kgBW/d in the CG and 0.90 g/kgBW/d in the CR. Protein intake increased in CG male intervention group (n=12) 0.11 g/kgBW/d and decreased in male control group (n=13) −0.07 g/kgBW/d), p=0.007. Among CR intervention group protein intake increased 0.07 g/kgBW/d, p=0.033, but did not change in controls. There were no significant differences between other groups.

Conclusions: Tailored nutritional counseling improve protein intake among elderly male caregivers. Offering nutritional counseling to caregivers can affect to care recipient's nutrition at the same time.