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ORAL COMMUNICATIONS

O-01

IMPROVEMENT OF VACCINE ADHERENCE IN OLDER SUBJECTS ADMITTED TO OUT-PATIENTS GERIATRICS CLINICS

Marina Barbagelata[1], Barbara Senesi[1], Alessandra Pinna[1], Iryna Bagrii[2], Claudia Borello[1], Marcella Fama[1], Martina Vigo[1], Annarosa Floris[1], Orietta Parodi[1], Massimo Luzzani[1], Camilla Prete[1], Erica Tavella[1], Ekaterini Zigoura[1], Francesca Calautti[3], Carla Elda Angela Fraguglia[3], Alberto Pilotto[1]

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INTRODUCTION: In Italy, only 54% of older people follow the vaccination recommendations by the PNPV (National Vaccine Prevention Plan); the limited accessibility of vaccination is one of the main reasons for the low adherence.

AIM: The study aims to explore how much an in-hospital pro-active vaccination program could improve the vaccination adherence according to the PNPV recommended vaccines in older out-patients admitted to Geriatric Clinics.

MATERIALS AND METHODS: In the frame of the PRO-VAX project *, from June 2022 we start to enroll consecutive eligible older out-patients (aged 65 years and older) admitted to the out-patients clinics of the CU.RO.GE. Department, *i.e.* CDCD (Cognitive Impairment and Dementia Clinics), Palliative Care Clinics, Ostheo-Metabolic Clinics and Geriatric Clinics. All patients have been evaluated by the Comprehensive Geriatric Assessment (CGA)-based Multidimensional Prognostic Index (MPI) in order to assess clinical and functional multidimensional information. Each subject was provided with an informative brochure on the importance of vaccines in older-adults before the outpatient visit and a semi-structured interview was conducted after the clinical visit.

RESULTS: At the end of July 2022, 54 older out-patients have been included in the program (mean age 83±7 years; 28% males; education: 7±4 school years); the mean MPI value was 0.48±0.27; N°16 (29.6%) were in MPI-1 class (no-frail subjects), N° 22 (40.7%) were in MPI-2 class (at risk of frailty subjects), and N° 16 (29.6%) were in MPI-3 class (frail subjects). In this population the anti Covid-19 vaccine adherence was optimal (100% and the 27% were vaccinated with 2nd booster dose); also the Flu-vaccine 2021 adherence was high (81.5% of subjects). However, only 7.4% had received the anti-Pneumococcal vaccine and none of the involved subjects (0%) had ever received the Herpes Zoster Virus (HZV) vaccine. Moreover, the semi-structured interviews demonstrated that 25/54 subjects (46%) did not know that Pneumococcal pneumonia and HZV disease were vaccine preventable diseases; however, the majority of out-patients included in the program (43 out of 54, 89%) gave their vaccination adhesion after reading the informative brochure. Moreover, 43/54 (89%) patients declared the importance of sharing the vaccine adhesion with their General Practitioner (GP) and 52/54 (96%) recognized the safety and the improvement in vaccination accessibility through the PRO-VAX program, expressing the related confidence in the referring specialist physician.

CONCLUSIONS: This preliminary data suggested that an in-hospital vaccination campaign addressed to out-patients of geriatrics clinics could improve patients' compliance in vaccination schedule as recommended by the Italian PNPV.

**The PRO-VAX Project was partially supported by a contribution by GSK S.p.A. in response to the winning of "Call for prevention" (internal protocol no. 17128 on 22/06/2022).*

O-02

PREMATURE EPIGENETIC AGING IN DOWN SYNDROME TENDS TO BE ASSOCIATED WITH FUNCTIONAL AND COGNITIVE DEFICITS

Gian Luca Pirazzoli[1], Maria Giulia Bacalini[2], Magali Jane Rochat[2], Angelo Simili[1], Chiara Pirazzini[2], Camilla Pellegrini[2], Davide Gentilini[3], Luciano Calzari[3], Rebecca Cavagnola[3], Alessandro Ghezzo[4], Francesco Ravaioli[4], Daniela Monti[5], Stefano Salvioli[4], Miriam Capri[4], Paolo Garagnani[4], Raffaele Lodi[2], Caterina Tonon[2], Claudio Franceschi[6], Pietro Cortelli[2], Luisa Sambati[2], Aldina Gardellini[1]

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INTRODUCTION: The classification of Down Syndrome (DS) as a segmental progeroid disease dates back to 1978 thanks to the pivotal work of George Martin, who recognized 15 out 20 phenotypes characteristic of physiological aging in persons with DS. The drastic increase in lifespan of persons with DS, which has more than tripled in the last 50 years and currently overcomes 60 years, has further exposed this premature aging phenotype. Several studies have demonstrated that geriatric conditions, comorbidities, cognitive and functional deficits are highly prevalent among persons with DS. Moreover, a high degree of inter-individual variability is observed among adults with DS, posing important challenges for their clinical management and treatment.Researches performed in the last decades suggest that

molecular measurements could complement geriatric assessment, allowing to estimate the biological age of an individual and also to identify pathological aging before it is clinically evident. Among the potential biomarkers of aging, epigenetic clocks have raised particular interest. They consist in algorithms that, starting from the measurement of the methylation level of specific regions of the DNA of an individual, return an estimate of the epigenetic age of an individual. The discrepancy between epigenetic and chronological age (epigenetic age discrepancy, EAD) is considered a marker of biological aging, as several reports have shown that positive EAD values are associated with higher mortality and poor functional and cognitive status.Previous works have shown that persons with DS have high EAD values and are therefore biologically older than their chronological age. However, it is not known how EAD values change during aging in DS.

AIM: The aim of this study is to measure epigenetic clocks in a longitudinally followed cohort of persons with DS. Furthermore, we evaluated the association between EAD and functional and cognitive parameters in DS.

MATERIALS AND METHODS: The cohort analysed in the present study includes 12 persons with Down Syndrome (DS) and 11 euploid controls (CTRL), collected in 2008-2010 (time 0, T0) at University of Bologna and in 2022 (time 1, T1) at IRCCS Istituto delle Scienze Neurologiche di Bologna. At T1, DS underwent an extensive geriatric, neurologic and neuropsychological evaluation, with geriatric evaluation performed in the framework of the activity of the "Ambulatorio per la salute cognitiva e funzionale del paziente adulto con Sindrome di Down, Azienda USL di Bologna".At T0 the age range was 14-43 (mean 26.95±9.42 years) and 14-58 years (mean 35.55±11.95 years) for DS and CTRL respectively. At T1, DS had an age range of 28-57 (mean 41.04±9.09 years), while CTRL had an age range of 28-72 years (mean 48.93±12.61 years). The percentage of females was 50% for DS and 42% for CTRL.Whole blood DNA methylation was analysed by the HumanMethylationEPIC BeadChip. Epigenetic clocks were calculated using the online tool https://dnamage.genetics.ucla.edu/. EAD values were calculated as the residuals of the linear regression between epigenetic age estimates and chronological age, using CTR (T0+T1) as reference group. We focused on the EAD values derived from the original Horvath's clock estimator (Horvath's-EAD) and from its derivate obtained correcting for estimated white blood cell counts (intrinsic-EAD), which is indicative of cell-intrinsic properties of the aging process. Mann Whitney-test was used to compare EAD values across groups.

RESULTS: Our results replicate previous studies showing that Horvath's-EAD is significantly higher in adults with DS compared to euploid controls (p-value=0.016 and 0.012 at T0 and T1 respectively). These results tended to be confirmed also considering Intrinsic-EAD (p-value=0,051 both at T0 and at T1). We then compared for each person EAD values at T1 respect to T0, and we did not find significant differences neither in DS nor in CTR. Finally, we evaluated EAD values of DS at T1 respect to geriatric and neuropsychological measurements. While Horvath's-EAD did not reach statistical significance, we found that higher Intrinsic-EAD values tended to be associated with lower activity of daily living score (ADL; p-value 0.044) and worse cognitive impairment level (Wechsler scale, Wais-iii&Wais iv; p-value 0.0.042).

CONCLUSIONS: Our study reports for the first time a longitudinal analysis of epigenetic clocks in DS. Despite the small size of the analysed cohort, our results suggest that the increased epigenetic age observed in DS tends to remain constant across life and sustain premature aging in this syndrome. Furthermore, we demonstrated that increased epigenetic age tends to be associated with functional and cognitive impairment. Further studies in larger cohorts should confirm the utility of epigenetic biomarkers to monitor aging trajectories in persons with Down syndrome and to support geriatric clinical practice for this population.

O-03

HANDGRIP STRENGTH PREDICTS LENGTH OF HOSPITAL STAY IN AN ABDOMINAL SURGICAL SETTING: THE ROLE OF FRAILTY BEYOND AGE

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BACKGROUND: Chronological age per se cannot be considered a prognostic risk factor for outcomes after elective surgery, whereas frailty could be. A simple and easy-to-get marker for frailty, such as handgrip strength (HGS), may support the surgeon in decision for an adequate healthcare plan.

AIMS: The aims of this study were to: (1) determine the prevalence of frailty in an abdominal surgery setting independent of age; (2) evaluate the predictive validity of HGS for the length of hospital stay (LOS).

METHODS: This is a retrospective study conducted in subjects who underwent abdominal surgical procedures. Only subjects with complete cognitive, functional, nutritional assessments and available measurement of HGS at admission were included. A final cohort of 108 patients were enrolled in the study.

RESULTS: Subjects had a mean age of 67.8±15.8 years (age range 19-93 years old) and were mostly men. According to Fried's criteria, 17 (15.7%, 4F/13 M) were fit, 58 (23.7%; 24F/34 M) were pre-frail and 33 (30.6%; 20F/13 M) were frail. As expected, HGS significantly differed between groups having frail lower values as compared with pre-frail and fit persons (fit: 32.99±10.34 kg; pre-frail: 27.49±10.35 kg; frail: 15.96±9.52 kg, $p < 0.0001$). A final regression analysis showed that HGS was significantly and inversely associated with LOS (p=0.020) independent of multiple covariates, including age.

DISCUSSION: Most of the population undergoing abdominal surgery is pre-frail or frail. The measurement of handgrip strength is simple and inexpensive, and provides prognostic information for surgical outcomes. Muscle strength, as measured by handgrip dynamometry, is a strong predictor of LOS in a surgical setting.

O-04

ASSOCIATION BETWEEN MULTIDIMENSIONAL PROGNOSTIC INDEX AND PRESENCE OF INFECTIONS IN A POPULATION OF OLDER PEOPLE AFFECTED BY COVID-19

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BACKGROUND: Increasing literature suggests that older patients are among the main reservoirs of multidrug-resistant organisms, but only a few studies analyzed a possible relationship between frailty and infections. Therefore, in this study we aimed to evaluate the association between Multidimensional Prognostic Index (MPI), an index of multidimensional frailty, and presence of infections.

METHODS: The patients were enrolled in the hospital Policlinico Paolo Giaccone in Palermo between 01st February and 31st may 2022. A brief version of MPI was administered to all patients. The presence of infections was detected in blood and urine cultures, skin or other swabs. An adjusted logistic regression analysis was carried out for assessing the association between MPI and infections, reporting the results as odds ratios (ORs) with their 95% confidence intervals (CIs).

RESULTS: The study included 112 participants (mean age 77.6, 55.4% males) affected by COVID-19. A significantly higher prevalence of positive blood culture (15.4% *vs.* 5.7%) was detected in frailer patients compared to robust ones, like urine culture test (46.2% *vs.* 5.7%). In an adjusted logistic regression analysis, higher MPI values were associated with a significantly higher odds of any positivity to pathogens (MPI >0.66: prevalence: 61.5%, OR=15.56, 95% CI 3.39-71.50) compared to a prevalence of 8.6 %, if MPI was <0.33. A total of 86,000 euros was spent for all the antibiotics, with a median of 262 euro for patient, without differences by MPI status.

CONCLUSIONS: This was one of the first study analyzing an association between higher MPI values and infections, overall indicating the importance of multidimensional frailty in determining the presence of infectious pathogens.

O-05

D-PAP SCORE (DELIRIUM PALLIATIVE PROGNOSTIC SCORE) ESTIMATES SHORT-TERM SURVIVAL IN A COHORT OF HOSPITALISED GERIATRIC PATIENTS

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INTRODUCTION: Providing palliative care to elderly people regardless diagnosis and prognosis is a concept emphasised by recent reports from the World Health Organisation (W.H.O.), the European Association of Palliative Care (E.A.P.C.) and the European Geriatric Medicine Society (Eu.G.M.S.). Accurate prediction of survival is necessary for clinical, organisational, ethical reasons and for planning specific care strategies. Many tools have been validated to help physicians estimate survival.PURPOSE: Delirium Palliative Prognostic Score (D-PaP score) is based on 7 items and is recommended by E.A.P.C. for its high accuracy in predicting short-term survival in hospitalised terminal cancer patients. The aim of this prospective study was to assess the feasibility and accuracy of D-PaP score in a cohort of geriatric inpatients.

METHODS: This was a prospective observational cohort study on survival prediction based on the D-PaP score and routinely collected clinical data. Individual D-PaP scores were calculated for 250 geriatric patients admitted to two acute hospital wards between July and September 2021. D-PaP score is a multidimensional score based on dyspnea, anorexia, Karnofsky Performance Status score (KPS), Clinical Prediction of Survival (CPS), total WBC, lymphocyte percentage and delirium. The D-PaP score assigns patients to three different risk groups according to a 30-day survival probability: group A, >70%; group B, 30%–70%; group C, <30%. The CPS item was estimated three days after the ammission by the physician who was taking care of the patient, the delirium item was assessed with the CAM algorithm.

RESULTS: In this study 250 geriatric patients were enrolled, of which 90,3% had a non-cancer diagnosis, 52,8% had dementia. The mean age was 85,7 years. At the 30-days follow-up 32 patients (15,9%) had died. The three groups, divided based on different ranges of D-PaP, had significantly different survival curves (long rank test $\chi 2$= 111 p<0,0001), with 30 days actual survival (AS) rates of 93,3% (A group), 65,2% (B group), and 21,7% (C group). In the cohort sensitivity was 84,45%, specificity was 74,4%, positive predictive value (PPV) was 94,7%, negative predictive value (NPV) was 46,7% and accuracy was 82.2. The multivariate logistic regression model confirmed D-PaP as the independent variable with the best statistical significance (p=0,0001).

CONCLUSIONS: These data suggest that the D-PaP scoring system is a reasonably robust method for prognostication in hospitalised geriatric patients and can help physicians with advanced care planning (ACP).

O-06

EFFECT OF THE COMBINATION OF SACUBITRIL/VALSARTAN AND GLIFOZINES ON HEMODYNAMIC, CLINICAL ASPECTS AND COMPREHENSIVE GERIATRIC ASSESSMENT IN ELDERLY PATIENTS WITH CHRONIC HEART FAILURE AND DIABETES MELLITUS TYPE 2 - GENDER DIFFERENCE

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BACKGROUND: Diabetes Mellitus type 2 (DM2) in patients older than 65 years has a high prevalence as well as heart failure (HF), which after the age of 65 years, exceeds 10% leading to greater clinical frailty and negative outcomes. 40% of patients with HF have cognitive impairment and depressive symptoms, which increase in patients with NYHA Class III-IV. Sacubitril/Valsartan (Sac-Val) and glyphozines (SGLT2i) play a key role in the treatment of chronic HF with reduced ejection fraction (HFrEF)(1). However, data on elderly patients are still limited both in terms of the protective effect and adverse events. The aim of this study is to evaluate in elderly patients with chronic HFrEF and DM2, already on Sac-Val therapy, the effect of the addition of SGLT2i on clinical, laboratory and echocardiographic parameters, oxidative stress biomarkers, and comprehensive geriatric assessment (CGA) and gender difference.

MATERIALS AND METHODS: 91 patients aged >65 years (63 men and 28 women, mean age 73.6±4.7years) with symptomatic HFrEF, all on Sac-Val treatment, referred to Geriatrics Department of the "Magna Graecia" University of Catanzaro were enrolled. The patients underwent clinical-instrumental and laboratory evaluation at baseline and 6 months follow-up. The following tests were administered: the Minnesota Living with HF (MLHFQ) for quality-of-life assessment, Mini Mental State Examination (MMSE) and Montreal Cognitive AsseAssessment (MoCA) for cognitive function, Geriatric Depression Scale (GDS) for mood, and Short Physical Performance Battery (SPPB) for functional autonomy assessment. Student's t-test for paired data was used to compare the study variables at baseline and follow-up in the whole population, and Student's t-test for unpaired data was used to compare the study variables and variations of variables between baseline and follow-up between males and females. Simple linear and multivariate regressions were performed to assess the parameters that could affect CGA.

RESULTS: At baseline, males and females were overmatched for clinical, laboratory, instrumental and CGA parameters. Significant improvement in hemodynamic and clinical parameters, MLHFQ and BMI (p<0.0001), glyco-metabolic control, and markers of oxidative stress and platelet activation NOX-2, 8-Isoprostane and Sp-Selectin (p<0.0001) were already observed at 1 month, data confirmed at 6 months. Significant improvements of several echocardiographic parameters were observed especial-

ly cardiac index (CI) (1.8±0.2 *vs.* 1.9±0.2 l/min/m2; p<0.0001). In CGA there were significant changes in MMSE (25.3±1.8 *vs.* 25.9±1.5; p<0.0001), MoCA (26.4±1.4 *vs.* 27.3±1.4; p<0.0001), GDS (7.0±0.9 *vs.* 6.0±0.9; p<0.0001) and SPPB (6.4±1.0 *vs.* 7.7±1.0; p<0.0001). The changes (delta=Δ) in the study variables between baseline and follow-up in the two groups were calculated and compared. There were minor improvement in clinical, laboratory, echocardiographic and CGA parameters in females than males. Multivariate analysis shown that Δ of CI, HOMA, Sp-Selectin, NOX-2 and 8-Isoprostane explain 42.2% of ΔMMSE; while Δ of HOMA, Sp-Selectin and hs-CRP explain 33.3% of ΔMoCA; Δ of Sp-Selectin, NOX-2, CI and HOMA explain 37.5% of ΔGDS, finally Δ of HOMA and Sp-Selectin explain 30.9% of ΔSPPB.

CONCLUSIONS: The study showed that in elderly patients with HFrEF, the addition of SGLT2i to patients already on Sac-Val therapy results in significant clinical, hemodynamic, oxidative stress biomarkers and metabolic parameters improvement. This is associated with a significant improvement in basic abilities with a reduction in depressive symptoms, and an improvement in cognitive function. These results may be ascribable to the direct neuroprotective effects of SGLT2i including increase in brain-derived neurotrophic factor (BDNF), inhibition of acetylcholinesterase (AChe), and improvement in brain sensitivity to insulin. The SGLT2i improve oxidative stress by reducing the generation of free radicals that contribute to neurodegeneration. In studies in mouse models, treatment with SGLT2i showed significant reductions in Alzheimer's pathology, including tau protein phosphorylation and placque senyl density (2). Our study documents how such improvements are less pronounced in the female sex; in fact, women are diagnosed with HFrEF late and complain of earlier and more persistent symptoms, including depression and worse quality of life, and also represent a minority in clinical trials. Further studies would be needed to better define mechanisms, causes, and targeted therapies for the treatment of HF in women.

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POSTER

P-01

STUDY IN MAJOR ORTHOPEDIC SURGERY AND NEUROTRAUMATOLOGY USING THE CLOZAPINE IN OLD PATIENTS WITH DELIRIM AND DEMENTIA

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INTRODUCTION: Randomised study of geriatric patients aged between 75±85 divided into two groups with and without intraoperative heating undergoing major orthopaedic surgery. 47% of patients manifest delirium in the postoperative stage. From the study, postoperative pain is correlated to the onset of delirium in the postoperative stage (MRI brain 1).

MATERIALS AND METHODS: Pharmacological treatment of delirium with intraoperative heating quetiapine 25 ½ pill twice/day, haloperidol 8 drops, clozapine 12,5 1 cp; without intraoperative heating quetiapine 25 1 pill twice/day and haloperidol 1 dose i.m, clozapine 25 1 cp.; without intraoperative heating with mini nutritional assessment low clozapine 37,5 1 pill once/day, quetiapine 25 2 pills once/day, haloperidol 1 dose i.m.

RESULTS: Postoperative IADL score in geriatric patients group A (N=25 pt.) undergoing major orthopaedic surgery with intraoperative heating is 2±1. Postoperative IADL score in geriatric patients group B (N=25 pt.) undergoing major orthopaedicsurgery without intraoperative heating is 1±0. In major orthopaedic surgery in geriatric patients (N=25) aged between 75±85 with intraoperative heating, the incidence of overall delirium is 15%; delirium with a single event in the controls during the stay 40%; hyperkinetic delirium 5%; delirium in the postoperative stage 15%; delirium on discharge 5%; delirium in the control stage after discharge 4%. (MRI brain 2-3). In major orthopaedic surgery in geriatric patients (N=25) aged between 75±85 without intraoperative heating, the incidence of overall delirium is 32%; delirium with a single event of delirium in the controls during the stay 50%; hyperkinetic delirium 12%; delirium in the postoperative stage 29%; delirium on discharge 13%; delirium in the control stage after discharge 19%. (MRI brain 4-5).

CONCLUSIONS: In the 50 patients before the operation, the mini nutritional assessment is 23±24, on discharge in group A with intraoperative heating the mini nutritional assessment is 21±20; in group B without intraoperative heating, the mini nutritional assessment is 19±18. Postoperative pressure sores in geriatric patients group A (N=25 pt.) undergoing major orthopaedic surgery with intraoperative heating, the incidence is: 15% sacrum pressure lesions first stage; 5% sacrum pressure lesions second stage; 12% heels pressure lesions first stage; 25% heels pressure lesions second stage. Postoperative pressure sores in geriatric patients group B (N=25 pt.) undergoing major orthopaedic surgery without intraoperative heating, the incidence is: 8% sacrum pressure lesions fourth stage; 10% sacrum pressure lesions third stage; 10% heels pressure lesions third stage; 5% heels pressure lesions fourth stage.

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P-02

EVALUATION OF THE EFFECTIVENESS OF DIETARY NUTRITIONAL INTERVENTIONS IN ELDERLY PEOPLE WITH DYSPHAGIA IN ORDER TO SLOW THE ONSET OF CALORIE PROTEIN MALNUTRITION

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INTRODUCTION: Fragility is a common condition in long term care elderly and is related to increased risk of fractures, hospitalization, pressure injuries, mortality. Among the long term care elderly 50-60% have dysphagia and 50-70% have malnutrition.PurposeThe objective of this study is to evaluate the effectiveness of a nutritional intervention through diet therapy and/or the use of nutritional supplements in long term care elderly suffering from dysphagia and comorbidity in two nursing homes in slowing the appearance of calorie protein malnutrition.

MATERIALS AND METHODS: We retrospectively analyzed 40 elderly fragile (8 males and 32 females, average age 88 years) suffering from dysphagia and different comorbidities (dementia and encephalovasculopathy subject number 39, Parkinson's disease subject number 1) in two elderly health care homes subjected to a balanced physiological diet according to the indications of the requirements of LARN (1800 Kcal, protein 16%, lipids 26%, carbohydrates 58% in 20 guests of the elderly healthcare residence Sacconaghi) integrated always associated with 1 or 2 supplements (whey protein and amino acid supplement, with average integrated intake of 24 g of whey protein and 6.5 g of amino acids) or high-calorie high-protein diet (kcal 2400, proteins 17.5%, lipids 31%, carbohydrates 51.5% in 20 guests of elderly health care home Menotti) integrated only in 65% of cases with a supplement (whey protein, with an average integrated intake of 18 g of whey protein). The two samples are homogeneous by age, comorbidity, SOSIA class, and level of dependence in the habits of daily life. We evaluated the nutritional status of

elderly before and after a year of such nutritional interventions. Furthemore the number of pressure lesions that appeared in such hosts during this year has been investigated.

RESULTS: Before the intervention the average BMI of the guests in both healtcare home was in the norm (BMI elderly healtcare home Menotti 21.28, BMI elderly healtcare home Sacconaghi 21.37), after a year of intervention a significant difference was not observed remaining in the norm (BMI elderly healtcare home Menotti 20.26, BMI elderly healtcare home Sacconaghi 20.44, P >0.05), also the number of medium lymphocytes remained in the norm (lymphocytes elderly healtcare home Menotti 2125 10^9 L after a year 2141 10^9 L, lymphocytes elderly healtcare home Sacconaghi 2133 10^9 L after a year 2172 10^9 L), the mean plasma albumin after one year in both healtcare home has varied in a non-significant way in the sense of increase in the guests of elderly healtcare home Menotti (plasma albumin 3,49 g/dl, after one year 3,53 g/dl), in the sense of reduction in the guests of elderly healtcare home Sacconaghi (plasma albumin 3,21 g/dl, after one year 3,04 g/dl). In only one host of elderly healtcare home Menotti after a year a pressure lesion appeared, in elderly healtcare home Sacconaghi structure pressure lesions appeared in 3 guests.

CONCLUSIONS: An adequate high-calorie high-protein nutritional regime allows to slow down the evolution of malnutrition in fragile elderly suffering from dysphagia and comorbidity, even if it is not always associated with caloric protein supplement, resulting in the appearance of pressure lesions. Further studies are required in relation to the low sample size.

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P-03

WHEN NUTRITION BECOMES THERAPY: A PRELIMINARY STUDY OF IMMUNONUTRITION IN HOSPITALIZED OLDER AND FRAIL PATIENTS

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INTRODUCTION: Enteral artificial nutrition with complete formulas to support the immune response (immunonutrition) has been shown to be effective in the surgical and oncological setting in reducing complications and adverse events. No evidence is available on the hospitalized frail elderly persons. The aim of this study is to evaluate the effects of nutrition enriched with immunonutrients (omega-3 fatty acids, arginine, and nucleotides) in elderly patients under enteral feeding in order to evaluate the effects on the immune response and on intra-hospital complications such as length of stay (LOS).

METHODS: We included in this observation study 19 patients from the geriatric acute setting at Santa Maria della Misericordia Hospital, Perugia. All subjects underwent a comprehensive geriatric assessment and were stratified into two groups: subjects under enteral immunonutrition (IN) and subjects under isocaloric and isoproteic formula (controls). A subgroup (8 subjects) also underwent an immunophenotype analysis for lymphocyte subpopulation study (B, T comparts).

RESULTS: Patients enrolled were frail, mostly women (73.7%) with a mean age of 88.3±5.3, with an average LOS of 13.6 days. Subjects under IN (n=11) had a significantly lower LOS (9.8±5.6 *vs.* 18.5 ±13.0 days; p=0.07) as compared with the controls. IN showed a higher B/T ratio than controls, suggesting a protective role of immunonutrients under acute stress and disease conditions.

CONCLUSIONS: Our results indicate that IN may impact frail subject prognosis by a reduction in the term of LOS and a positive modulation of the immune response during an acute event. Further studies are necessary to confirm our preliminary data.

P-04

ORAL ANTICOAGULANT THERAPY AND DECLINE IN COGNITIVE FUNCTION IN ELDERLY PATIENTS WITH NONVALVULAR ATRIAL FIBRILLATION: REAL WORLD EVIDENCE AND THE ROLE OF "GENDER"

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BACKGROUND: Atrial fibrillation (AF) represents the most frequent cardiac arrhythmia in the elderly population, increasing the risk of stroke and cognitive decline (CD) regardless of the presence of previous stroke, with an estimated hazard ratio for CD or dementia of 2.43 and 2.70, respectively (1). AF and CD share common cardiovascular (CV) risk factors: advanced age, hypertension, and diabetes, and their association persists after adjustment for all possible confounders. Although large clinical trials have demonstrated the noninferiority of non vitamin K anticoagulants (NOACs) to vitamin K antagonists (VKAs) in preventing stroke and systemic thromboembolism, and reducing major bleedings especially cerebral, the role of antithrombotic therapies on the risk of CD is still controversial, probably due to the multiform pathophysiology of CD. The Mini-Mental State Examination (MMSE), is a simple and valid screening tool for the assessment and severity of CD, a score <24 indicates CD with a sensitivity and specificity of 87% and 82%, respectively (2). Despite this, the prognostic implications of different type of anticoagulation on the risk of CD assessed by MMSE in elderly AF patients are not defined. The aim of the present work is to evaluate possible differences on the occurrence of new CD among patients taking NOACs *versus* VKAs in an elderly population with AF and major comorbidities.

MATERIALS AND METHODS: 420 Caucasian patients aged ≥65 years were enrolled at the Geriatrics Department of "Magna Graecia" University of Catanzaro, suffering from nonvalvular AF, 136 on VKAs and 284 on NOACs, with mean age 76.7±5.7 years, 55 women in the VKAs (40.4%) and 133 in

NOACs group (46.8%) (p=0.217). A clinical-instrumental and laboratory evaluation was performed for a median follow-up of 93.9 months. Data were expressed as some mean and standard deviation or as median and interquartile range when appropriate. Wicoxon's test and Student's t-test were performed for unpaired data, chi-square test when appropriate. In addition, a log rank test was performed to compare the risk function estimates of two groups at each time point of the observed events, followed by a univariate Cox regression model on the incidence of CD; variables that correlated significantly with the occurrence of CD were included in a multivariate Cox regression model to calculate independent predictors associated with the incidence of CD.

RESULTS: The two groups were overlapping in sex, smoking, and type 2 diabetes mellitus. The NOACs treatment group had a higher prevalence of: heart failure (p=0.002), COPD (p=0.001), hypertension (p=0.0003) and a higher age (78.4±4.7 *vs.* 73.2±5.9 years); p<0.001. In the entire general population at baseline, the following values were found: MMSE 25.6±2.0 pt, estimated glomerular filtration rate (eGFR) 64.6±18.2 ml/min/1.73 m2, Systolic blood pressure (SBP) 132.5±11.6 mmHg, diastolic blood pressure (DBP) 76.6±9.5 mmHg, BMI 29.4±4.8 Kg/m2; while at follow-up the mean MMSE values were: 25.1± 2.0 pt. In addition, the Delta of MMSE between follow-up and baseline was calculated and found to be -0.8±0.3 pt and the Delta of MMSE/year -0.2±0.06 pt. At follow-up, there was a higher incidence of CD in the VKAs group than in the NOACs group (2.41 events/100 patient-years *vs.* 1.33 events/100 patient-years, p<0.0001). A multivariate analysis model showed that less decline in renal function (HR 0.432, p<0.0001) and taking antiarrhythmic therapy (HR 0.572, p=0.001) were protective factors for the occurrence of CD, while VKAs therapy (HR 3. 780, p<0.0001), smoking (HR 3.349, p=0.019), female sex (HR 2.244, p<0.0001), increased 1 kg/m2 of BMI (HR 1.087, p<0.0001), increased 1 year of age (HR 1.086, p<0.0001), and increased DBP (HR 1.065, p=0.001) increased the risk of CD.

CONCLUSIONS: The data from the present study confirm a better safety profile of NOACs compared with VKAs on the occurrence of cognitive decline in an elderly population with major comorbidities, despite patients on NOACs therapy were older with a higher burden of comorbidities that adversely affect cognitive function such as: hypertension, COPD, heart failure.

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P-05

OBSTRUCTIVE SLEEP APNEA SYNDROME AND COGNITIVE DECLINE: REAL LIFE ANALYSIS ON A GERIATRIC COHORT

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BACKGROUND: Obstructive Sleep Apnea Syndrome (OSAS) is a common sleep disorder characterized by repeated episodes of collapse of the upper airways with consequent limitation to the passage of air. The cognitive disorder in OSAS has been mainly investigated in the deficits of attention, executive processes, and humoral and functional status; however increasingly emerging data show a more pervasive deficit of cognitive functions, through different pathogenetic mechanisms represented by intermittent hypoxemia, by fragmentation in the sleep architecture, systemic inflammation, with anatomical alterations confirmed by neuroimaging data, all this can be particularly evident in elderly patients. The aim of the present study was to evaluate the potential effects non-invasive ventilotherapy (NIV) on functional, humoral and cognitive aspects, evaluated by performing comprehensive geriatric assessment (CGA), in a cohort of elderly OSAS patients, complaining of several comorbidities and taking many different drugs.

MATERIALS AND METHODS: We prospectively recruited 360 patients with age > 65 years, with a first diagnosis of moderate/severe OSAS registered during nocturnal respiratory polygraphy (PM) at home, and indication for ventilotherapy in CPAP mode according to the guidelines of the American Academy of Sleep Medicine (AASM). Patients with indication for ventilotherapy were recalled before starting CPAP, and the following tests were administered: the Mini-Mental State Examination (MMSE), the Montreal Cognitive Assessment (MoCA), the Geriatric Depression Scale (GDS), the Short Physical Performance Battery (SPPB), the Strength questionnaire, Assistance with Walking, Rising from a chair, Climbing stairs, and Falls (SARC-F), and the Epworth Sleepiness Scale (ESS). Patients underwent 12-hour fasting blood sampling to determine blood counts, creatinine, glycemia, insulin, glycosylated hemoglobin, and C reactive protein, and a study of vascular function was performed using EndoPat with measurement of the reactive hyperemia index (RHI). After 6 months from the beginning of CPAP, patients were re-evaluated with control of the apnea-hypopnea index (AHI) correction data, and therefore submitted to the same battery of tests and blood chemistry and instrumental examinations performed at baseline.

RESULTS: The population of the study is represented of 360 patients with a mean age of 75.2±4.3 years, with 252 male (70%) and 108 female (30%) subjects. Between males and females, no statistically significant difference emerges between the clinical-laboratory and polygraphic variables at baseline and at follow-up. At follow-up, patients showed correction of apnoic-hypopnoic events (AHI 35.43±19.1 *vs.* 9.51±5.88, p <0.0001), with improvement in multidimensional, biochemical and instrumental parameters compared to baseline. The multidimensional cognitive examination evaluated at baseline showed a borderline results in the MMSE score, and normal range score in the MoCA; in both cases, however, there was a statistically significant improvement in the execution of the two tests (MMSE 25.32±1.6 *vs.* 25.99±1.5, p <0.0001; MoCA 24.61±2.3 *vs.* 26.2±1.7, p <0.0001). The functional level of the patients also showed a significant improvement (SPPB 6.31±1.5 VS 6.91±1.4, p <0.0001; SARC-F 0.99±0.4 *vs.* 0.55±0.3, p <0.0001). The improvement of the cognitive and functional status, and of the daytime symptoms (ESS 11±4.7 *vs.* 3.6±2.1, p <0.0001), could explain the mood improvement (GDS 5.99±2.55 *vs.* 4.58±2.16, p <0.0001). There was also an improvement in biochemical data with an increase in renal filtrate (eGFR 60.7±17.3 *vs.* 71.9±17.8 ml/min/1.72 m2 CKD-EPI, p <0.0001), reduction in insulin (17.74 IU / ml±7.32 *vs.* 13.19±5.11, p<0.0001) C reactive protein (2.2 (1.4-3.9) *vs.* 1.6 (0.6-2.6) mg / dl, p <0.0001), and improvement of the endothelial dysfunction measured by RHI (1.57±0.40 *vs.* 2.15±0.41, p <0.0001). The simple and multivariate linear correlation analysis shows how changes in AHI, SpO2, TC90 and ODI are cumulatively responsible for 15.8% of the improvement in MMSE, while changes in ODI, AHI and RHI are cumulatively responsible for 34.8% of the MoCA improve-

ment, and variations in AHI, ODI and TC90 are responsible for the 28.3% improvement in GDS.

CONCLUSIONS: To the best of our knowledge, this represents the first study focused on a geriatric setting that has shown the correlations between the correction of OSAS and improvement not only on the cognitive domain, but also in the functional status and mood, with a reduction in systemic subclinical inflammation, improvement in vascular, renal and metabolic function.

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P-06

NOT PUBLISHED

P-07

RIGHT VENTRICULAR DYSFUNCTION AND RISK OF MACE IN COPD GERIATRICS PATIENTS.

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BACKGROUND: Chronic obstructive pulmonary disease (COPD) is a frequent disease, characterized by respiratory symptoms due to a limitation in the airflow because of alterations in the airways and alveoli, generally caused by inhalation of harmful gas for a long period, especially smoke of cigarettes. The prevalence of COPD will increase during time considering the exposition to risk factors and the aging in the general population. COPD is usually correlated with diseases, particularly with cardiovascular diseases, and this comorbidity contributes to worst outcomes. Systemic inflammation and lung hyperinflation are responsible of the alterations in the right side hearth in COPD patients. The aim of this work is to assess right ventricular morphologic and function alterations in geriatrics COPD patients, and to value the risk of major advents cardiac events (MACE) during the follow-up.

MATERIALS AND METHODS: This is an observational and multicentric study, conducted between the Geriatrics Department, University "Magna Graecia" of Catanzaro and Geriatrics Unit, "Pugliese Ciaccio" Hospital, Catanzaro, Italy. We enrolled 599 patients aged > 65 years, and followed for 4.4±2.5 years. They were divided in two groups according a tricuspid annular plane systolic excursion (TAPSE) value < 20 mm or ≥ 20 mm. Data were expressed as mean and standard deviation or as median and interquartile range when appropriate. Wilcoxon tests and Student's t-test were performed for unpaired data, and chi-square test when appropriate. Furthermore, a ROC curve was performed to evaluate the diagnostic accuracy of the different TAPSE values as a continuous and binary numerical variable in predicting MACE, and subsequently a univariate Cox regression model on the incidence of MACE; correlating variables were included with the occurrence of MACE in a Cox regression model to calculate the hazard ratio (HR) for independent predictors associated with the incidence of MACE.

RESULTS: We enrolled 599 patients and divided by TAPSE median values; 333 had a TAPSE value ≥ 20 mm (greater than median; first group), while the remaining 266 had a TAPSE value <20 mm (less than median; second group). The two groups were comparable for sex, age, comorbidities, therapies and for the main laboratory and instrumental variables. In patients with TAPSE ≥20 mm the MACE observed were 31 (2.1 events / 100 patient-years), while in the group with worse right heart function they were 56 (4.6 events / 100 patient-years) (p <0.0001). TAPSE as a continuous variable had greater discriminating power in predicting the development of MACE (AUC 0.741; standard error 0.027; 95% CI 0.688-0.794; p <0.0001), compared to TAPSE as a dichotomous value (AUC 0.602; standard error 0.030; 95% CI 0.544-0.661; p=0.001). A multivariate analysis model found that a 1 mm increase in TAPSE value (HR 0.665, p <0.0001) and the administration of LABA/LAMA inhalation therapy (HR 0.803, p <0.0001) were protective factors for the onset of MACE, while the presence of diabetes mellitus (HR 1.859, p=0.025) and the increase in the values of uric acid (HR 1.125, p=0.041) and S-PAP (HR 1.220, p=0.0001) increased the risk of MACE in COPD patients.

CONCLUSIONS: In this study we demonstrated in a geriatric COPD cohort a correlation between good right side hearth functionality and a minor risk of MACE.

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1) GLOBAL STRATEGY FOR THE DIAGNOSIS, MANAGEMENT, AND PREVENTION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (2022 REPORT). © 2021 Global Initiative for Chronic Obstructive Lung Disease, Inc.

P-08

THE "MPI PORTABLE" WEB-APP: A MULTI-LANGUAGE DIGITAL TOOL FOR THE CGA-BASED ASSESSMENT OF MULTIDIMENSIONAL FRAILTY IN OLDER PEOPLE IN DIFFERENT SETTINGS

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INTRODUCTION: The Multidimensional Prognostic Index (MPI) is a Comprehensive Geriatric Assessment (CGA)-based tool for assessment of multidimensional frailty in older people. Widely diffuse and validated in more than 54000 older people in different settings and clinical conditions, the MPI include several versions tailored to different clinical purposes and in different languages. Although e-health technologies are becoming an integral part of medicine for both prevention and clinical decision-making, digital technologies in frailty are under-developed.

AIM: Our aim is to support health communication and clini-

cal decision making in geriatric clinical practice through the development of a web-application consisting of a multi-language digital tool for the CGA-based frailty assessment of older people in different settings.

MATERIALS AND METHODS: In the frame of the MULTIPLAT_AGE project*, we have developed a web-application named "MPI portable" consisting of all MPI versions according to the different scope and purpose, including: a) hospital version, for in-patient context; b) out-patient version, for out-patient clinics; c) Brief-MPI, an short version of the MPI for a quick multidimensional evaluation; d) TELE-MPI, used for frailty evaluations in tele-medicine; e) Selfy-MPI, a printable self-administered version of MPI; and f) Digital Selfy-MPI, a digitally self-administered version with automatic score calculation.

RESULTS: The MPI web-app is available at http://multiplatage.it/index.php/it/strumenti in two versions, one for Windows (MPI-Windows) and one for Mac OS X (MPI-MAC). From the web-site the two versions can be download for free on the PC desktop and are ready to be used. Currently, the MPI portable web-app is available in English, Italian and French languages; the Selfy-MPI version is also available in Spanish and Dutch languages. Other translations are ongoing and will be added in the next future.

CONCLUSIONS: The MPI Portable is a friendly and easy-to-use web-application for health-professional and other users (older subjects in the community, patients and their caregivers) that can be able to download and getting freely access to all MPI versions for the CGA-based frailty assessment of older people in different settings. MPI Portable web-app increases health communication and simplify all MPI versions accessibility, administration and score calculation in an e-health technology perspective.

**The MULTIPLAT_AGE project is co-founded by the Italian Ministero della Salute, Direzione Generale della Ricerca e dell'Innovazione in Sanità (Bando Ricerca Finalizzata, anno 2016, Progetti di Rete).*

P-09
ASSOCIATION BETWEEN THE FRAILTY INDEX AND THE CLINICAL SETTING OF DISCHARGE IN OLDER PATIENTS ADMITTED TO A GERIATRIC ACUTE CARE UNIT: RESULTS FROM THE REGEMA STUDY

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INTRODUCTION: Frailty is a state of increased vulnerability to stressors. It increases the risk of adverse health-related outcomes and is highly prevalent in the older population (1). Its prevalence is particularly high in persons admitted to the hospital for acute conditions.

AIM: The aim of the present study is to investigate the relationship between frailty and different outcomes of interest related to the hospitalization of older person (in particular, length of stay, in-hospital mortality, clinical setting where the patient is discharged).

MATERIALS AND METHODS: The data are from the REGEMA study. To date, REGEMA is a single center, prospective and observational registry study of older patients admitted to a geriatric acute care unit. The registry includes biological, clinical and social information obtained via the comprehensive geriatric assessment. The data are collected at the admission, during the hospital stay and at the discharge. Frailty was measured using a 38-item Frailty Index (FI). Correlation analysis and linear regression models were performed to examine the relationship between the FI and different outcomes: I) length of stay (LOS); II) number of patients discharged at home; III) number of patients discharged to either high-intensity (Nursing home, Sub-acute care, Hospice, Emergency Room) or low-intensity (home, rehabilitation hospital, home care) settings of care.

RESULTS: The analyses were conducted on 151 patients (45% men; mean age of 83.6 years, SD 7.4). The assessment of frailty (FI mean value 0.31, SD 0.10) showed that 75% of the population was frail (FI >0.25). Mean LOS was 10.75 days (SD 4.78) with a 6% in-hospital mortality rate. Among patients who were not discharged at home, 57.6% and 35.1% were discharged to low and high intensity settings of care, respectively. A significant correlation was found between frailty and all the outcomes of interest. Each 0.10 FI increase led to a gradual increase in the LOS (Beta: 0.919; 95%IC: 0.126, 1.712) and a decreased likelihood to be discharged at home (OR 0.531; 95%IC: 0.358–0.788). Patients discharged to high-intensity settings of care showed a higher FI (0.347; SD: 0.088) compared to those discharged to low-intensity settings of care (0.286; DS: 0.097). A significant association between the FI and the probability to be discharged to a high-intensity setting of care was confirmed in regression analysis (OR: 1.955, 95% IC: 1.268-3.016 per 0.10 FI increase).

CONCLUSIONS: Although frailty is a common condition in hospitalized older persons, it is not yet sufficiently implemented in the acute care routine. The assessment of frailty at the admission can provide useful information about the prognosis and guide the development of an ed plan of intervention in older patients.

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P-10
LENGTH OF HOSPITAL STAY IN AN ORTHOGERIATRIC WARD: THE ROLE OF FRAILTY AND MULTIMORBIDITY

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INTRODUCTION: As the population age and comorbidity increase, the incidence of hip fractures (HF) is rising in the elderly. More than 95,000 HFs were registered in Italy in 2020. They had a significant impact on morbidity and mortality [1]. Thus, the related costs are growing and are comparable to those of acute myocardial infarction and stroke [2].Frailty is common among old people with HF and leads to an increased vulnerability due to a decline in reserve and function. Moreover, it is a predictor of surgical outcomes and complications, such as disability, institutionalization, and death. In particular, frailty leads to an increased risk of in-hospital and post-operative mortality, post-operative complications (infection, delirium and deep vein thrombosis) in patients with HFs [3]. Orthogeriatric care finds its role in this setting, providing a multidisciplinary approach based on the collaboration between orthopaedic surgeons and geriatricians, with the aim to improve patients' functional recovery and survival [4,5].

AIM OF THE STUDY: The purpose of our study was to assess the relationship between the Clinical Frailty Scale (CFS), the Charlson Comorbidity Index (CCI) and the Length of Hospital Stay (LOHS) in an orthogeriatric ward characterized by the integrated care model (both geriatrician and orthopaedic surgeon share the coordination of multidisciplinary care, with the geriatrician providing daily assistance and being the care manager).

MATERIALS AND METHODS: We conducted a retrospective observational study on 82 orthogeriatric patients (aged ≥75 years with HF) admitted to our ward at Maggiore Hospital in Bologna between May 12th and July 1st, 2022. The assessment of CFS and CCI was made during the in-hospital stay. According to CFS scores, patients were stratified into three groups: Fit (CFS ≤ 3), Intermediate (CFS > 3 and ≤ 7) and Frail (CFS > 7). A

Poisson regression model was used to assess the usefulness of Clinical Frailty Scale (CFS) and Charlson Comorbidity Index (CCI) to predict the Length of Hospital Stay (LOHS).

RESULTS: Mean age was 85.6 years (SD=5.4). 67 (81.7%) were females. Mean LOHS was 14 days (SD=6.5). LOHS for men was slightly shorter than for women, getting closer to the statistical significance (13.1 *versus* 14.2 days, p= 0.057). A longer LOHS was associated to a higher CCI (p=0.02). On the other hand, age and frailty assessed by the CFS were associated to a reduction of the LOHS (p=0.007 and p=0.013, respectively). The likelihood ratio test confirmed the usefulness of the set of explanatory variables.

CONCLUSIONS: The preliminary analysis showed that LOHS was higher for patients with high comorbidity measured by the Charlson Comorbidity Index, while LOHS decreased for older patients with a higher grade of frailty detected by the Clinical Frailty Scale. These findings might suggest that orthogeriatric care can reduce the length of hospitalization for frail patients. By its multidisciplinary approach, orthogeriatric care allows early identification of frailty, which may lead to maximizing the effectiveness of in-hospital services and finding suitable post-acute care setting earlier, thus reducing the risk of complications related to prolonged hospital stays.Further studies are needed to confirm this evidence and to explore patients' outcomes according to their discharge programs.

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P-11

PREDICTIVE VARIABLES OF POOR FUNCTIONAL RECOVERY AND MORTALITY IN ELDERLY PATIENT WITH HIP FRACTURE.

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BACKGROUND: Hip fracture in the elderly is characterized by poor outcome such as high mortality and unsatisfactory functional recovery (1). The early identification of the most important risk factors for poor outcomes in perioperative phase could allow the Orthogeriatric Team to implement corrective measures with the aim of improving outcomes.

AIM OF THE STUDY: Aim of the study is to identify those variables referred to both patient's clinical features, surgical procedure and the organizational model that are most related to mortality and poor functional recovery.

MATERIALS AND METHODS: Retrospective Observational Study. The study sample consists of 229 patients hospitalized consecutively in the Orthogeriatrics ward of the Ospedale Civile Baggiovara-Modena (OCB) from January 2021 to June 2021. All patients underwent comprehensive geriatric assessment, as well as radiological and laboratory examinations. Variables related to type of surgery and rehabilitative timing have also been detected. Functional recovery was assessed comparing preoperative Barthel Index with that at 12-month telephone follow-up. Mortality was detected both in the perioperative phase (within 30 days of surgery) and at 12 months follow-up.

RESULTS: At follow-up, 44 patients had died and 30 patients were untraceable. The variables that most predicted poor functional recovery were: albumin serum levels, age, time of surgery, high comorbidity, pre-existing loss of autonomy in ADL and perioperative delirium. Dementia was not found to be correlated with poor functional recovery. Multivariate analysis showed that independent factors associated with poor functional recovery were age (p=0.02), time of surgery (p=0.01) and pre-existing loss of autonomy in ADL (p=0.00). About mortality the most predictive variables were: age, dementia, albumin serum levels, pre-existing loss of autonomy in ADL, dynapenia and high comorbidity. At multivariate analysis, the only factor independently associated with mortality was found to be hypoalbuminemia (p=0.02).

CONCLUSIONS: Advanced age, malnutrition, time of surgery and pre-existing loss of autonomy were significantly correlated with poor outcomes in terms of mortality and functional recovery. The organizational method of Orthogeriatrics and the application of comprehensive geriatric assessment is able to identify patients at greater risk of complications and mortality, and to implement the necessary corrective factors (2).

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P-12

PROMOTING CULTURE OF DEMENTIA AND DISABILITY PREVENTION: THE ALLENAMENTE PROJECT FOR MCI GERIATRIC PATIENTS

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INTRODUCTION: Cognitive impairment/dementia is a multifactorial disease, resulting from interactions between genetic and environmental factors. It has been estimated that about a third of all Alzheimer Disease (AD) case can be attributed to modifiable risk factors, including hypertension, obesity, low physical activity, low educational level, depression and unhealthy lifestyle habits, and a synergistic removal of this risk factors would have a significant impact on the disease prevalence. For these reasons, multidomain interventions was made to act simultaneously on some of the modifiable risk factors of the disease. Scientific evidence suggests that these interventions are more effective if they are aimed at people at risk of cognitive decline, in an early stage and before the onset of symptoms and disability. Delay or prevention of this disease should have a positive impact on individuals' quality of life and health, on care burden for family and on costs for the Health Service.

PURPOSE: Main aim of this project is to spread a culture of dementia prevention and to investigate the potential benefits of removing some modifiable risk factors for the disease. It aims to promote a healthy lifestyle to pursue a successful aging. It also

proposes a reflection about addressing of clinical and public health problems with a multidisciplinary approach related to elderly individuals at increased risk of cognitive impairment/dementia, and in the development of multimodal intervention strategies to prevent or delay the onset of cognitive decline and disability.

MATERIALS AND METHODS: It is a project of geriatric, non-pharmacologic and multidomain intervention to prevent or delay cognitive impairment and disability, currently in development in the San Giovanni Addolorata Hospital of Rome. The participants (individuals with confirmed diagnosis of Mild Cognitive Impairment [MCI], at high risk of developing dementia) were recruited into the Cognitive Disorders and Dementia Center of the hospital. Inclusion criteria are prior diagnosis of MCI and age ≥ 65 years. Diagnosis of MCI is made according to the Diagnostic and Statistical Manual of Mental Disorders - 5th edition criteria (DSM-5) using a neuropsychological test battery. The multidomain intervention lasts 6 months and consists of: nutritional intervention, made of nutritional counseling sessions and a diet supplementation and/or dietary intervention care plan, as needed; sessions of group-based physical exercise (training duration: 45 minutes; frequency: twice a week; groups of 5 people with a dedicated physiotherapist) of aerobic and anerobic training and exercises for improving postural balance; management of metabolic and cardiovascular risk factors with the monitoring of anthropometric and biochemist factors. The project is made by a multidisciplinary team composed of geriatricians, neurologists, nurses, physiotherapists, a neuropsychologist and a specialist in Clinical Nutrition.

RESULTS: This project started in April 2022 and is currently in development. The mean age of participants was 77 years; the mean education level was 9.6 years; mean MMSE score was 27.6 points. The basic clinical characteristics of participants show the presence of several cardiovascular risk factors and an unhealthy lifestyle (presence of cardiovascular disease in 20% of participants, obesity/overweight in about 30%, serum cholesterol level > 200 mg/dl in 60%, altered fasting blood glucose in 30%, high systolic blood pressure - ≥ 140 mmHg - in 30% of cases), creating a window of opportunity for prevention.

CONCLUSIONS: Mild Cognitive Impairment can be considered an intermediate phase between normal age-related cognitive decline and dementia; the mean annual conversion rate of MCI to dementia is approximately 10%. It could be an optimal stage for preventing the progression to dementia. Removing some risk factors simultaneously with a multidomain intervention could give an optimal prevention effect. As in other chronic diseases, a multidisciplinary approach is necessary because it reflects the complex disease pathogenesis. The potential benefits of this multimodal approach include a prevention/delay onset or change in progression of dementia among high-risk individuals, improvement of physical abilities (muscle strength, postural balance, walking ability), preservation of independent functioning, improvement of psychological health and quality of life, protection against adverse effects, increase of social connections and more awareness for patient and caregiver. The working method proposed by this multidomain and multidisciplinary project could help in the planning of larger future interventions and in the development of mass preventive strategies in population at risk.

P-13

POST SURGERY AND POST ACUTE CONTINUITY CARE OPERATIONAL UNIT

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INTRODUCTION: Several studies in literature highlight how frailty and advanced age, after surgery, represent the main risk factor for the development of post-operative complications and the elongation of the recovery.1-2 The post-surgery geriatric patient needs a multidisciplinary approach through the combined work of several health workers (surgeon, geriatrician, physiatrist, assistant, physiotherapist, nurse) from the begging of the recovery.3 On May 2022 the new Post-Surgical medicine project was started at Calogero's Post Acute and Continuity Care Operational Unit (PACA) of Sant'Orsola Universital Hospital in Bologna. The ward counts 16 beds for Post-Surgical Medicine.GOALS: One of the goals of this project is to flow out patients from the surgical areas to reduce the operating waiting lists increased during the pandemic period and also to respond to the need of the Professionals to implement the knowledge about the Transitional Care for favoring the critic transition hospital-territory.

MATERIALS AND METHODS: The Post-Surgical Medicine is in the PACA where there are also 10 beds dedicated to Internal Medicine. Post-surgical beds are divided into 8 for abdominal surgery, 4 for maxillofacial surgery and 4 for vascular surgery.For patients selection the proposing department sends a brief epicrisis of hospitalization to a specific e-mail address; PACA's doctor verifies that the inclusion criteria are respected (clinical stability and the need to create an Individualized Assistance Plan (PAI) in anticipation of discharge), and then the patient is assigned to the appropriate waiting list based on the area of origin. Once the patient is admitted, the multidimensional assessment is carried out using specific tools in the medical record, the PAI is designed identifying clinical, functional/rehabilitative and social objectives and possible transitional-care measures to facilitate the hospital-territory transition (continuation of medications, physiotherapy treatment, activation of Social Services, etc.). Through periodic multidisciplinary meetings the geriatrician defines the PAI with various professional figures such as the nurse, the social worker and the physiotherapist.The patient is also re-evaluated several times by the referring surgeon who is in charge the management of the surgical wound and any post-operative complications.In order to ensure early implementation of the PAI there is constant comunication with family members and with the Primary Care Physician with whom home care is further structured and patient situation at discharge is defined.

RESULTS: From 02/05/2022 to 15/06/2022 (45 days) 78 patients were proposed, of theese 49 were accepted, divided as follows between the various departments of origin: 28 from abdominal surgery, 10 from vascular surgery, 8 from maxillofacial surgery and 3 from urology. The time elapsed from acceptance was 2.9 days. Mean hospital stay in the post-surgical medicine was 10.77 days (range 3-27) compared to 24.67 days (range 1-132) of average hospital stay in the various departments before entering PACA. Among the abdominal surgery patients 9 received protected discharge at home, 2 were ordinarily discharged, 3 were transferred to surgery, 1 was transferred to the COVID ward, 2 were transferred to private nursing home and 1 was discharged to public nursing home. Among vascular surgery patients, 1 was discharged at home, 1 was discharged to an intensive rehabilitation facility, 2 were transferred to the COVID ward. Out of 8 maxillofacial surgery 4 patients were ordinarily discharged home, 1 was discharge at the reference day hospital, 1 was transferred at another hospital, 1 was transferred at the COVID department. Among the patients of urology, 1 was transferred to a COVID department and 1 was transferred to a private nursing home.

CONCLUSIONS: These project shows that a II level structure such as the PACA allows to define a targeted discharge pathway for geriatric surgical patients in order to speed up operating waiting lists.This kind of ward represents the most appropriate setting for the complexity of the post surgery geriatric patients. Among the future goals of the PACA there is the idea to train the surgical team about the transitional care pathways and the possibility to guarantee help to territorial healthcare workers in the first month after the discharge.

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P-14

ROLE OF ULTRASOUND IN THE ELDERLY PATIENTS WITH GASTROINTESTINAL BLEEDING

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INTRODUCTION: The objective of the work is to evaluate the role of Ultrasound (US) in the management of elderly patients admitted in Geriatrics Department with the diagnosis of anemia and gastrointestinal bleeding with melena or hematemesis or enterorrhagia or rectorrhagia. The aim of the study is first of all to investigate if ultrasound performed before endoscopy allows to modify the diagnostic and therapeutic procedures and allows to increasing the appropriateness of management and the duration of hospitalization.

MATERIALS AND METHODS: 400 patients (age 75 - 95 years, 235 women, 165 men) were included in the study. All elderly patients were admitted in Geriatrics Department. In Emergency Room blood transfusion was performed in 187 patients with Hb < 8 g % before the admission in Geriatrics Department. Abdominal Ultrasound was performed immediately after admission. In all patients esophagogastroduodenoscopy (EGDS) and /or colonoscopy and/or rectoscopy were performed immediately after Ultrasound and CT or other invasive investigations were prescribed if the US or endoscopic findings not allowed the diagnosis.

RESULTS: In 105 elderly patients with anemia and gastrointestinal bleeding US revealed neoplastic diseases: 42 hepatocarcinoma, 13 pancreatic neoplasm, 5 biliary neoplasm, 5 gastric cancer, 10 colon cancer, 7 renal cancer, 5 gallbladder cancer, 8 bladder neoplasm, 10 utero ovaric cancer, Gastric and colon neoplasms were confirmed with Endoscopy. The other neoplasms were confirmed with CT. All elderly patients with neoplasms were transferred from Geriatrics to surgical or oncological department. In 95 elderly patients US revealed liver cirrhosis. In 120 patients US was normal. In 60 elderly patients US revealed diseases not related to anemia or gastrointestinal bleeding (gallbladder stones, renal and hepatic cysts). In 20 patients US detected enlarged lymph nodes and enlarged spleen and haematological counseling was requested.

CONCLUSIONS: The US even in the presence of anemia and gastrointestinal bleeding, in Emergency Room or in Geriatric department, can be performed easily, before endoscopy in all elderly patients.The multidimensional geriatric global assessment is the most appropriate procedure for evaluation elderly patients. In elderly patients with chronic diseases often gastrointestinal bleeding can be caused by drugs or other pre existing diseases that are associated with neoplastic diseases, often unknown. In addition in elderly patients anemia and gastrointestinal bleeding can occur if anticoagulant therapies are not well monitored. Therefore before prescribing invasive investigations the US allows to highlight unknown diseases. Progressive anemia in the elderly patients often is associated with iatrogenic and neoplastic etiopathogenesis.US performed before endoscopy and CT allows to reduce the duration of hospitalization in geriatric department in all elderly patients with anemia and gastrointestinal bleeding and increases the appropriateness of management of elderly patients.

P-15

SARCOPENIA IN ELDERLY PATIENTS AND EVALUATION WITH SONOELASTOGRAPHY

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INTRODUCTION: Sonoelastography is an imaging technique enabling non invasive assessment of tissue stiffness. Shear wave sonoelastography is less influenced by differences in manual compression force exerted on target structures. The value of Ultrasound in the assessment of aging related muscle loss is demonstrated in an increasing number of studies. The aim of this study is to evaluate the role of sonoelastography in the diagnosis of sarcopenia in elderly patients.

MATERIALS AND METHODS: Many studies investigating elderly patients with sarcopenia reported the evaluation of the following US parameters: muscle thickness, Cross Sectional Area (CSA), pennation angle, fascicle length, muscle echogenicity. The muscles identified for measurement are muscle vastus lateralis and muscle rectus femoris. We selected 10 elderly patients (age 80-90 years, 5 women and 5 men) and we performed shear wave sonoelastography. We evaluated also in these 10 elderly patients the muscle echogenicity and the correlations between muscle fatty infiltration (myosteatosis) and muscle stiffness measured by sonoelastography. 4 patients had diabetes and obesity, 2 cardiovascular diseases, 4 diabetes.

RESULTS: In 8 elderly patients (with diabetes and obesity) US detected increased muscle echogenicity and fatty infiltration. The myosteatosis was higher in patients with obesity and diabetes associated. Shear Wave Sonoelastography showed increased stiffness. The muscle stiffness was increased in patients with diabetes and with high myosteatosis and with age from 85 to 90 years.

CONCLUSIONS: Muscle US and Sonoelastography are useful imaging technique for the evaluation of muscle thickness and muscle stiffness. US is a reliable and valid imaging tool but should be performed by trained clinicians. The diagnosis of sarcopenia in elderly patients with various disease and clinical syndromes should be performed in geriatrics department applying a consensus protocol for using ultrasound in muscle assessment, according to EuGMS sarcopenia group.

P-16

NUTRITIONAL ASSESSMENT OF ELDERLY PATIENT AND ROLE OF ULTRASOUND

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INTRODUCTION: Malnutrition is a well known syndrome in geriatric patients. Metabolic syndrome in elderly patients is often associated with high mortality. Both syndromes are associates with serious comorbidities. The aim of our study is to investigate the role of Ultrasound (US) in the evaluation of nutritional assessment of elderly patients.

MATERIALS AND METHODS: We evaluated with ultrasound 300 patients (age from 75 to 95 years, 180 women and 120 men) with metabolic syndrome (diabetes, dyslipidemia, hypertension, obesity) and 300 patient (age from 75 to 95 years, 170 women and 130 men) with malnutrition and sarcopenia. The US evaluation was performed for all patient in geriatrics department within 24 hours from admission. Abdominal US, tyroid US,muscle US were performed bedside by trained clinicians. Abdominal

fat, visceral fat, subcutaneous fat were evaluated with standardized methods. Muscle vastus lateralis and muscle rectus femoris were evaluated using consensus protocol including measurement of muscle thickness, cross sectional area, fascicle length, pennation angle and echogenicity. Evaluation with Shear Wave Sonoelastography was also performed.

RESULTS: In the 300 patients with metabolic syndrome US revealed liver steatosis (210 patients), gallbladder stones (80 patients), increased thckness of subcutaneous fat (260 patients) and of visceral fat (255 patients). In 300 patients with malnutrition and sarcopenia US revealed increased muscle echogenicity, myosteatosis, reduction of muscle thickness and fascicle length, reduction of cross sectional area. These findings were detected in 100 % of the patients with age from 85 to 95 years.

CONCLUSIONS: In elderly patients with metabolic syndrome and in elderly patients with malnutrition and sarcopenia US bedside evaluation should be performed in geriatrics department before prescribing a personalized diet. A better nutritional assessment is associated with a better functional status and for elderly patients the US evaluation allows to improve the effectiveness and the efficiency of health care.

P-17

ROLE OF ULTRASOUND IN PRESCRIPTIVE APPROPRIATENESS AND DEPRESCRIBING IN THE ELDERLY PATIENTS

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INTRODUCTION: The frailty of the elderly patients is a very frequent cause of side effect and drugs interactions. In elderly patients with comorbidities the prescription of multiple drugs with adeguate posology is particularly complex. The aim of the study is to investigate if Ultrasonography performed within 8 hours from admission in the elderly patients can increase the prescriptive appropriateness. In addition we want to verify if Ultrasonography can be recommended for increase the accuracy of deprescribing in elderly patients.

MATERIALS AND METHODS: We selected 50 patients (age from 75 and 95 years, 30 women and 20 men) and we performed abdominal and thyroid Ultrasonography whitin 8 hours from admission in geriatrics department. We selected also a homogeneous group of 50 elderly patients in which Ultrasonography was not performed during the hospitalization, because other diagnostic techniques were performed and ultrasonography was not considered indispensable. We evaluated the number of drugs side effects, the number of variations in drugs prescription and the number of deprescriptions observed in the two groups of elderly patients during the hospitalization and at the time of hospital discarge.

RESULTS: We have compared the two groups of homogeneous elderly patients : in the first group with ultrasound performed whitin 8 hours from admission we observed appropriateness 50% higher in diuretics prescriptions (patients with ascites, pleural effusion, congestive heart failure, oliguria). Thyroid ultrasound allowed to increase appropriateness in amiodarone prescription (60% higher in the first group). Kidneys, bladder and prostate ultrasound increased appropriateness in anticoagulants (40% higher), hypotensives (30% higher) and diuretics drugs (50% higher) prescriptions in the first group. Liver, gallbladder,biliary tract, kidneys ultrasound increased appropriateness in antibiotics (30% higher), insulin (30% higher) and oral hypoglicemic drugs (40 % higher) prescriptions in the first group. Obviously in all patients, of the two groups, laboratory tests and clinical examination data were always carefully and completely evaluated.. Drugs side effects observed in the second group of elderly patients, without ultrasound examination and monitoring, were 50% higher and the variations in drugs prescription were 40% higher in the second group. Deprescribing durig the hospitalization and at the time of hospital discarge was 50% higher in the first group in which was performed also ultrasound monitoring during hospitalization.

DISCUSSION AND CONCLUSIONS: High clinical competence is essential with careful preliminary multidimensional assessment in order to avoid drugs side effects and drug interactions in elderly patients with comorbidities. It is also suggested to implement always an adeguate pharmacological reconciliation in all situations where the management of the frail elderly patients involves hospital, residential facilities, caregivers at home. Ultrasound examination, according to our observations, could be, both in the initial approach to the elderly patient and in subsequent monitoring, a very useful non invasive diagnostic technique to improve drugs prescriptive appropriateness and deprescribing. It is essential in every care setting that the frail elderly takes the least number of drugs possible with the least high posology possible: ultrasound monitoring also at home could contribute to improve home drugs management in elderly patients with comorbidities.

P-18

ROLE OF ULTRASOUND IN THE EVALUATION OF SARCOPENIA

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INTRODUCTION: Ultrasound (US) is a valid and reliable diagnostic technique for the assessment of skeletal muscle mass. Sarcopenia and aging related muscle loss is common among elderly patients. For the assessment of muscle mass loss in elderly can be used Magnetic Resonance Imaging (MRI), Computed Tomography (CT) and Dual Energy Xray Absorptiometry (DEXA). Ultrasound is radiation free, cost effective and easily portable and recently US has been proposed for evaluation of sarcopenia in elderly patients. The aim of the study is to evaluate with US the elderly patients admitted in Geriatrics Department with the diagnosis of sarcopenia.

MATERIALS AND METHODS: 20 elderly patients (age 75-95 years), 10 men and 10 women were studied with Ultrasound. We evaluated muscle vastus laterali and muscle rectus femoris. Muscle thickness was considered to be the most reproducible parameter for muscle mass. We evaluated also the pennation angle, the fascicle length, the cross sectional area and the muscle echogenicity.

RESULTS: The results of our US evaluation of 20 elderly patients revealed that the increased muscle echogenicity was detected in all 20 patients. This is considered as an aging related change. Muscle Thickness,Cross Sectional Area, Fascicle Length and Pennation Angle were reduced in all 20 patients. These should be considered diagnostic parameters for assessment of sarcopenia in elderly patients. In our study the reduction was from 40% to 60 % in the patients from 75 and 82 years and from 60 % to 90 % in the patients from 83 and 95 years.

CONCLUSIONS: The increased muscle echogenicity is related to age and to muscle atrophy and fatty infiltration (myosteatosis). In the elderly patients affected by cognitive impairment, depression, diabetes, chronic hearth failure,chronic kidney diseases, chronic pulmonary diseases, swallowing dysfunction, limited mobility, our study detected severe sarcopenia. The US measurement of muscle thickness, cross sectional area, muscle echogenicity, pennation angle, fascicle length can be considered a reproducible procedure for the assessment of muscle mass (m.

vastus lateralis and m. rectus femoris) and for assessing sarcopenia. The US technique can be performed also bedside and it is imperative to follow a standardized protocol. US measurement of m.rectus femoris and m. vastus lateralis can be also considered very useful for the best clinical and nutritional approach. In clinical geriatric practice the comprehensive geriatric assessment should include muscle ultrasound for sarcopenia assessment.

P-19

COGNITIVE IMPAIRMENT, SARCOPENIA AND WALKING DEFICIT:ROLE OF ULTRASOUND IN THE EVALUATION OF ELDERLY PATIENTS

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INTRODUCTION: The aim of the study is to evaluate the role of ultrasound (US) in the multidimensional assessment of the elderly patients with cognitive impairment, sarcopenia and walking deficit.

MATERIALS AND METHODS: We evaluate 500 patients (age 75-95 years, 320 women, 180 men). The elderly patients were affected by cardiological, pneumological, gastroenterological, neurological diseases. In addiction they have cognitive impairment, walking deficit and sarcopenia. The clinical global approach with a multispecialist team (geriatrician, psycologist, physiatrist, dietician, social worker, neurologist) was integrated with US evaluation, including muscle US. The evaluation of elderly patients was performed in geriatrics department. We evaluated elderly patients with cognitive tests (Mini Mental State Examination, MMSE; Global Deterioration Scale, GDS), with ADL and IADL scale, with Tinetti and Up and Go scale and with Conley scale. Ultrasound muscle examination was performed for sarcopenia assessment. Brain CT scan, abdominal ultrasound, ECG, psycological evaluation were performed in all patients. Routine laboratory tests with oncological markers were prescribed for all patients.

RESULTS: In all elderly patients brain CT scans showed signs of chronic cerebrovascular insufficiency. 247 patients were referred to the Alzheimer's evaluation unit. In 185 patients the US examination revealed liver diseases (chronic liver disease, cirrhosis, gallbladder stones, steatosis, primary or secondary hepatic cancer) The US revealed in 67 elderly patients cancer of pancreas (7),liver (19), kidneys (7), prostate (5), gallbladder (4), biliary tract (5), colon (4), lymphoma (4), bladder (7), peritoneum (5). In 45 elderly patients US detected pleural effusion and in 39 patients detected ascites. Muscle Ultrasound was performed of m. vastus lateralis and m. rectus femoris and were evaluated muscle thickness, cross sectional area, pennation angle, fascicle length and muscle echogenicity. In all elderly patients with age from 83 and 95 years was detected with US severe sarcopenia. In patients from 75 and 82 years was detected with severe sarcopenia in 65 % of patients and medium entity sarcopenia in 35 % of elderly patients.The 98 % of elderly patiens with cognitive impairment was affected by severe sarcopenia and severe walking deficit.

CONCLUSIONS: The reduction in the degree of autonomy of elderly patients with chronic cerebrovascular insufficiency, dementia or Alzheimer's disease is considered often related only to neurological diseases and also to comorbidities (cardiological,pneumological, gastroenterological, oncological). Our study detected, with US global evaluation and with Muscle US evaluation, unknown pathologies, even serious and neoplastic which greatly influence the degree of autonomy of the elderly patients, his walking abilities, his mental abilities, his social life. Muscle US evaluation supported the diagnosis of sarcopenia and confirmed the correlations between cognitive impairment, walking deficit and sarcopenia. In conclusion the global multidimensional geriatric assessment of the elderly patients should always include US examination with US muscle evaluation and should be used also at the bedside by trained clinicians.

P-20

PROGNOSTIC ROLE OF MULTIDIMENSIONAL PROGNOSTIC INDEX AND COVID-GRAM SCORE IN OLDER PEOPLE HOSPITALIZED FOR COVID-19: THE COMEPA STUDY

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BACKGROUND: In the current SARS-CoV2 pandemic context, frailty and patient's poor outcomes seem to be closely related. Actually, however, there is no clear indication on both the significance of this connection and the most adequate risk's index in clinical practice. In this study, we compared a short version of MPI (brief-MPI) and Covid-Gram Score as potential predictors of patient's outcome in terms of mortality and/or intensive care's (ICU) accession.

METHODS: The patients were enrolled in the hospital of Palermo between 01st February and 31st May 2022 for COVID-19. A brief version of MPI was administered to all patients at the admission and at discharge as well as COVID-GRAM score. A multivariable Cox's regression analysis was carried out for assessing the association between MPI and COVID-GRAM score, reporting the results as hazard ratios (HRs) with their 95% confidence intervals (CIs), taking as outcome mortality or sub-intensive care admission.

RESULTS: The study included 112 participants (mean age 77.6, 55.4% males) affected by COVID-19. People dead/admitted to sub-intensive care (n=19) reported significantly higher values in brief-MPI and COVID-GRAM at the admission. During a mean of 16 days of hospitalization, brief-MPI significantly increased of 0.03±0.14 (p=0.04), whilst COVID-GRAM did not. In the multivariable analysis, only a brief-MPI value>0.66 at the admission was associated with a higher risk of death/sub-intensive care admission (HR=4.64; 95%CI: 1.66-12.95; p=0.003), whilst age, gender, COVID-GRAM resulted not associated with an unfavorable outcome. Both COVID-GRAM and brief-MPI had a good accuracy in predicting poor outcomes in older people.

CONCLUSIONS: Brief-MPI was significantly associated to an increased mortality/ICU admission risk, independently from several confounders including COVID-GRAM indicating the importance of multidimensional impairment in clinical-decision making.

P-21

THE IMPACT OF THE HOSPITALIZATION ON NUTRITIONAL STATUS IN FRAIL ELDERLY PEOPLE

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INTRODUCTION: In Frail Elderly People, hospital malnu-

trition is associated with a greater risk of morbidity and mortality. The objective of this study was to assess modifications of nutritional status in Frail Elderly people in the post discharge period from Hospital.

METHODS: Participants were recruited from patients referring to AO Pugliese Ciaccio Hospital of Catanzaro in Italy. A total of 380 patients were included (85,6±7,1 years old, M=36%). A structured telephone interview was delivered to family caregivers of patients. At baseline (T0) and month 3 (T1) since hospitalization, nutritional risk assessment were assessed by Self.Mini Nutrition Assessment (Self MNA).

RESULTS: A baseline according with the Self-MNA test score, 42,7% were classified as malnourished, whereas 57,3% of were at risk of malnutrition. A T1 according with the Self-MNA test score, 44,2% were classified as malnourished, whereas 55,8% of were at risk of malnutrition.

CONCLUSIONS: Hospitalization is associated with a rapid increase malnourished and risk of malnutrition on frail Elderly People, therefore it is advisable to continue appropriate interventions also in the post discharge period.

P-22

SURFACE P WAVE ANALYSIS IN HEMODYALYSIS PATIENTS

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BACKGROUND: Surface electrocardiogram is commonly used to evaluate the normal and abnormal activation of the atrial and interatrial conduction appears as the most important factor determining P wave duration and morphology during sinus rhythm. A good estimation of the interatrial conduction time can be obtained by a simple esophageal recording or by P wave duration on the surface electrocardiogram. We aimed to assess these areas using a range of non-invasive cardiac investigations.In the present study, we evaluated the modicìfication on P wave indices in hemodialysis patients.

METHODS: The study population was made up of 57 hemodialysis patients with a mean age of 66.64±4,56 years old (78.94% were males). Electrocardiographic variables were compared pre and post dialysis.

RESULTS: The P wave dispersion were significantly higher in the patients in predialysi (27,97±2,99 *vs.* 25,06±2,82, p=0,000). Of note, instead, was a reduction in PWSMAX, from 109.56±1.07 ms to 107.91±2.11 ms (p=0.000). Between pre and post dialysis there was a statistically significant increase in PWDMIN, in particular from 81.59±1.45 ms to 82.84±2.24 ms (p=0,003) Performing post-HD, bivariate analysis, we found that PWDIS correlated directly with plasma calcium (r=0.479; p=0.006).

CONCLUSIONS: This study shows that the typical alterations of the patient on dialysis therapy, such as the increase in atrial volume, the electrolytic alterations with the consequent variations in autonomic function, are reflected in an electrophysiological instability, documented with the variation of the P Wave dispersion in the pre and post dialysis, which increases the risk of AF. Therefore, electrocardiogram may help define hemodialysis patients with increased highrisk of AF, particularly, a precise analysis of the atrial electrical activity from surface ECG gives important indexes to predict paroxymal AF.

P-23

HEALTH PROMOTION AND NATURE THERAPY: CALABRIANDO STUDY

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INTRODUCTION: The PNRR provides a model for the development of territorial assistance with qualitative, structural, technological and quantitative standards of the structures also dedicated to the prevention system in the health, environmental and climate fields. The increase in scientific evidence shows that the success of aging depends strictly on the practice of adequate physical activity. The objectives of this study were to assess the effect of a specific physical activity programme on a group of persons observed for active ageing, in Catanzaro (Italy). Specifically, we enlisted a group of people, evaluating their cognitive function (MMSE) and psychophysical well-being (BIDA), at the beginning and at the end of the physical activity program. Body Image Dimensional Evaluation Tool (BIDA) has been used. The BIDA assesses the subjective and emotional dimensions of the body image by a scale based on the neutral silhouette (that is, not linked to gender and not ethnicity). The program, carried out with medical examination, included walking in the mountain woods for five consecutive days (from 12 to 15 km/ day).

METHODS: The participants were recruited by "ASD Calabriando", amateur sports association, in Catanzaro, Italy. A total of 15 people were included. At the baseline (T0) and after 5 days (T1), cognitive functionality and Psycho-Physical Well-being, were evaluated by MMSE and BIDA, respectfully.

RESULTS: A total of 15 subjects (59.73 ±7.10 years, M=53%) were enrolled. Participants had to indicate their perceived and ideal body shape, the most appropriate body shape for their peers, and the body shape most appreciated by the opposite sex. They were not limited to selecting numerical values corresponding to the images that appear on the scale, but could indicate intermediate values using a scale ranging from 1.8 to 5.2 for which there are no representative images. Therefore, body dissatisfaction (BD), body sexual dissatisfaction (SxBD), body comparative dissatisfaction (CBD) and body dissatisfaction index (BDI) in relation to body size, with BDIabx were calculated (Absolute Body Dissatisfaction Index) > 30% being considered at risk of body image disorders. From the Data Analysis, it appears that there has been an improvement in cognitive functionality, detected with the MMSE (29,20±1,01 *vs.* 29,87±0,35; P=0,012) As for the BIDA, there was a significant difference only between pre and post CBD(-11.17±20.20 vs-20.78 ±20.92: P=0.037).

CONCLUSIONS: These preliminary data are very suggestive and demonstrate the need for a careful choice of physical activity program on people who aspire to a successful aging. The implementation of the collected data will bring further details.

P-24

DELIRIUM AND NEUROPSYCHOLOGICAL COMPLICATIONS IN CRITICAL PATIENTS WITH COVID-19

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Delirium is a generally reversible cognitive disorder, characterized by an acute (hours or days) and fluctuating onset, by a disturbance of memory, attention, language, perception (visual and auditory hallucinations), behavior and thinking. It is very common in hospitalized elderly patients (1-2) and its presence is considered an indicator of poor quality of care (3). Delirium appears to be a frequent complication in intensive care (ICU), with an incidence of approximately 65% - 80%, higher in patients with longer ICU stay, prolonged hospitalization, acute inflammatory response followed by increased need for sedative-hypnotic agents, acute cerebrovascular events.Patients infected with the severe respiratory syndrome virus coronavirus-2 (SARS-CoV-2) often have a systemic disease that develops in addition to respiratory symptoms of the central nervous system, including symptoms of involvement of the central nervous system, with lymphocytic panencephalitis, meningitis, diffuse petechial hemorrhages and damage to the neuronal cells of the brain stem. In general, multiple processes likely contribute to delirium in COVID-19 patients. Delirium can occur during SARS-Cov2 infection due to the direct effect of the virus invading the central nervous system, as well as being related to the secondary systemic inflammatory reaction. This condition facilitates neuro-cognitive deterioration which can lead to unfavorable outcomes.A recent study found that in a cohort of 148 ICU patients with COVID-19, delirium was a common complication, affecting over 70% of patients. Delirium was associated with prolonged hospitalization, longer ICU length of stay, discharge to qualified care facilities, and positive screening for neuropsychological impairment during the months following discharge (4). Delirium occurred in patients who used multiple sedative-hypnotic agents, where acute inflammatory responses, deviation from delirium prevention protocols, and cerebrovascular events occurred, all factors that may have further accelerated the precipitation of delirium. Cognitive dysfunction can also occur following direct coronavirus invasion into the central nervous system (5) or other indirect mechanisms, such as polypharmacy, systemic inflammatory responses, and cerebrovascular events. Cerebral ischemia and inflammation can also contribute to the development of delirium in patients with COVID-19. Stroke has previously been reported in patients with COVID-19, (6) because thromboembolic phenomena and cerebral malperfusion can occur during the clinical course of the disease. Cognitive impairment is common at discharge for patients who have experienced delirium while in ICU, and delirium is present for nearly 20% of newly admitted acute care patients. Additionally, cognitive impairment may be present for months or years after acute respiratory distress syndrome and sepsis (8) In conclusion, delirium is a common complication of COVID-19 with multiple contributing factors and neuropsychological damage may persist in some patients after discharge.

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P-25

THE VALUE OF COMMUNITY NURSE DURING THE COVID 19 PANDEMIC: OUR EXPERIENCE

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INTRODUCTION: The figure of the community nurse acquired more value than ever in the pandemic period; a moment in which the monitoring and home care of the person have proved essential, both to intervene promptly, safeguarding the health of the patient, especially the frail elderly people, and avoiding clogging up hospital wards already in difficulty. The PNRR gives greater concreteness to the local nursing activity; the professional also becomes a "case manager" who takes care of the person and the family on the basis of adequate assistance paths.

PURPOSE: To describe the importance of the Community Nurse, to favor the expansion of nursing skills in the area through multidimensional and multidisciplinary approach.

MATERIALS AND METHODS: Epidemiological observation of our community (Palermiti, Squillace, Staletti, Vallefiorita; afferent to PST of Squillace, DSS of Soverato, ASP di Catanzaro, Italy) with particular attention to frail elderly people; identification of risk factors; preventing chronicity and exacerbations; intervene at a multidimensional level thanks also to the continuous presence of home and local nursing.

RESULTS: Promoting health in the first place, enhancing the offer of local services, improving patient access to them, favoring home care when possible.

CONCLUSIONS: The PNRR, with the transformation of many health structures into Community Homes, contemplating the figure of community nurses, it will increasingly be a place of integration between the various health structures, in order to ensure a coordinated and continuous response to the needs of the population, uniformity the levels of assistance and the plurality of the offer.

P-26

MNESIC DISORDERS IN CHRONIC VASCULAR ENCEPHALOPATHY DUE TO CHRONIC LEAD POISONING: A CLINICAL CASE.

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INTRODUCTION: Lead is a heavy metal widely present in nature with toxic effects on humans. Thanks to its ductility and malleability it has been used for centuries for the production of paints, solvents, drugs, firearms and batteries for motor vehicles. Occupational exposure is a major source for lead poisoning in adults, but it can also occur by ingestion of contaminated food or water. Even retained bullets have rarely been reported as a source of chronic intoxication. Once entered in the body, lead it is largely excreted, while the rest (about 20%) is distributed in the tissues and in particular kidneys, liver, brain and bones causing multiple toxic effects including renal dysfunction, hematopoietic diseases, neurocognitive, intestinal and reproductive disorders.

AIMS: Chronic lead poisoning can be a rare cause of neurocognitive disorders. We report the case of a 79-year-old complaining attentive and mnesic deficits. Anamnestic evaluation and scheletric radiographs revealed the retention of multiple lead bullets. The elevated blood lead levels confirm the diagnosis of chronic lead intoxication.

METHODS: A 79-year-old man with a history of constipation and dyspepsia secondary to hiatus hernia, arterial hypertension, mild to moderate chronic kidney disease, visual impairment in cataract. In chronic therapy with zofenopril, lercanidipine, acetylsalicylic acid, allopurinol and antacids as needed. 11 years ago, he performed a first geriatric evaluation for subjective memory disorders with attention deficit and chronic headache; the neurocognitive tests were normal while the brain MRI showed a vascular-atrophic encephalopathy. At the subsequent annual examinations performed at our clinic, the last one in 2020, the patient reported persistence of the aforementioned disorders, while maintaining stability of functional autonomy and cognitive functions. Deviation of the score was found only in the tests of phonemic verbal fluency and frontal executive functions, while remaining within the limits of normal variability. At the blood chemistry tests there were no significant alterations, resulting in the normal lipid, carbohydrate and thyroid function and the dosage of cyanocobalamin and folic acid. At the evolutionary control through cerebral MRI there was a progression of the known diffuse cortical-subcortical microvascular suffering for which cardiovascular diagnostic study was performed through echo-doppler of the supra-aortic trunks, electrocardiogram and pressure holter that did not show significant alterations. While completing an anamnestic questionnaire for MRI execution, the patient reported the presence, in the left elbow, of multiple hunting pellets present for about 60 years after a firearm accident. The subsequent radiographic investigation confirmed the presence of 39 lead shots; the lead blood dosage was equal to 6.1 mcg/dl (n.v. <3). The patient underwent therefore a surgical removal of 31 hunting pellets. The clinical-instrumental picture induced to hypothesize chronic lead poisoning in patient with chronic vascular encephalopathy in progression without noticeable uncontrolled risk factors. At the next outpatient visit, six months after the surgery, he performed first level neurocognitive re-evaluation which was normal; the second level evaluation showed normal scores, except for a worsening of frontal executive functions, which were deficient. 19 months after the removal of the hunting pellets, the patient continued to complain of difficulty in concentration and short-term memory, while maintaining normal scores at neuropsychological assessment and an improvement of executive functions. He also reported almost complete and persistent remission of systemic symptoms such as headache, constipation and dyspepsia with an overall improvement in quality of life. The determination of the lead at a distance of 21 months was almost halved (3.7 mcg/dl) and at the upper limits of the normal range.

RESULTS AND CONCLUSIONS: The case presented is indicative of chronic exposure to lead retained for over 60 years. As known in literature, soft tissue and bones can represent a slow disposal reservoir of metal at the level of the blood stream. The symptoms complained by the patient are highly widespread and non-specific in the general population. The lack of progression of the neurocognitive disorder and the preservation of autonomy over 11 years were incompatible with a neurodegenerative disorder. After the anamnestic evaluation and the bone radiograph, detecting the retention of multiple lead bullets, a diagnosis of chronic lead intoxication was supposed. This condition could be also related to gastrointestinal disturbances and the cerebral vascular damage, in a patient without other obvious risk factors.Finally, the regression of headache and gastrointestinal symptoms, in parallel with the reduction of the lead blood level, was suggestive of an active role of this mineral in the genesis of the disorder.

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STUDY OF SARCOPENIA IN A GERIATRIC POPULATION

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INTRODUCTION: Sarcopenia is a fragile condition characterized by a reduced muscle reserve and an increased vulnerability of the organism. It is a syndrome mainly linked to age and presents a progressive and generalized loss of muscle mass and strength. By fragility we mean a state of increased vulnerability and reduced resilience towards stressful events (trauma / diseases, etc.), but sarcopenia, which is not synonymous with frailty, means the progressive and generalized loss of muscle mass and function, with increased risk of adverse phenomena (falls, fractures, worse quality of life and increased mortality). Objective: To evaluate sarcopenia in relation to the clinical factors that influence its evolution.

PATIENTS AND METHODS: In the period 2020-2021, 126 guests of a geriatric facility (40 beds) were observed, all women with an average age of 87.5y (range 70-103). Divided into two groups: 1 group 35 great old people (> 90y) and 2 group 91 elderly people (70-89y.) All were carriers of chronic diseases. All were studied for comorbidity (CI) and severity (IS) by means of the CIRS index (Cumulative Ilness Rating Scale), all were subjected to the Tinetti test for balance and falls, and to the SARC-F questionnaire (Simple Questionnarie Rapidly Sarcopenia) for the characteristics of muscle mass. Statistical study using Student test $p < 0.05$ and Chi-Square $p < 0.05$. The study of the muscle mass index would have been interesting.

RESULTS: In the multipathological patients studied, a complex state of fragility is evident which manifests itself with an increased state of severity and comorbidity in subjects over ninety years of age: CIRS / IS=2.2 and CIRS / IC=3.6, while it is less evident in the second group: CIRS / IS1.8 and CIRS / IC=2.8. Between the two groups there is no statistical significance p=ns. In the study of gait and balance (Tinetti test) there is no statistical significance p=ns. Interesting is the application of SARC-F where only in climbing stairs there is a slight statistical significance=0.02.

DISCUSSION AND CONCLUSIONS: In elderly subjects it is useful to recognize early and plan actions necessary to prevent or better to slow down the evolution towards a global functional deficit. Sarcopenia is associated with low muscle quantity and quality, and this is not exclusive to the geriatric age; therefore, sarcopenia is a pejorative element of the organic fragility typical of the elderly. Muscle quantity and quality remain problematic as primary parameters of sarcopenia and detection, in clinical practice also requires the introduction of imaging techniques such as magnetic resonance imaging (MRI protocol total body) or mid-thigh muscle biopsy. Used investigations are the transverse CT scan of the middle thigh muscle, magnetic resonance spectroscopy, bioelectrical impedance analysis (BIA). From our study, there is no statistical significance in the two geriatric groups of different ages, demonstrating that even in the evolution of time, sarcopenia does not evolve fragility of geriatric subjects. Even the modest significance in the ability to climb stairs confirms this hypothesis. The study shows that some pathologies are the cause of a high degree of frailty: vascular / degenerative brain and cardiovascular diseases are mainly the cause of bed rest syndrome. Poor mobilization produces a progressive reduction in

muscle mass and consequently muscle failure. It is obvious that this can also happen at a younger age. Other important causes related to sarcopenia are the presence of metabolic diseases (Diabetes-IBD etc.) which lead, over time, to a reduction in muscle mass - sarcopenic obesity - in the context of excess adiposity. In this context, malnutrition plays an important role in the genesis of sarcopenia. In conclusion, in institutionalized subjects, there remains a state of physical weakness and a constant decrease in muscle mass linked above all to nutrition, the immobilization syndrome and ultimately the presence of comorbidities.

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REGISTRY STUDY FOR THE ASSESSMENT OF THE PERSON WITH DOWN'S SYNDROME: PRELIMINARY DATA FROM THE REVIVIS STUDY

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INTRODUCTION: The Down's Syndrome (DS) is a progeroid condition, part of a group of genetic disorders that mimic physiological aging and are responsible for the early development of clinical conditions that are usually associated with the process of aging (1). Because of their biological, clinical, and social complexity, individuals with DS may benefit from the comprehensive and holistic approach typical of geriatric care.

AIM OF THE STUDY: The aim of the registry study REVIVIS is to generate a database from the information that is routinely gathered during the geriatric outpatient visit of persons with DS. This database will promote the understanding of the syndrome and support clinical decisions in person with DS. This study reports the preliminary data from the first 15 individuals enrolled in the registry.

MATERIALS AND METHODS: This REVIVIS study is a single center, prospective and observational registry study including individuals with DS referring to "VIVI DOWN", a non-for-profit association founded in Milan in 1988 to support care of persons with DS. The database includes biological, clinical, and social information obtained from a comprehensive geriatric assessment. Frailty was assessed through a 45-item Frailty Index (FI; 2), standardized according to the criteria presented by Searle *et al.* (3).

RESULTS: The mean age of the sample was 36 years (SD 10.69); 10 participants (67%) were men. Fourteen individuals (93%) lived with the family, with an average age of 76 years for the father (SD 8.66) and 73 for the mother (SD 8.03). Overall, 33% of participants were suffering from behavioral disorders, and 14% and 27% were usually on antipsychotic or antidepressant drugs, respectively. The most represented comorbidities in the population were: language disorders (67%), dental disorders (67%), cataract (47%), history of bronchopneumonia (40%), history of fractures (33%), gait disorders (33%), hallux valgus (33%), valvular heart disease (27%), hearing impairment (18%).The mean FI was 0.24 (SD 0.10). Frailty exponentially increased with age (R2=0.203), although without achieving the statistical significance (Rho=0.439, 95%IC: -0.111, 0.783). Polypharmacy was significantly and positively associated with the FI (Beta: 0.038, 95%IC: 0.010, 0.067).

CONCLUSIONS: Despite the relatively young age, the characteristics of frailty in persons with DS are comparable with older persons. Indeed, the chronological age does not adequately capture the complexity of persons with DS, and constructs (e.g., frailty) mirroring the underlying biological substratum should be preferred. In line with the rationale of the REVIVIS project, these preliminary data suggest the opportunity to develop personalized and integrated care for person with DS.

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P-29

TREATMENT OF NEUROCOGNITIVE DISORDERS: WHICH ALTERNATIVES IN CLINICAL PRACTICE BEYOND THE CLINICAL TRIAL?

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INTRODUCTION: The objective of the clinician in front of a patient with Mild Cognitive Impairment or overt dementia not a candidate for symptomatic treatment is to prevent slowing the progression of neurocognitive disorder. Regarding the nutritional interventions, there are many observational studies on individual nutrients and their role in aging cognition, but none of the RCTs testing nutritional interventions have measured dementia incidence as an outcome (Coley *et al.*, 2015).

MATERIALS AND METHODS: We summarize some reviews and new evidences of single studies, that highlight effects on elderly cognition of selected nutrients and nutraceuticals.

RESULTS: Dehydration and rehydration can change brain volume according to the hydromolecular hypothesis, therefore it is mandatory to check the hydration status of the patient in any degree of severity of cognitive decline (Duning *et al.*, 2005). The pleiotropic and beneficial effect of the Mediterranean diet has always been known, with few and contradictory studies on single components of the MeDi. As shown by the FINGER study, diet has to a part of several risk factors and mechanisms in late-onset dementia (Rosenberg *et al.*, 2020). Homocysteine and folate have a key role in the pathogenesis of AD (Smith and Refsum, 2016). A meta-analysis of epidemiological cohort studies showed a positive association between serum homocysteine and dementia, without evidence of cause and effect (Wang *et al.*, 2021). A systematic review and meta-analysis demonstrated that true or possible folate deficiency increases the risk of AD (Zhang *et al.*, 2021). So, it is essential to correct any vitamin B12 and folate deficiency in all patients with cognitive decline. For vitamin E and D the evidence of supplementation is less compelling, whereas, patients with neurocognitive disorder may be predisposed to deficiency compared to the general population (Farina *et al.*, 2017, Goodwill *et al.*, 2017). Barbagallo proposes the role of Mg concentrations in the brain in multiple biochemical processes for cognitive functions, with only a few clinical trials in humans in cognitive health (Barbagallo *et al.*, 2021). As selected nutrients, uridine is the major form of pyrimidine nucleoside taken up by the brain, with neuroprotective functions. An international panel of experts declared that, according to randomized trials, Fortasyn Connect (which components are docosahexaenoic acid (DHA); eicosapentaenoic acid (EPA); uridine monophosphate; choline; vitamins B12, B6, C, E, and folic acid; phospholipids; and selenium) should be considered as an

option in the treatment of prodromal AD (Cummings *et al.*, 2019), but in a following Cochrane, the conclusion is different (Burckhardt *et al.*, 2020). Choline is an aceticoline precursor used to synthesize membrane phospholipids. A MEDLINE search suggested that citicoline or CDP-choline (cytidine-5′-diphosphate choline), is effective in improving poststroke cognitive decline (Zhong *et al.*, 2021), while retrospective studies proposed effectiveness and safety of a combination therapy of oral citicoline, memantine, and an AChEI in AD in terms of cognitive and behavioral functions (Castagna *et al.*, 2021). Jasielski confirms procognitive effects of citicoline especially after stroke (Jasielski *et al.*, 2020). Choline alfoscerate is a phospholipid being rapidly absorbed as choline, through the blood–brain barrier increasing acetyl-choline levels in the brain, effective in vascular cognitive decline. The association of donepezil (10 mg/day) to choline alphoscerate (1200 mg/day) may be a beneficial option in reducing the gray matter atrophy, with morphological data consistent with the neuropsychological tests (Traini *et al.*, 2020). N-Palmitoylethanolamide (PEA) is a like endocannabinoid lipid mediator; especially in micronized or ultramicronized forms (i.e., formulations that maximize PEA bioavailability and efficacy), with a therapeutic action in neurodegeneration, (neuro)inflammation in preclinical studies (Beggiato *et al.*, 2019). In a retrospective study in MCI subjects, PEALut group showed a significant improvement in short-term memory MMSE domain (Manni *et al.*, 2021).

CONCLUSIONS: In all patients at risk of cognitive decline or with incipient or manifest disturbance we must correct the dehydration and supplement the folic acid and vitamin B12 deficiency. By virtue of the cholinergic hypothesis, we can introduce cholinergic precursors. We can also intervene on neuroinflammation given the new insights into it in MCI patients. On diet we suggest a Mediterranean diet model inserted in the context of multimodal protection. We can suggest nutraceuticals targeting them for a sin gle patient, considering that especially for moderate and advanced forms of neurocognitive disorder they are not indicated.

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THE USEFULNESS OF MULTIDIMENSIONAL GERIATRIC ASSESSMENT IN THE CHOICE OF ANTITHROMBOTIC THERAPY IN FRAIL ELDERLY SUBJECTS

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INTRODUCTION: Atrial fibrillation is the most common sustained cardiac arrhythmia, whose prevalence increasing with age and it represents a major risk factor for stroke, leading to a five-fold increase in risk. However, older patients were significantly under-represented in the clinical trials. Increased age alone should not be considered a valid reason for withholding antithrombotic therapy. It also important to distinguish fit elderly patients, who should benefit from thromboembolic prevention but are currently undertreated, from very fragile patients who should not take anticoagulants or use them with caution.

OBJECTIVE OF THE STUDY: Evaluate the consistency of the antithrombotic treatment prescribed to elderly patients with atrial fibrillation taking into account the risk stratification but also the multidimensional geriatric assessment to provide a tailored anticoagulation therapy.

MATERIALS AND METHODS: A consecutive series of elderly patients (≥65 years old) with permanent atrial fibrillation were recruited. The diagnosis of atrial fibrillation was confirmed by performing a 12-lead ECG. All patients underwent to the same evaluation protocol which included, in addition to the common clinical-laboratory parameters, the creatinine clearance according to the Cockroft-Gault, CKD-EPI and MDRD formulas, the CHA2DS2-VASc and HASBLED scales, the assessment of home therapy, including antithrombotic therapy, the frailty index according to Fried's criteria, the evaluation of social and functional status, the risk of falling (≥1 fall in the previous six months), the mood with the Geriatric Depression Scale, the nutritional status through the Mini Nutritional Assessment (MNA), the comorbidity according to the Cumulative Illness Rating Scale-Comorbidities (CIRS-C), the cognitive status through the Short Portable Mental Status Questionnaire (SPMSQ), the risk of bedsores through the Exton Smith Scale (ESS) and, finally, the risk of mortality through the Multidimensional Prognostic Index (MPI).

RESULTS: In the study period, 51 patients with permanent atrial fibrillation were recruited, with a mean age of 84.31±5.86 years, 26 of whom were male and with mean CHA2DS2-VASc and HASBLED scores of 4.29±1.37 and 2.92±1.68, respectively. The median of the drugs taken was equal to 7 (IQ 5-8), the number of caregivers equal to 1 (IQ 1-2), the frailty index equal to 3 (IQ 2-4), the ADL equal to 4 (IQ 0 -6), the IADL equal to 1 (IQ 0-5), the GDS equal to 5.5 (IQ 3.75-10), the MNA equal to 17 (IQ 12.5-21.5), the CIRS -C equal to 3 (IQ 3-4), the SPMSQ equal to 4 (IQ 2-7.75), the ESS equal to 16 (IQ 12-18) and the MPI equal to 0.56 (IQ 0.44-0,69). Regarding to the antithrombotic therapy, 2 patients were not taking any therapy, 6 were on antiplatelet therapy, 25 on vitamin K antagonists, 8 on new oral anticoagulants and the remaining 10 on low molecular weight heparin therapy. The comparison of the various subgroups revealed that the subjects treated with low molecular weight heparin and antiplatelet agents were older (p=0.021) and with lower creatinine clearance values according to the Cockroft-Gault formula (p=0.02), while subjects treated with vitamin k antagonists had higher PT and INR values (p <0.001) and those in vitamin K antagonists and low molecular weight heparin had the lowest creatinine clearance values according to the MDRD and CKDEPI formula (p=0.023 and p=0.04, respectively). A trend was also observed for lower albumin values (p=0.066) in subjects treated with low molecular weight heparin and antiplatelet agents and for higher transaminase values (p=0.05) in those treated with new oral anticoagulants and antiplatelet agents. Regarding the multidimensional geriatric assessment, the subjects treated with antiplatelet agents, low molecular weight heparin and new oral anticoagulants showed lower ADL scores (p=0.04), while a trend for higher scores in Fried index (p=0.09) and in comorbidity index (p=0.07) was observed in subjects taking low molecular weight heparin and new oral anticoagulants (p=0.09 and p=0.07, respectively). In addition, higher MPI values were observed in subjects treated with low molecular weight heparin (median 0.69; IQ 0.54-0.76) and new oral anticoagulants (median 0.53; IQ 0.34-0.76).

CONCLUSIONS: The results of our study demonstrate that the multidimensional geriatric assessment can be extremely useful in the choice of the antithrombotic treatment in elderly and in frail subjects. In line with the current evidences, the 35.3% of patients are not treated with oral anticoagulant drugs. However, higher scores in CHA2DS2-VASc scale are observed in subjects treated with new oral anticoagulants (median 4.88) and antiplatelet agents (median 4.5), while the HASBLED score is higher in subjects treated with low molecular weight heparin (median 3.9) and with new oral anticoagulants (median 3.0). The presence of severe renal insufficiency limited the use of new oral anticoagulants, as well as the reduced liver function, suggested caution in the use of vitamin k antagonists. Hypoalbuminemia may be indicative of malnutrition and, probably, in this case a more conservative approach is recommended. In conclusion, a multidimensional geriatric approach should be considered in the stratification of older patients (≥75 years), who are more likely to be frail, and might benefit from an anticoagulation-focused frailty assessment.

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IMPROVEMENT OF EXECUTIVE FUNCTION AFTER SHORT-TERM ADMINISTRATION OF AN ANTIOXIDANTS MIX CONTAINING BACOPA, LYCOPENE, ASTAXANTHIN AND VITAMIN B12: THE BLATWELVE STUDY

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INTRODUCTION: Long-term oxidative stress is believed one of the most important factors contributing to the decline of cognitive function often observable with aging. Brain tissue is highly sensitive to oxidative stress because it has a high request for oxygen and has a relative weakness of antioxidant systems. Furthermore, the brain also contains high levels of polyunsaturated fatty acid, making it more vulnerable to oxidative injuries. Altered mitochondrial function, the amyloid-peptides and the presence of unbound trace metal ions represent the most investigated potential sources of oxidative stress in the brain. Depending on the biomolecules attacked by reactive oxygen species, oxidative stress can promote peroxidation of protein, lipids, and nucleic acids thus favouring the onset and progression of cognitive dysfunction during aging. During the last few years increasing interest has been focused on antioxidants as potentially useful agents in the prevention of the onset and progression of cognitive dysfunction.

OBJECTIVE OF THE STUDY: In this randomized, double-blind, controlled, parallel arm study, the effects of daily consumption of an antioxidant mix on cognitive function in healthy older adults were evaluated.

MATERIALS AND METHODS: After a 1 week run-in period, 80 subjects aged 60 years or more, and with no evidence of cognitive dysfunction, were randomly allocated to a mix of four bioactive compounds (bacopa, lycopene, astaxanthin, and vitamin B12) or matched placebo, taken orally once a day for 8 weeks. The primary objective of the study was to evaluate the changes in trial making test (TMT) scores from baseline to 8 weeks of treatment, analyzed in the following hierarchical order: TMT-B, TMT-A, and TMT-B minus TMT-A. Secondary objectives were changes from baseline to 8 weeks of treatment in verbal fluency test (VFT) score, Montreal cognitive assessment (MoCA) score, MMSE score, and Rey auditory verbal learning test (AVLT) score. Changes of metabolic parameters, including glucose, insulin, homeostatic model assessment for insulin resistance (HOMA-IR), total cholesterol, low density lipoprotein (LDL) cholesterol, high density lipoprotein (HDL) cholesterol, triglycerides and uric acid, and plasma markers of oxidative stress, including 8-iso-Prostaglandin F2alpha and plasma malondialdehyde (MDA) from baseline to week 4 and 8 were also evaluated as secondary objectives.

RESULTS: TMT-B increased in the control group (+3.46 s) and decreased in the active group (-17.63 s). The treatment difference was -21.01 s in favour of the active group (95% C.I. -26.80 to -15.2, $p < 0.0001$). The decrease in TMT-A was significantly higher in the active group (□6.86 s) than in the control group (-0.37 s). TMT-B minus TMT-A increased in the control group (+3.84 s) and decreased in the active group (-10.46 s). The increase in letter fluency in the verbal fluency test (VFT) was also significantly higher in the active group and statistically significant (+5.28 *vs.* +1.07 words; $p < 0.001$). The increase in letter fluency of VFT was significantly higher in the active group and statistically significant (+5.28 *vs.* +1.07 words; $p < 0.001$). The treatment difference was +4.33 correct words in favour of the active group (95% C.I. +1.83/+6.82, p=0.0009). No other statistically significant differences were detected in the other neuropsychological tests performed. A stunning and statistically significant difference between treatment groups was observed in the changes of 8-isoprostane levels between baseline and both week 4 and week 8. The decrease in the control group was -9.82 and -4.14 pg/mL at week 4 and week 8, respectively, and -57.08 and -63.65 pg/mL in the active group ($p < 0.001$). The treatment difference was -65.31 pg/mL in favour of the active group (95% C.I. -91.72 to -38.8, $p < 0.0001$).A statistically significant difference in the changes in plasma malondialdehyde levels between baseline and week 4 was observed: mean plasma malondialdehyde level was decreased by 5.22 and 10.91 pmol/mL in the control and active group, respectively ($p < 0.05$). This difference was no longer evident at week 8 (−2.67 pmol/mL in favour of the active group, 95% C.I. − 11.22/− 5.89, p=0.5363). A significance difference between treatment groups was observed for changes of insulin, blood level from baseline to 8 weeks: -2.31 *vs.* +0.70 in the placebo and active group, respectively; $p < 0.05$. Notably, this significance was likely driven by a huge reduction in plasma insulin levels (-25.3 UI/L) in a single patient under placebo. The same behaviour was observed for HOMA-IR, but the difference was not statistically significant. No other significant differences in the changes of metabolic parameters between baseline and following visits were observed.

CONCLUSIONS: The results of the current study indicate that the regular intake of an antioxidant mix containing bacopa, lycopene, astaxanthin, and vitamin B12 can improve aspects of cognitive performance among healthy elderly subjects. These findings provide encouraging evidence that regular dietary supplementation with bacopa, lycopene, astaxanthin, and vitamin B12 may be an effective dietary approach for counteracting cognitive changes associated with brain aging.

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THE ASSISTENTIAL THERAPEUTIC DIAGNOSTIC PATHWAY (PDTA) FOR HIP FRACTURE IN THE ELDERLY IN THE UNIVERSITY HOSPITAL OF MODENA – BAGGIOVARA HOSPITAL

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BACKGROUND: The Orthogeriatric model of care, increasingly spreading worldwide, proved to be effective in improving outcomes of elderly patient with hip fracture in terms of mortality and functional recovery. In University Hospital of Modena, Orthogeriatric department was born in 2019 after years in which Geriatrician took care of elderly patient by medical consultations.

AIMS OF THE STUDY: In 2022, after two years working, our University Hospital of Modena implemented and published the PDTA (Assistential Therapeutic Diagnostic Pathway) for the elderly with hip fracture. Aim of the study is to evaluate the results of main indicators included in the PDTA on the first years of activity of the Orthogeriatric ward.

MATERIALS AND METHODS: Our PTDA for hip fracture in the elderly consists in four parts:1. Emergency Department: the patient is evaluated by the geriatrician directly in the emergency room; diagnosis, urgent examinations and orthopedic consultations are made (Geriatric Fast-Track). 2. Pre-operative phase in Orthogeriatric ward with the creation of a multi-professional Orthogeriatric Team with geriatric leadership (Sheba Model). 3. In-hospital rehabilitation in a dedicated rehabilitation ward (Orthogeriatric Rehabilitation Unit - ROG) always with the same team working method. 4. Discharge in close continuity with Territorial Services and follow-up.The key points of our Model of care are shown in the following list: • implementation of a work-model based on a multidisciplinary Team made by physicians (Geriatrician, Orthopedist, Anesthesiologist, Physiatrist) and other healthcare members (Nurse Case Manager, Ward Nurse, Physiotherapist, Nutritionist, Social Worker) working together in a highly coordinated and integrated manner with common and shared goals; • early surgery (within 48 hours from hospitalization), allowing mobilization and weight bearing to all patients; • administration of multidimensional geriatric evaluation to all patients (ADL, IADL, Handgrip, SARC-F, Charlson Index, SPMSQ, MNA-SF, 4AT, Barthel Index, SAHFE); • prevention and early management of medical complications (*i.e.* delirium); • specialized nursing (bowel care, management of urinary catheter, assessment and management of pain, delirium, nutrition intake, pressure sores prevention, mobilization); • deprescription and semplification of polytherapy; • daily and weekly meetings with all the members of Orthogeriatric Team; • evaluation and support of nutrition intake in collaboration with Nutritionist; • early start of rehabilitation (within 24 hours from surgery). FKT six days a week. Nurses are part of the recovery program in collaboration with Physiotherapists;• creation of a "person-centered" program (individual caring program) to manage clinical care e rehabilitation needs; • implementation of standard guidelines to manage anticoagulation and anti-platelets therapy during peri-operative period; • specific anaesthetic assistance using Bispectral Index (BIS) to monitor depth of general anaesthesia; • pain control through femoral nerve block method; • antiresorptive drugs prescription at discharge and follow-up in co-operation with Endocrinological Clinic "Osso Fragile" based in Baggiovara hospital; • staff training (ECM annual training, weekly team meetings, continuous field-training).In Our Model of Care results are systematically verified (data collection and monthly targets verification) and regular meetings are planned to discuss about each patient with all team members.

RESULTS: In 2021, 467 patients were admitted to the orthogeriatric pathway. 448 of them underwent surgery (96%), in 82% of cases surgery was performed within 48 hours of waiting. Perioperative mortality (30 days after surgery) was 4.15%, while one-year mortality stood at 22%. FKT management started in 86% of cases on the first postoperative day and in 96% of cases by the second day. Femoral Nerve Block was performed in about 50% of patients. After discharge from ROG, FKT continued at home in 80% of patients by activating the Territorial Rehabilitation Services.

CONCLUSIONS: The implementation of the Orthogeriatric care model and the validation of the PDTA shared by all the specialists involved has led to a big improvement in care as demonstrated by the results of this study.

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STRENGTHENING OF PHISICAL ABILITY PERTAINING RISK OF FALL IN HYPERTENSE ELDERLY SUBJECTS

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OBJECTIVE: This study assessed the physical efficiency and the risk of fall in hypertense elderly people.

METHODS: 25 women (mean age 76+5) and 12 men (mean age 75+3) with a history of Hypertension and already under specific treatment have been included opposed to a non-hypertense control group (23 women mean age 76+2 anni;12 men mean age 78+5). The design of the study included: 1) Clinical Measurement of Blood Pressure (MBP); 2) Short Physical Performance Battery (SPPB); 3) Tinetti balance and gait Scale (TS).

RESULTS: Among hypertense subjects 7 women and 4 men had a mean 24+4 Tinetti score showing a low risk of fall; 8 women and 6 men had a mean 14+5 score indicating a high risk of fall. 6 women and 5 men in the control group scored 25+3 showing a low risk of fall, while 3 women and 3 men scored average 16+3 showing a high risk of fall. Those hypertense subjects whose Tinetti score indicated a high risk of fall also showed significant relations between risk of fall and physical efficiency ($p<0.01$) while the control group did not show a relevant connection. Hypertense patients who were also diagnosed a reduced efficiency through a mean score 6 at the SPPB in 89% cases scored an average value 12 at the TS, therefore showing a risk of fall. To improve the physical efficiency in the eldest with a high risk of fall we also proposed an occupational therapy home programme.

CONCLUSIONS: This study shows a significant connection among hypertension and reduced physical efficiency. Therefore the evaluation of people affected by hypertension and with a high risk of fall is relevant and we strongly recommend the prevention of this risk at home via an occupational therapy programme.

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RISK OF SARCOPOENIA IN AN ORTHOGERIATRIC PROJECT INVOLVING ELDERLY PATIENTS WITH FEMORAL FRACTURES

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OBJECTIVE: 93 elderly patients with femoral fractures have been hospitalized in the Orthogeriatrics. The aim of the integrated rehabilitative OT programme was to evaluate the prevalence of sarcopoenia and to reestablish the functional condition prior to fracture descending from bony brittleness.

METHODS: They have been assessed through a multifaceted (orthopedic-geriatric-rehabilitative) approach using MMSE, BADL, IADL, Barthel Index. Osteoporosis and Sarcopoenia were assessed through DEXA Bone Densitometry.

RESULTS: The standing position recovery for 57 patients

started within 3 days after prosthesis surgery due to femoral fracture. They were dismissed after a 15/25-day hospitalization. 34 elderly subjects recovering from osteosynthesis regained the sitting position in 2-3 days, load tests were made between 7 and 14 days and they left the unit 30/45 days after admittance. At discharge 9 subjects affected by femoral fracture and sarcopoenia (mean age 78+5) were moved to the Extended Care Unit for lack of assistance at home. There they followed an Occupational Therapy (OT) programme including aims like: 1) performing lower limbs mobilization through specific exercises; 2) working on muscle fibers type 2 to counterbalance the muscle loss. The group including patients following the programme was then compared to one including 8 subjects affected by femoral fracture and sarcopoenia (mean age 77+ 6) discharged and going home to their caregivers after femoral fractures. A 6-month individual OT programme at the Extended Care Unit showed: 1) improvement in motor skills detected through scales scores (BADL 3.3/6 > 4.5/6 - IADL 2.5/8 > 5.7/8 - Barthel Index 50/100 > 90/100); 2) improvement both in muscle mass and muscle strength.

CONCLUSIONS: Effectiveness of a OT programme focused on walking ability and muscle strength recovery, aimed at patients discharged after femoral fractures and osteosynthesis, was evaluated. The Occupational Therapist approach was customized in order to make the patient regain his self-assurance and independence.

P-35

STRENGTHENING OF PHISICAL PERFOMANCE PERTAINING RISK OF FALL IN FRAIL ELDERLY PEOPLE WITH SEVERE OSTEOPOROSIS

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OBJECTIVE: This study evaluated the differences in the physical perfprmance and risk of fall in old oldest people affected by severe osteoporosis. Falls are quite frequent in the eldest and therefore lead to a high risk for morbility and mortality causing death in 72 % of all deceases due to falls among all the people.

METHODS: The subjects were all > 85: 45 women (mean age 88+3) and 6 men (mean age 88+2) affected by severe osteoporosis.In 7 women and 1 man we discovered a new spinal fracture after note-79-drug treatment.38 women and 3 men had multiple spinal fractures (>3).The subjects were prescribed teriparatide treatment (PTH 1-34).The design of the study included at T0-T24:1) spine and hip DEXA densitometry; 2) spine X-ray with morphometry; 3) Blood tests (Blood count, Protydogram, Creatinine, Phosphotemia, Calcium, Phosphaturia, Calciuria, Transaminase, Parathormone, FT3, FT4,TSH). The physical performance was assessed through the Short Physical Performance Battery (SPPB) which results in a combination of a balance test according to 3 increasingly difficult positions,a walking test on a 4-metre-course and a standing-up test from a chair,and whose final SPPB score was comprised between 0 and 12. The Tinetti balance and gait Scale inspects the balance and the gait and shows a variability in score: score<1 indicates non walking; 2<score<19 walking but with a high riscк of fall; score> 20 walking with a low risk of fall.

RESULTS: At T0 we considered:1) Short Physical Performance Battery Geriatric:mean score 7 in 78.9% subjects ($p<0.05$);2) Tinetti balance and gait scale:mean score 8 (higt risk of fall) 83.8% subjects ($p<0.5$);mean score 1 (non walking) 16.2% subjects ($p<0.5$). At T24 we evaluated:1) Short Physical Performance Battery:mean score 9 in 61.3% subjects ($p<0.05$);2)Tinetti balance and gait scale:mean score 14 (high risk of fall) 93.1% subjects ($p<0.5$),mean score 1 (non walking) 6.9% ($p<0.5$). At T0 we also detected. At T24 in all subjects we detected no new spine fractures through spine X-rays and morphometry. To improve the physical efficiency in the eldest with a high risk of fall we also proposed an occupational therapy home programme.

CONCLUSIONS: The study evaluated in the old oldest affected by severe osteoporosis the incidence of spine fractures in the spine region. Since a reduced physical performance and on increase in the risk of fall indicate frailty in the elderly affected by score osteoporosis, we inspected, after teliparatide treatment (PTH 1-34), the markers's severity variations. Therefore the evaluation of frail elderly people with severe osteoporosis and with a high risk of fall is relevant and we strongly recommend the prevention of this risk at home via an occupational therapy programme.

P-36

ROLE OF NUTRITIONAL ASSESSMENT IN ELDERLY PATIENTS WITH HEART FAILURE

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INTRODUCTION: Heart failure in the elderly is a proper geriatric syndrome nowadays and its features affecting nutritional status are so often misdiagnosed and underestimated. ScopeWe aimed to summarize the role of the assessment of nutritional status in the elderly with chronic heart failure for standardizing the nutritional therapeutic approach to this common condition.

MATERIALS AND METHODS: A qualitative literature review focused on best nutritional and metabolic assessment tools for elderly affected by chronic heart failure. We analyzed more than 120 articles and found out 11 specific and validated tools for assessing nutritional status in over65 people.

RESULTS: It is important to properly define the settings in which the patients are observed (hospital, nursing home, home). We observed that of the 11 tools found out, only the Prognostic Nutrition Index, the Mini Nutritional Assessment and its Short Form, the Geriatric Nutritional Risk Index and the Controlling Nutritional Status were studied for chronic heart failure, both in hospital and at home or nursing home.

CONCLUSIONS: Among these, the best tool, according to prognostic power, number of considered patients and low inter-operator variability was the Mini Nutritional Assessment. From our analyses, nutritional status assessment is a critical point in clinical course, too often postponed or badly conducted and underestimated with its importance in terms of prognosis and quality of life.

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P-37

VALIDATION OF NOTTINGHAM HIP FRACTURE SCORE IN ITALIAN PATIENTS WITH HIP FRACTURE

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AIMS: The Nottingham Hip Fracture Score (NFHS) has been validated in UK to estimate the risk of 30-day mortality after hip fracture surgery. It takes into account multiple parameters (es. age, cognitive status and comorbidities) and allows patients to be stratified into risk classes, to evaluate the best therapeutic approach. Our study aims to evaluate its reliability in a sample of Italian orthogeriatric patients managed according comanagement.

METHODS: This is a retrospective study conducted on orthogeriatric patients who underwent surgery from May to July 2021. Personal and clinical information was collected through computerized medical records. Survival status at 30 days was identified through to regional mortality records. Descriptive analyses are reported.

RESULTS: Were examined data collected on 90 patients, mainly women (n: 64; 71%), with an average age of 83 years. The majority of patients have an NHF score between 4 and 7 with poor representation of subjects with score <3 and absence of subjects with score> 8. In detail, most patients scored 4 (n: 29; 32%), 5 (n: 26; 28.8%) and 6 (n: 19 ; 21.1%), then 7 (n.12; 13.3%), 4 (n.6; 6.7%), 1 (n.5; 5.5%), and 2 (n.3; 3.3.%). Death 30 days after surgery was observed in 1 (1.1%) subject, whose NHF score was 7. There was no death at 30-day and the incidence was 3.3% (n: 3) at three months.

CONCLUSIONS: It is necessary to expand the sample size to evaluate the relationship between NHF score and mortality risk 30 days after surgery for hip fracture.

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ANATOMICAL FACTORS TRIGGERING PLTYPNEA-ORTHODEOXIA SYNDROME IN ELDERLY TRATED BY PERCUTANEOUS FORAMEN OVALE CLOUSURE: A CASE REPORT

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INTRODUCTION: Platypnea-Orthodeoxia Syndrome (POS) is a rare condition characterized by dyspnea and hypoxemia in orthostatism which subside in recumbency. This entity requires a high degree of clinical suspicion and is likely underdiagnosed in medical practice, nevertheless its recognition has important implications on management and quality of life. The syndrome can be due to: intracardiac right-to-left shunts RLS (with and without elevated right chamber pressure), ventilation-perfusion mismatch, and pulmonary arteriovenous shunts. Intracardiac shunting without elevation of right cardiac chamber pressures, the principal intracardiac cause of POS, is determined by the coexistence of congenital interatrial defects (mainly Patent Foramen Ovale [PFO]), combined with acquired structural thoracic-abdominal conditions such as kyphoscoliosis or aortic root dilation, which are common in the elderly and determines emergence of the shunt later in life. Many of these patients can undergo percutaneous PFO closure with positive outcomes, making this the treatment of choice. We report on the case of a patient admitted to our clinical ward in November 2021 presenting with POS caused by intracardiac RLS in the presence of POF, normal pressure gradients and ascending aortic aneurism.

CASE DESCRIPTION: An 84-year-old woman was admitted to our hospital with a diagnosis of suspected TIA with aphasia and confusion associated with dyspnea. The patient had a history of mild cognitive impairment, two prior ischemic strokes, recurrent TIA (the last of which was two months earlier) and multiple falls. She had also undergone a combined aortic valve replacement and coronary artery bypass graft for severe valvular regurgitation associated with a mild ascending aortic dilation of 40 mm. The patient had been diagnosed on that occasion with interatrial septal aneurysm and paroxysmal atrial fibrillation. Upon physical examination, BP were 130/80 mmHg, HR 80 bfm, continuous pulsioximetry in oxygen supplementation with 100% FiO2 showed StO2 92% in the supine position. During hospital stay the patient presented pre-syncopal episodes in the sitting or upright positions associated with platypnea and orthodeoxia (with a saturation as low as 75% in 100% FiO2) treated with high-flow oxygen therapy. ECG showed sinus rhythm with nonspecific repolarization abnormalities. Encephalic and thoracic TC excluded both ischemic stroke and pulmonary embolism respectively. Based on the suspicion of intracardiac shunting, the patient underwent transthoracic echocardiogram which showed a well-functioning aortic valve, interatrial aneurysm, and aortic dilation in the absence of a visible shunt. Therefore, transcranial Eco Doppler and transesophageal echocardiogram were performed: the former showing the passage of contrast in both basal conditions and after Valsalva maneuver; the latter showing septum primum aneurysm with an accessory fenestration, horizontal aorta associated with severe aortic bulbus dilation (50 mm), notable right.to-left shunt in basal conditions, and PFO after Valsalva maneuver. The patient subsequently underwent transcatheter PFO closure with a GORE 30 mm device inserted through the accessory fenestration. Following the intervention, pulsioximeter measurements returned to normal in both recumbency and orthostatism and the patient was able to return to the upright position and ambulate regularly.

DISCUSSION: Normally, right atrial pressures are lower than left atrial pressures and therefore atrial septal defects do not typically generate RLS. However, some anatomical abnormalities (*e.g.* Eustachian valve, kyphoscoliosis, or aortic root dilation) can promote flow directly from the vena cava into the left atrium, even in the presence of normal pressure gradients. In our patient's case, an aortic root dilation, combined with a septal aneurism, produced a leftward shift of the interatrial septum subsequently maintaining the foramen ovale open (spinnaker effect). These mechanisms, combined with a forward transposition of the heart in the upright position, would explain the presence of POS, paradoxical emboli, strokes and recurrent TIA.

CONCLUSIONS: A growing number of cases of POS in the elderly have been described in scientific literature, especially in the presence of congenital cardiac septal defects and abdominal-thoracic abnormalities prevalent in this population. These elements combine to create a RLS even in the presence of normal interatrial pressure gradients. Identification of the cause of RLS is paramount for the correct management of this condition, considering that percutaneous PFO closure reduces symptoms, even though the only indication for this procedure remains prior cryptogenic stroke.

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P-39

ROLE OF DONEPEZIL IN PATIENTS WITH MCI DUE-TO-AD AND OVERT ALZHEIMER'S DISEASE

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INTRODUCTION: Although the current diagnostic methods are extremely precise to early identify Mild Cognitive Impairment (MCI) due-to-AD, at the moment the available therapies for this pathological condition are still very limited. Indeed, previous studies conducted on patients with generic MCI (namely that also due to Cerebrovascular Disease or other causes) did not report any benefits with Acetylcholinesterase Inhibitors (Ache-I) therapy.

AIM OF THE STUDY: This study aims to assess the effectiveness of therapy with Donepezil in patients with diagnosis of MCI due-to-AD and overt Alzheimer's Disease (AD), estimated trough the time variation of cognitive performances (Mini Mental State Examination –MMSE–) and functional status (Basic Activities of Daily Living –BADL– and Instrumental Activities of Daily Living –IADL–). We hypothesized that early therapy in patients with initial AD, such as with diagnosis of MCI due-to-AD, might delay the progressive loss in cognitive performances and functional status more effectively than in those with overt disease.

MATERIALS AND METHODS: A retrospective study was conducted on patients attending the Center of Cognitive Disorders and Dementia (CDCD) of the Geriatrics Unit in University Hospital of Ferrara, from January 2017 to December 2021. The inclusion criteria were: 1) access to the CDCD ambulatory care setting; 2) diagnosis of MCI due-to-AD or overt AD, according to National Institute on Aging and the Alzheimer's Association (NIAA-A) criteria; 3) start of therapy with Donepezil. Each patient was enrolled in the study on the first pharmacological prescription. For each patients, socio-demographic and clinical data were collected. During the first pharmacological prescription (t0), and at 6 (t1) and 12 (t2) months, the patient's cognitive performance and functional status were evaluated using MMSE, corrected for age and schooling, and BADL and IADL, respectively. The primary outcome was the variation in cognitive performance and functional status at the three periods of observation.

RESULTS: Fifty-three patients were enrolled with a mean age was 78.2 years (SD: 5.6) and 62.3% (N=33) were female. Of those, 52.8% (N=28) reported a diagnosis of MCI due-to-AD and 47.2% (N=25) of overt AD. At baseline (t0), the overall mean of MMSE was 23.0 (SD: 2.2), of BADL 5.5. (SD: 1.1) and of IADL 5.0 (2.2). Patients with overt AD were significantly older (81.5 years *vs.* 75.2 years, $p < 0.0001$) and more functionally impaired (BADL 6.0 *vs.* 5.0, p=0.001 and IADL 6.4 *vs.* 3.3, $p < 0.001$) compared to those with MCI due-to-AD. During the follow-up, a progressive and significant decrease in BADL and IADL was observed in all patients, while there were no significant changes in MMSE scores. Comparing the MMSE, BADL and IADL scores during the follow-up and between the two groups, at t2 an increase of 1.1 points in the BADL mean difference (95% CI: 0.4–1.7, p=0.002) was pointed out. No further significant differences were found.

CONCLUSIONS: According to our results, an early initiation of Donepezil therapy in patients with MCI due-to-AD might be effective in slowdown the BADL decline compared to patients with overt AD undergoing the same treatment. No further significant differences were found from the comparison of MMSE and IADL scores between the two groups over follow-up time, probably due to the small sample size and the short duration of follow-up compared to the prognosis of the disease.

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P-40

PROGNOSTIC VALUE OF MAGNESIUM IN COVID-19: FINDINGS FROM THE COMEPA STUDY

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BACKGROUND: Magnesium (Mg) plays a key role in various diseases, including infectious ones. However, its role in coronavirus 19 (COVID-19) is still underexplored, particularly in case of long term sequalae. Therefore, the aim of this study is to determine the prognostic significance of serum Mg levels in older people affected by COVID-19.

METHODS: Patients affected by COVID-19 enrolled between January 2020 and May 2021 were divided in serum Mg levels<1.96 *vs.* 1.96 mg/dl, according to the Youden index. Outcomes of interest were in-hospital death, length of stay during hospitalization, incidence of long COVID symptomatology, both mental and physical problems.

RESULTS: A total of 260 participants (mean age 65 years, 53.8% males) had valid Mg measurement. Serum Mg, with age and sex, had a good accuracy in predicting in-hospital mortality (area under the curve=0.83; 95%CI: 0.74-0.91).Low Mg serum at admission significantly predicted in-hospital death (HR=1.29; 95%CI: 1.03-2.68) after adjusting for age, sex, comorbidities, renal function, presence of respiratory failure, and C reactive, hemoglobin, and maximum Mg levels during hospitalization. A value of Mg < 1.96 was associated with a mean longer length of stay compared to those with a serum Mg >1.96 (15.2 *vs.* 12.7 days; p=0.048). In 95 patients, low serum Mg was associated with a higher incidence of long COVID symptomatology (OR=2.14; 95%CI: 1.30-4.31), particularly post-traumatic stress disorder (OR=2.00; 95%CI: 1.24-16.40).

CONCLUSIONS: Low serum Mg levels could predict mortality and complications related to the disease, like longer length of stay or onset of Long COVID symptoms indicating that to measure serum levels of Mg in all patients in the different stages of COVID-19 could predict complications related to the disease.

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A STRUCTURED SCHEDULE TO TAPER GLUCOCORTICOID TREATMENT IN PATIENTS WITH SEVERE SARS-COV 2 INFECTION CAN PREVENT ACUTE ADRENAL INSUFFICIENCY IN GERIATRIC POPULATION

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INTRODUCTION: Glucocorticoids (GCs), alone or combined with other drugs, are widely used in patients affected by severe acute respiratory syndrome (SARS) during COVID-19. The RECOVERY trial, published in July 2020, reported that high doses of dexamethasone (6mg) for a brief period (up to 10 days) are effective in reducing intermediate (28-day) mortality among patients who were receiving either invasive mechanical ventilation or oxygen alone (3). Nonetheless, dexamethasone is the most

potent synthetic GC: 1 mg of dexamethasone it able to suppress hypothalamic-pituitary-adrenal (HPA) axis. Therefore, adrenal insufficiency is to be considered after GC withdrawal, because it is a life-threatening condition if unrecognized and untreated. Other conditions can induce adrenal insufficiency during or after COVID-19: critical-illness related corticosteroid insufficiency (CIRCI), co-administration of some antiretroviral drugs metabolized through CYP3A pathway, direct negative effect of coronavirus on pituitary corticotroph cells, bilateral adrenal hemorrhage.

AIM: A pre-defined schedule to taper the high-dose and long-acting GC used in patients with COVID-1, in order to prevent adrenal crisis after GC discontinuation.

MATERIALS AND METHODS: All patients with severe COVID-19 infections (requiring oxygens, mechanical ventilation and/or hospitalization intensive care unit) were treated with dexamethasone 6mg for 10 days, then a fixed schedule to reduce GC was proposed. It consists in a step-by-step GC tapering with prednisone, the reduction was 33-50% every 3 days, with daily clinical control. There were 9 days of supra-physiological GC doses and 6 days of substitutive GC. Three days after the last dose of prednisone, electrolytes and morning serum cortisol were assessed. A substitutive treatment with cortisone acetate was started in case of serum cortisol <270 nmol/L or signs/symptoms of adrenal insufficiency onset.

RESULTS: The Geriatric division of the University-Hospital of Padova was dedicated to COVID-19 patients from November 2021 to May to 2022, during the fifth pandemic wave. Overall, a total of 233 patients were admitted (mean age 82 years, female to male ratio 1.04:1, 74% completed the COVID-19 vaccination schedule). 24% were firstly admitted in an Intensive Care Units, 42% in the Infectious Disease Unit (and then moved to the Geriatric division after the cure of severe infection), and 26% were hospitalized from the Emergency Department. Considering the entire cohort, after the exclusion of patients that do not require dexamethasone and those that were discharged with a long-term steroid treatment, 121 patients met the inclusion criteria. All were treated with dexamethasone, and then the GC tapering was performed according to our structured schedule. At the end of GC withdrawal, no adrenal crisis as well as signs or symptoms of acute adrenal insufficiency were reported. A morning serum cortisol levels below the proposed threshold of 270 nmol/L has been observed in two cases (respectively 173 and 239 nmol/L), and a substitutive treatment with cortisone acetate was started, in order to re-assess HPA axis after the SARS-CoV 2 infections. A mild hyponatremia (serum sodium 132 to 134 nmol/L) was observed in five patients, without relationship to cortisol levels. Mean serum cortisol levels on the fourth day after prednisolone withdrawal, according to our schedule, was 445±89 nmol/L in patients that were not treated with cortisone acetate. Likewise, electrolytes were normal after GC discontinuation (sodium 139±3 nmol/L, potassium 4±0.7 nmol/L).As limitations we acknowledge the design (perspective but not controlled or randomized) and the number of patients enrolled.

CONCLUSIONS: A structured schedule to taper GC treatment, used in patients with severe COVID-19, is able to reduce the risk of adrenal crisis and acute adrenal insufficiency.

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TELEHEALTH VISITS FOR SECONDARY PREVENTION OF FRAGILITY FRACTURES AMONG HIGH-RISK OLDER ADULTS: PRELIMINARY RESULTS

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AIMS: Telehealth has been proposed as a strategy for providing care and monitoring patients with chronic diseasesduring COVID-19 pandemic. We investigated the efficacy of televisits among older adults at high-risk of fragility fractures already under treatment at our fracture liaison service. Then, the patients' and caregivers' degree of satisfaction with the service.

METHODS: Televisit was offered to patients at high-risk of fragility fractures already on specific treatment. An official platform and formal deviceswere used. They allowed for patients' visualization and clinical evaluation, including comorbidity, polypharmacy, functional status, adverse events. Patients' and caregivers'satisfaction was also investigated.

RESULTS: 261 patients at high-risk of fragility fractures received telehealth visit from January to June 2021. Patients were mainly women (n:235, 90%) with mean age of 80.10±8.4 years. About 10% of them had single vertebral fracture, 29% hip fracture, 28% multiple vertebral fractures and 16% vertebral and hip fractures. Virtual visits were effective in 167 (64%) patients, then not requiring additional face-to-face assessment. About 68% of patients were adherent to the anti-fracture treatment, including specific drug, vitamin D and calcium supplements. The majority (n:200, 77%) did not refer falls, while 3% experienced ri-fractures in the previous 6 months.High degree of satisfaction for the service was reported by 85% of patients and by 90% of caregivers.

CONCLUSIONS: Televisit may be an effective tool for monitoring older adults at high-risk of fragility fractures other than for selecting people requiring access to face-to-face visit. It can also be useful in time away from pandemic.

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ASSOCIATION BETWEEN IL-15 AND INSULIN RESISTANCE: THE ROLE OF BODY MASS INDEX

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INTRODUCTION: Inflammation and aging processes contribute to the development of insulin resistance (IR), but the roles of different inflammatory and other cytokines in this process remain unclear. Thus, we analyzed the association between various plasma cytokines with IR, measured by the metabolic score for insulin resistance (METS-IR).

METHODS: We measured the serum concentrations of 30 cytokines from a cohort of 132 older persons and analyzed their role as independent factors for IR. We used regression analyses adjusted for known IR-associated factors (including age, gender, cholesterol levels, and BMI) to find the determinants of IR.

RESULTS: The study evaluated 132 subjects, mostly women (82F/50M), slightly overweight and with a mean age of 78.5±6.5 years. In all population IL-15 significantly and negatively correlates with METS-IR (r= - 0.183, p=0.036). A regression model showed that the association between IL-15 and METS-IR was significantly modulated by gender and BMI (R2: 0.831; p<0.0001).

CONCLUSIONS: IL-15 is a pleiotropic cytokine and plays a significant role in developing inflammatory and protective immune responses by modulating immune cells of both the innate and adaptive immune systems. Previous studies showed that IL-15 correlates negatively with adiposity indices, especially visceral fat. Increased adiposity, resulting in reduced IL-15 plasma levels, may link this cytokine with insulin resistance in older persons.

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MAJOR MEDICAL ALTERATIONS POTENTIALLY CAUSING SURGICAL DELAYAMONG ORTHOGERIATRIC PATIENTS

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AIMS: Early surgery is the goal of treatment among orthogeriatric patients leading to better outcomes for patients and healthcare systems. Previous studies report medical alterations that may delay surgery if not promptly identified and managed. Early preoperative medical optimization is crucial for anesthesiological and surgical suitability. We aim to highlight the prevalence of major clinical alterations among orthogeriatric patients upon admission.

METHODS: This is a prospective observational study on orthogeriatric patients evaluated within 12 hours from admission since May 2019. Data were collected according to the multidisciplinary consensus criteria related to unfitness for surgery. We performed a descriptive and inferential analysis to identify predictors of early surgery.

RESULTS: 296 patients enrolled, 200(67%) with minor alterations and 96(32%) with major alterations, which may led to a delay in anesthesiologist approval for surgery. In our sample, 27(28%) of patients were on new oral anticoagulants and undergo surgery within 48h; 13(13%) patients had alterations related to blood pressure, 11 (10%) patients had acute heart failure, 10 (10%) patients had dysionia, 10 (10%) patients had acute respiratory failure, while lower proportion had IRA, anemia, glycometabolic decompesation, cardiac pain with pathological EKG and rhythm disturbances.

CONCLUSIONS: One out of three orthogeriatric patients has major alterations potentially delaying surgery since admission. Early compherensive assessment and management tailored for this setting may optimize access to surgery.

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REGISTRY STUDY OF OLDER PATIENTS ADMITTED TO A GERIATRIC ACUTE CARE UNIT: THE REGEMA PROJECT

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INTRODUCTION: Frailty is a state of increased vulnerability to stressors, enhancing the risk of adverse outcomes. It is very common in the older population [1], especially in persons experiencing a stressful event as a hospitalization. Persons with frailty are traditionally excluded from clinical trials because of their biological, clinical, and social complexity, with consequent issues in the conduction of evidence-based practice [2-3]. Under this perspective, registry studies may represent a valuable tool for clinical research in geriatrics.

AIM: The aim of the REGEMA study is to generate a database relying on the clinical information that is routinely gathered at the admission of the older person in the acute care unit. The current study presents the preliminary data about the frailty condition of the patients enrolled in the REGEMA study.

MATERIALS AND METHODS: Data are from the REGEMA registry. To date, REGEMA is a single center, prospective and observational registry study of older patients consecutively admitted to a geriatric acute care unit. The study started in May 2021 at geriatric acute care unit of the IRCCS Istituti Clinici Scientifici Maugeri (Milan, Italy). The data collected in the registry includes biological, clinical, and social information obtained through the comprehensive geriatric assessment administered at the admission to the ward. Frailty was measured using the Clinical Frailty Scale (CFS) and a 38-item Frailty Index (FI). Correlation analysis and linear regression models were performed to examine the relationship of frailty with other markers of clinical complexity.

RESULTS: The sample was composed by 151 patients (45% men) with a mean age of 83.6 years (SD 7.4). The median number of comorbidities was 6 (IQR 4-7). The mean FI value was 0.31 (SD 0.10); 75% of the population was frail as presenting a FI >0.25. Similar results were obtained if the CFS was used (prevalence of frailty 68.9%). A significant correlation was reported between FI and CFS (Spearman's R: 0.596; 95% CI: 0.476–0.695). However, the association showed a non-linear pattern (CFS Beta: 0.020, 95% CI: 0.015, 0.025 against the FI; P for non-linearity=0.046). Statistically significant positive correlations were also found between the FI and other variables of interest (i.e., age and number of diseases).

CONCLUSIONS: Frailty is a highly prevalent condition in hospitalized older people. Developing research activities in the hospital environment is crucial to capture the heterogeneity and the peculiarities of the older person suffering from acute diseases. The REGEMA project could federate different clinical units to support evidence-based medicine in the geriatric field and promote the implementation of the comprehensive geriatric assessment as routine practice.

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THE MULTIDIMENSIONAL PROGNOSTIC INDEX (MPI) SCORE HAS AN IMPACT ON PREDICTING OUTCOMES IN SURGICAL PATIENTS REGARDLESS OF CHRONOLOGICAL AGE

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INTRODUCTION: Age itself is not a factor for selection of appropriate patients who can benefit from general surgery, whereas cognitive or functional frailty could be. Recently, a novel conceptual model of frailty has emerged based on the loss of harmonic interaction between multiple domains. Our aim is to establish the prognostic role of Multidimensional Prognostic Index (MPI) in abdominal surgical setting.

METHODS: Prospective observational study, enrolling adult (<65 years) and older (>65 years) subject underwent general surgery between July 2020 and January 2022. All subjects with complete cognitive, functional, nutritional assessments were included and divided into three groups according to the MPI score. The primary endpoint was length of hospital stay (LOS); secondary endpoint was 6-months overall survival.

RESULTS: Overall, 133 patients were included. Mean age was 67±13 years, mean Charlson comorbidity index was

24.7±11.5, mean MPI score was 1.34±0.6, mean LOS was 9.7±9.3 days. Cancer affected 84 (63.1%) patients. According to Fried's criteria, 67 (50.4%) were pre-frail and 39 (29.3%) frail. Ninety-nine (74%) patients belonged to MPI-1 group, 23 (17%) to MPI-2 group and 11 (9%) to MPI-3 group. Longer length of in-hospital stay was observed in MPI-3 group (95% CI=6.42-15.76, p=0.008). The survival rate progressively decreased in the three MPI classes of risk with a 6-month survival of 95.9%, 59.7%, 55.6% in groups MPI-1, MPI-2, and MPI-3 (p < 0.001). Kaplan-Meier survival estimates similar results in both adult and older subjects.

CONCLUSIONS: In surgical setting, MPI may be very useful in the daily clinical practice to predict LOS and the prognosis, regardless of chronological age.

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GENDER DIFFERENCES IN OLDER PATIENTS AFFECTED BY LONG COVID: THE COMEPA STUDY

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BACKGROUND: The long-term consequences of the coronavirus disease 19 (COVID-19) are likely to be frequent, but results hitherto are inconclusive in older people, particularly regarding possible gender differences. Therefore, the aim of our study was to investigate the incidence of Long COVID symptomatology (general and specific) with a particular attention to the possible differences between men and women.

METHODS: A phone questionnaire was administered to detect Long Covid signs and symptoms defined using the World Health Organisation criteria. In addition, the Hamilton Hospital Anxiety and Depression Scale and a test for investigating Post Traumatic Stress Disorder was administered to all older people hospitalised in our hospital between March 2020 until May 2021.

RESULTS: Among 198 patients, 98 older participants (mean age: 74 years, 48.3% females) were included. After a median of 19 months, 51.9% of the patients still had signs/symptoms attributable to COVID-19 (60.9% in males *vs.* 41.9% in females, chi-square p-value=0.03). Older males had a higher incidence of Memory Impairment (28.3 *vs.* 9.3%, p=0.02), Difficulty Concentrating (30.4 *vs.* 9.3%, p=0.01) and Cough (8.7 *vs.* 0.1%) than older females. No other significant differences were observed between men and women.

CONCLUSIONS: Long COVID is a common condition in older patients who have been infected with SARS-CoV-2.We highlighted, for the first time, the most frequent long COVID signs/symptoms in older people and gender differences, showing that older men have a higher incidence of cognitive issues and cough than older women.

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CORONAVIRUS DISEASE SYMPTOMS IN A HOSPITALIZED GERIATRIC POPULATION

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INTRODUCTION: Coronavirus disease (COVID-19) caused by SARS-CoV-2 affected millions of people. Older adults are more at risk of developing severe forms of COVID-19 (1-3). Clinical features of many diseases in older adults are different from younger ones. Difficulties in interpreting the clinical symptoms in older adults may blur the diagnostic process.

OBJECTIVE: Aim of this study was to identify the more common COVID-19-linked symptoms in older adults (>65 years) and to define COVID-19 geriatric patients' peculiarities during the disease.

MATERIALS AND METHODS: This observational retrospective study was made in "Geriatria Calogero" Department of S.Orsola General Hospital in Bologna. We evaluated medical records of the patients hospitalized from 1 March to 30 April 2021. Informations were recorded anonymously. We included in this study patients of >65 years old with SARS-CoV-2 infection's diagnosis confirmed through molecular swab. For every patient we took into consideration: age, sex, presenting symptoms, mortality.

RESULTS: 226 patients were admitted to "Geriatria Calogero" Department. 201 were >65 and were included into the study.General analysis. Average age of 201 enrolled patients was 83,4 years old. 112 patients (55,7%) were female, the other 89 were male (44,2%). Symptomatic patients were 195 (97%). Fever was the most common symptom (137 patients, 68,1%), followed by dyspnea (86 patients, 42,7%), cough (75 patients, 37,3%), weakness (39 patients, 19,4%), gastrointestinal symptoms (38 patients overall, 18,9%; 23 patients had diarrhea, 11,4%, 18 patients had nausea or vomiting, 8,9%, 13 patient had abdominal ache, 6,4%). Mental confusion was the most common geriatric syndrome (24 patients, 11,9%), followed by falls (16 patients, 7,9%), delirium (10 patients, 4,9%), syncopes (8 patients, 3,9%). Smell and taste abnormalities were uncommon (7 patients, 3,4%, and 13 patients, 6,4%, respectively). Only 5 patients (2,4%) had headache. Total mortality was of 24,8% (50 patients).Groups analysis. The patients enrolled into this study was divided into there groups: group A (118 patients), made up of those who showed one or more typical symptoms (fever, cough or dyspnea) without atypical symptoms (gastrointestinal or neurological); group B /77 patients), made up of those who showed atypical symptoms; group C, made up of the only 6 asymptomatic patients.Group A: Average age was 83,4 years old. Most common symptoms were fever (89 patients, 75,4%), dyspnea (67 patients, 56,7%) and cough (55 patients, 46,6%). Mortality was of 22% (26 patients).Group B: Average age was 83 years old. Most common symptoms were fever (48 patients, 62%), diarrhea (23 patients, 29,8%), weakness (23 patients, 29,8%), mental confusion (21 patients, 27,2%), Mortality was of 29,8% (23 patients). Into group B we also identified a small subgroup of 16 patients without any respiratory symptom.

CONCLUSIONS: This study shows that, although COVID-19's most common clinical presentation in the older adults is made of typical symptoms (58% of the patients), there's a lot of patients (38%) who show atypical or mixed clinical phenotype. These cases are more difficult to recognize. The highest mortality (29% against 22% of typical forms) could be the result of a late diagnosis. Comparing these results to the others derived from meta analysis focused on younger adults, we found that older adults show more rarely fever (68,1% against 82.91%) (4), cough (37,3 against 61-72%) (4-5), weakness (19,4% against 36-51%) (4-6) taste abnormalities (3,4% against 89%) (7) and smell abnormalities (3,4% against 86%) (7), while show more frequently dyspnea (42,7% against 26-30%) (4-6), gastrointestinal symptoms (18,9% against 10%) (6-8) and geriatric syndromes (mental confusion 11,9%, falls 7,9%, delirium 4,9%). These results are largely similar to a multi-center French study made in 2021 on a geriatric COVID-19 population. These findings should encourage clinicians to early investigate atypical symptoms into the anamnesis of older adults who have got risk factors for SARS-CoV-2 infection. In conclusion, this study showed that COVID-19 older adults clinical phenotype includes both systemic symp-

toms (fever, weakness) and respiratory ones (cough, dyspnea) like into the younger adults, but also more peculiar age-related features like atypical symptoms (mainly gastrointestinal) or geriatric syndromes. Clinicians should keep in mind there informations during COVID-19's diagnostic and therapeutic process of geriatric people.

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ABSTRACT WITHDRAWN

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THE GERIATRIC PATIENT IN THE COVID MEDICAL UNIT AFTER VACCINATION OUTBREAK

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BACKGROUND: The development and the diffusion of the vaccines led to a better control of the SARS COV-2 pandemic [1, 2]. Moreover, literature data showed that the vaccinated subjects have a lower risk of severe disease from the infection even in oldest people [3, 4], without any correlation to the administered vaccine [5]. Some works observed a lower vaccine effectiveness with increasing age in the elderly [6] and in the immunocompromised population [7].

AIMS:Our goal is to evaluate the presence of differences in clinical presentations and outcomes in the patients unvaccinated against SARS COV-2 compared to vaccinated subjects, studying the effects on the geriatric population, also considering the different prognostic scores that literature proposes, and observing the possible correlation with the biochemical parameters.

MATERIALS AND METHODS: We retrospectively collected clinical and laboratory data from patients hospitalized for SARS COV-2 infection in our COVID Medicine Unit from January to April 2022. Morbidity status was assessed using the Charlson Comorbidity Index (CCI) [8-10]. Modified Early Warning score (MEWS) [11] and Covid-Gram score (CGS) [12] were used to assess the clinical risk at the admission. The considered outcomes were mortality, length of hospitalization and transfer to intensive care units (ICU).

RESULTS: Our population consists of 122 patients (54% females) with a mean age of 73.6±17.7 years. The 77.9% were >= 65 years old (y.o). The mortality rate stood at 22.13%. 75 patients (61.5%) were discharged to home or to residential services. The mean length of hospitalization was 14.4±9 days. Pneumonia occurred in 72 (59%) patients, 13.3% of whom required non-invasive ventilation (NIV). Age relates with the presence of pneumonia (p<0.001), with higher mortality rate (p=0.007) and longer hospitalizations (p<0.001). The correlations between age and pneumonia or mortality are not significative considering only the subjects 65 y.o (respectively: p=0.87, p=0.37). Age is not associated with the need for NIV (p=0.73). 99 patients (82.5%) received at least one dose of SARS COV-2 vaccine. 67.7% of the vaccinated group (VG) received full vaccination cycle (three doses). 23 subjects (18.8%) did not received vaccination. In the unvaccinated group (UG), 52% of the subjects were >= 80 y.o. VG and UG were homogeneous in age, sex, comorbidity, and MEWS score. No significant differences were observed between the two groups in the considered biochemical parameters. The VG had longer hospitalizations (p=0.04). Our analysis showed in UG neither higher mortality rates (p=0.43, O.R.=0.58) nor increased use of NIV (p=0.31, O.R.=0.45), while UG patients were significantly exposed to increased risk of transfers to ICU (p=0.003, O.R.=0). Most of the discharged patients received the full vaccination cycle (56.8%). The average CGS score was 154.5±52.5. The CGS was found to correlate positively (with different intensities) with age (r=0.58), with higher values of d-dimer (r=0.16), creatinine (r=0.19), BNP (r=0.19), procalcitonin (r=0.05), C-reactive protein (r=0.12) and inversely with hemoglobin values (r=0.3). There were no significant differences in CGS between the UG and VG groups (p=0.73). The CGS score showed a weak correlation with longer hospitalizations (r=0.05). The CGS also relates with a higher MEWS at the admission (r=0.34). The mean CCI was 6.9±3.2. We observed a weak correlation with longer hospitalizations (r=0.15) and a moderate correlation with CGS (r=0.7). In our population, we did not observe significant differences between sexes.

CONCLUSIONS: The mean CCI shows the greater risk for subjects with worst clinical conditions to develop a SARS COV-2 infection that is symptomatic and susceptible to hospitalization. The mean age underlines how the geriatric population is the selected target, especially of the infection complicated by pneumonia. In addition, the elderly patients have a higher risk of death and longer hospitalizations. These age-related risks seem to decrease in older subjects. Despite this, the UG still counts many elderlies. Vaccination against SARS COV-2 helps with a better clinical course, although in the geriatric patients there is a lower effectiveness in terms of outcome and a still high tendency to complications and longer hospitalizations despite vaccination. The use of prognostic scores can be useful to identify the patients at greater risk of negative clinical evolution.

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POLINET PROJECT FOR OPTIMIZATION OF THE MANAGEMENT OF POLYTHERAPIC PATIENTS THROUGH THE DEVELOPMENT OF MULTIDISCIPLINARY H-T NETWORK AND DIGITAL HEALTH TECHNOLOGIES: MODEL DEVELOPMENT IN EMERGENCY DEPARTMENT

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INTRODUCTION: Polypharmacy is increasing in the over 65 population and is known to be associated with incremental

risks of patient taking/managing therapies or prescribers unintended discrepancies. Elderly patients with cognitive impairment needs of incremental support especially in care transitions1. Emergency Department (ED) can have a key position in identifying frail older patients who benefit most from comprehensive geriatric care2 and polypharmacy evaluation. Therefore, in Mauriziano Hospital, a multidisciplinary team of hospital pharamacists and physician was activated as part of the PoliNet Project, in order to carry out therapeutic recognition and reconciliation and empower patients and their caregiver.

AIM: The aim of this work was to early identify problems underlying therapies in order to avoid possible clinical complications with consequent access to ED and evaluate the potential of the multidisciplinary approach that characterizes the PoliNet model.

MATERIALS AND METHODS: Physicians and Clinical Pharmacists cooperate in the ED geriatric clinic. Therapies Recognition was carried out through patient/caregiver verbal reference and evaluation of shown health documentation. A specific digital Recognition and Reconciliation Form was activated for Clinical Pharmacist to report therapies, pharmacological analysis and reporting of counseling interviews. Therapeutic reconciliation was then agreed with the Multidisciplinary Team and carried out through appropriate switch or description, in order to avoid possible complications due to complex regimens or unnecessary drugs and to relieve therapeutic fatigue. Different Information and Communication Technology (ICT) and Clinical Decision Support System (CDSS) were used including mainly Babele and Navfarma®.

RESULTS: From March to August 2022 services was proposed to 110 patients with cognitive impairment. All patients recognized the need for the service and planned the visit. Despite this, dropout was about 25%, mainly correlated with the neurocognitive disease and poor self-sufficiency. The thoughtful review of medications by screening and evaluation of 6 steps: 1) Clinical evaluation of cognitive disorders and vascular damage (SPMQ and MMSE Tests); 2) Possible drug/herbal-drug interactions; 3) Potentially inappropriate medications (PIMs) according to the Screening Tool of Older People's Prescriptions (STOPP/START and Beers Criteria); 4) Intake times schedule; 5) Potentially inappropriate pharmaceutical form related to patient's intake ability; 6) Adherence, persistance.

CONCLUSIONS: PoliNet Project apply in ED allowed to optimize health assistance for fragile enrolled population. The multidisciplinary approach and the use of digital technologies results useful in order to risk management, patient's engagement and the continuity of care between hospital and primary care.

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ASSOCIATION BETWEEN HYPOMAGNESAEMIA AND DELIRIUM IN HOSPITALIZED OLDER PERSONS.

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BACKGROUND: Altered serum magnesium (Mg) level in older persons has been hypothesized to have a role in the prediction of hospitalization and mortality. Hypomagnesemia and delirium are frequent problems in older patients, but no study has evaluated such an association.

AIMS: The present study aimed to analyze the relationship between serum Mg and delirium presence in patients admitted to an acute geriatric clinical setting.

METHODS: Consecutively patients hospitalized in the acute care geriatric unit with at least one measurement of serum Mg were included in the study. The prevalence of delirium was determined by 4AT examination. A logistic regression model was used to assess the association between serum Mg and delirium.

RESULTS: 209 patients (78% women) were included in the study. The mean age of the participants was 85.7±6.50 years (range 65–100). 27 subjects (12.9%) developed delirium during the hospitalization, with no difference between genders. Subjects with delirium had lower serum magnesium levels than those without (1.88±0.34 *versus* 2.04±0.28; p=0.009). Delirium risk was significantly higher in patients with lower serum magnesium levels (OR 5.80 95% CI 1.450-23.222; p=0.013) independent of multiple covariates.

DISCUSSION: Present findings have relevant implications for the clinical management of patients suffering from medical conditions, highlighting the need for analyzing Mg concentration carefully.

CONCLUSIONS: Lower serum Mg level seems to be a good predictor of delirium.

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PERSONALIZED INTERVENTIONS IN FRAIL PATIENTS: GERIATRIC UNITS, NON-GERIATRIC SETTINGS AND THE POTENTIAL OF COMANAGEMENT

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BACKGROUND AND AIM: During the past recent decades a large body of evidence has been collected on the need for multidisciplinary, personalized interventions for frail aging and aged patients. This evidence is crucial for paradigm shifts in cure and care delivery during the upcoming demographic transition. However, a persistent know-do gap limits the translation of principles into clinical practice, and geriatric interventions are largely underused. The Clinic II of Internal Medicine started 2016 a set of groundbreaking initiatives aimed at (p)rehabilitating frail inpatients undergoing high-performance medicine in acute medical settings by means of geriatric comanagement. Patients &

METHODS: Since 2016, over 2,000 frail patients admitted to the Nephrology, Cardiology, Intensive Care and Emergency Units underwent standard of care plus evaluation of the comprehensive geriatric assessment (CGA)-based Multidimensional Prognostic Index (MPI) and up to two years follow-up evaluation so far. At the Clinic II of Internal Medicine, a pilot study on over 500 patients undergoing standard of care and MPI evaluation with or without multidisciplinary intervention (physiotherapy, occupational therapy, nutritional therapy, cognitive training and medication reconciliation among others) showed the beneficial effect of the latter in terms of frailty reduction during hospitalization. As a consequence, 2019 the co-managed Clinic "Universitäre Altersmedizin" was established, in which patients at risk of functional loss but requiring potentially disabling medical treatment are (p)rehabilitated for 2-3 weeks.

RESULTS: The preliminary results of analyses on over 340 patients admitted to the Universitäre Altersmedizin so far, including that of one RCT, show that - in the presence of the same frailty degree - tailored geriatric interventions significantly

reduce frailty as assessed by the MPI, rehospitalizations and mortality during follow-up as well as significantly improve patient-reported outcome measures (PROMS), daily functions (as assessed by the Barthel Index, basic and instrumental Activities of Daily Living), mobility (De-Morton Mobility Index, Timed-Up and Go), cognition (Short Portable Mental Status Questionnaire, Mini-Mental State Examination), mood (Geriatric Depression Scale).

CONCLUSIONS: Geriatric, multidisciplinary tailored interventions strongly impact on all main health-related outcomes and trajectories and should be implemented systematically by integrating frailty diagnosis and geriatric comanagement in all healthcare settings. At the time of abstract submission, a large multicentric trial is beginning in Northrhine-Westfalia to evaluate the effects of a MPI-based triaging system followed by allocation to geriatric interventions including tailored discharge management.

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OBJECTIVES OF THE NRP IN FAVOR OF THE DEPENDENT ELDERLY PERSON

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In a society marked by an aging population, care for the dependent elderly should be a central issue. With the National Recovery and Resilience Plan, Italy is trying to look beyond the health and economic crisis and build a possible response for the elderly. Currently in Italy, people over 65 - reports the NRP - are 23 percent. Moreover, according to the most recent estimates, the number of dependent elderly will double to nearly 5 million by 2030. The ISTAT Report Gli anziani e la loro domanda sociale e sanitaria (The elderly and their social and health demand), promoted together with the Commission for the reform of health and social care, estimated that more than 2.7 million over 75 in Italy live with serious health and autonomy problems, about 1.2 million lack adequate help, and for about 100 thousand elderly the condition of physical and emotional suffering is exacerbated by poverty. To address this dramatic reality, the NRP addresses the issue of elderly care in an integrated way with that of reorganizing health services, linking the investments of Mission 5 "Inclusion and Cohesion" to those of Mission 6 "Health." In particular, the missions include an investment intervention for the support of vulnerable people and the prevention of institutionalization of the dependent elderly. The largest line of activity of the project (over 300 million) is aimed at financing the conversion of RSAs and nursing homes for the elderly into self-contained apartment groups, equipped with the necessary equipment and services currently present in the institutionalized setting; an investment having the objective of providing community and home-based social and health services in order to improve the autonomy of people with disabilities; The elaboration, of a regulation concerning the "System of interventions in favor of the non-self-sufficient elderly," to be adopted by the natural expiration of the legislature (spring of 2023); it is aimed at identifying the essential levels of services and methods of access to supports in an integrated manner, giving priority to staying at home.

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A TOOL FOR IMPROVING PRE-OPERATIVE ASSESSMENT BY ECHOCARDIOGRAPHY IN ORTHOGERIATRIC PATIENTS

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AIMS: Orthogeriatric patients require surgical repair of hip fracture within 24-36 hours. In preoperative phase, the transthoracic echocardiography (TTE) still remains a requested procedure since the anestesiologist approach could be modified. However, TTE execution may delay surgery and cause inappropriate use of resources. We develop and validate a clinical-instrumental score to identify patients that could benefit from TTE, allowing safer anestesiologist procedures.

METHODS: Prospective observational study conducted in orthogeriatric patients co-management in the period May 2019 to January 2020. After multidisciplinary agreement on a clinical-instrumental score for TTE indication, data about patients characteristics' and their short- and long-term outcomes were assessed.

RESULTS: The score includes the following criteria: *de novo* finding of aortic ejective systolic murmur, METs<4 and overload changes on the ST wave at EKG. We evaluated 332 patients, mainly women (238; 72%), with mean age 87 years. Only 6(1%) met the three criteria to perform TTE before surgery. In addition, 6(1%) patients had acute heart failure, 198(60%) were on antiplatelet drugs, 9(2%) in TAO, 37(11%) in NAO and 1(0.3%) on LWMH. After TTE, in 5 patients the main findings were moderate-severe aortic stenosis (100%) and left ventricular hypertro-

phy (60%). The TTE request based on the aforementioned criteria demonstrated a specificity of 99% and a sensitivity of 83%.

CONCLUSIONS: The adoption of a tool for pre-operative TTE indication could improve the efficacy and appropriateness of pre-operative test, avoiding unnecessary surgical delay and improving safety of medical procedures.

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POST-ACUTE'S PHASE REHABILITATION IN ELDERLY PATIENTS OPERATED FOR TRAUMATIC FEMUR FRACTURE: THE EXPERIENCE OF ORTHOGERIATRIC SERVICE IN CUNEO'S HOSPITAL.

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INTRODUCTION: Femur fractures are very common among elderly: in Italy every year the incidence is about 300/100000 for females and 150/100000 for males1-2. They represent an important health problem because, if not properly treated, they can lead to disability3. In the acute and post-acute phase, the collaboration between different specialists (orthopedic, geriatrician, physiatrist, physiotherapist) prevents functional decline4-5. For this reason, in ASO S. Croce e Carle - Cuneo an Orthogeriatric Service has been established since 2002.

AIM OF THE STUDY: To evaluate variables related to post-acute's phase rehabilitation in elderly patients operated for traumatic femur fractures.

MATERIALS AND METHODS: We conducted a retrospective observational cohort study in elderly patients operated for traumatic femur fracture in Cuneo's hospital orthopedics ward, during a period of 15 non-continuous months between April 2019 and October 2020. Inclusion criteria were: age≥65; walking before fracture; ADL score<5.

RESULTS: During the observation period, 345 patients were operated for traumatic femur fracture; among theme, 283 were included in our study. The medium age was 82.7±7.9 years, the 53.4% was ADL completely autonomous, the medium IADL score was 8.8±4.1, the medium SPMSQ score was 2.1±2.3, the severity CIRS index was 1.6±0.3 and the comorbidity CIRS index was 3.1±1.6. The 71.7% underwent to surgery within 48 hours and the average hospital stay was 11.0±5.3 days. The 56.5% started the rehabilitation the day after the surgery, the 9.9% wasn't verticalized at discharge. The main causes of not verticalization were: lack of cooperation (18.7%), hypotension (9.2%), lack of footwear (9.2%), pain (8.8%), dizziness (5.7%), medical contraindications (5.7%), anemia (5.3%). The 17.3% of patients didn't collaborate with the physiotherapist and, among these, the 30.6% weren't mobilized. At discharge, 158 patients walked with physiotherapist, 13 patients walked with crutch, 82 patients were only verticalized, 25 patients sat on wheelchair and 5 patients stayed in bed.

CONCLUSIONS: Patients operated for femur fractures were manly previously walking, without ADL function loss, living at home alone or with help. The 56.5% started rehabilitation the day after the surgery but the 17.3% didn't collaborate with the physiotherapist. At discharge, the 55.8% walked with physiotherapist and the 1.8% stayed in bed. Previous studies underline the importance of early rehabilitation after a femur fracture to prevent functional decline and disability. To ease the physiotherapist's work, it's useful to know and correct the main causes of not verticalization: lack of collaboration, hypotension, lack of footwear, pain, dizziness, anemia.

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PAIN ASSESSMENT: COMPARISON BETWEEN ELDERLY PATIENTS PERCEPTION AND NURSES' OBSERVATION

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INTRODUCTION: Pain, an important public health problem, is defined as a negative symptom, often undersized, associate to multiple morbid conditions, with a high rate of frequency in the population, especially in the elderly(1).The number of older people has increased exponentially in the last decades, resulting in lengthening of life expectancy, increased fragility and motor and cognitive disabilities, and the level of pain perceived. These aspects also significantly affect the quality of life, especially in individual, economic and social terms(2).Literature suggests that the development of an effective management program is essential for implementing an appropriate assessment scientifically proven through validated scales(3)are the Numeric Rating Scale – NRS(4), which is mono-dimensional and therefore easily obtainable, measuring only the intensity of pain, and the PAINAD(5-6), observational and useful in patients with cognitive disorders, communication difficulties or language and cultural barriers.

OBJECTIVE: To assess the agreement among the level of pain perceived by patients and observed by nurses and to evaluate the efficacy of pain relief therapy.

MATERIALS AND METHODS: A cross-sectional study involving 302 patients over 65 (170 women, 131 men), with a median age of 81 years, has been conducted. The survey provides the administration of two different questionnaires; the first, filled in by on-duty nurses, investigates pain and clinical parameters while the second one, filled in by patients, analyse pain and personal details.The pain has been expressed with apposite rating scales (NRS and PAINAD) and divided into three levels (absent, not moderate, moderate); then the intensity of pain is evaluated through concordance and discordance considering two categories: who feel and doesn't feel pain.

RESULTS: Data analysis on patients without therapy (227) shows that 80 of them reported feeling pain, while nurses observed it in 40. The Cohen coefficient is 0.09 and the agreement is 63%; nurses underestimated and overestimated pain in, 27.31% and 9.69%, respectively.Cohen's Kappa increases with decreasing level of physical autonomy, but it never reaches 0.1 in all categories; the same situation occurs for different hospitalization areas, where there's a better K in not-specialistic medical wards than the others but always under 0.17.The highest K is reached for people with a university degree (0.80), where the accordance is 92%, while for the others it doesn't reach 0.15.In treated patients (62), 35 were given NSAIDs and 27 opioids. It turned out that the patients who reported feeling moderate pain are 10 (28.57%) and 3 (11.1%) after takin NSAIDs and opioids

treatment respectively.For both therapies there's less than 30% of patients with a decrease in pain and about 35% of patients with an increase in pain; 40% of patients treated with NSAIDs don't report improvement, while the analogue percentage is 33.33% for opioids.It came to light that NSAIDs have better efficacy than opioids in reducing pain from moderate to not moderate or absent (22.86% *vs.* 14.18%), but they have a higher percentage of patients with the opposite effects: from absent or not moderate pain to moderate (22.86% *vs.* 7.41%).

CONCLUSIONS: The results of the study showed a conspicuous variation between pain perceived by patients and observed by nurses, confirmed by the fact that Cohen's Kappa is always under 0.20, which denotes a low concordance between the two evaluations. The only exception concerns people with a university degree, where the degree of agreement is almost perfect, but they represent a small percentage (5.38%) of the sampled patients.Fortunately, the number of graduates is increasing in Italy as in Europe, thus an increase in the concordance is expected between the pain perceived and observed.About in pain relief therapy, opioids are better at not causing deterioration of pain while NSAIDs are better at leading to an improvement in the patient's pain feeling.

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HEALTHCARE-ASSOCIATED INFECTIONS IN MEDICAL DEPARTMENT: EFFECT OF A LOCAL AUDIT

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BACKGROUND: The elderly population is increasing exponentially and the risk of developing a healthcare-associated infection (HAI) increases linearly with age. HAI is associated with significant morbidity and mortality, high readmission rates and considerable health care expenditures. Medical staff should take effective intervention to reduce the risk of infection. Clinical audit is a quality improvement process that seeks to improve patients care and outcomes. We performed a departmental audit to evaluate the usefulness of an audit in providing to reduce the risk of infection in hospitalized patients.

METHODS: We had two specific objectives: 1) to perform the healthcare worker training on hospital control measures to specific nosocomial infections (Acinetobacter baumanni, Klebsiella pneumoniae carbapenemase (KPC)-producing, Clostridium difficile) with revision of the hospital guidelines recommendations based on international guidelines and published in hospital intranet site; 2) to assess the proportion of healthcare associated infection from Acinetobacter b, Klebsiella KPC and Clostridium d. before and after the revision and retraining of hospital control measures. During the month of October in 2021, in each division of Medical Department one third of healthcare workers was retraining in hospital guidelines to control hospital infections diffusion, subsequently, the nosocomial infection from Acinetobacter b, Klebsiella KPC and Clostridium d. was extracted from the patient electronic chart system during the time period from September 1 to 30 and from November 1 to 30 2021.

RESULTS: The review and the retraining of healthcare workers in hospital guidelines recommendations to control nosocomial infections was performed in all eight clinical unit of the department (100%). A total of 56 pathogenic bacteria was recorded, Klebsiella KPC n 33 cases (59%), Acinetobacter b. n= 18 cases (32%), Clostridium d. n= 5 cases (8%). When compared the pathogenic bacteria recording before and after the implementation of review and retraining, we observed a decrease of 11% of Klebsiella KPC cases and a decrease of 6% of Acinetobacter b., Clostridium d. showed any modification.

CONCLUSIONS: The disclosure and implementation of hospital recommendation to control measures for nosocomial infections with a local audit may provide useful feedback to reduce the risk of nosocomial infection. The end result of this audit cycle could be an improvement and promoting high standard of patients care.

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THE ONCOGERIATRIC MODEL OF THE AZIENDA OSPEDALIERO UNIVERSITARIA CAREGGI - FIRENZE

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INTRODUCTION: There is an increasing frequency of new cancer diagnoses in the general population. More than half of the subjects are today aged 65 years or older.The Comprehensive Geriatric Assessment is reccomended by the Society for International Oncology in Geriatrics as the tool for decision making and treatment planning in this population.Due to the areas explored (comorbidity, functional status, cognitive status, nutritional status, polipharmacotherapy, social network, etc.) its benefical effetcs include increased survival, mortality prediction, and tolerance to treatment (either surgical or chemotherapy/radiotherapy, or both).Moreover functional status can be negatively affected by cancer itself and/or its treatments; thus, independently from the starting point, a prehabilitation program can reduce these effetcs.

AIMS: Development of an integrated multidisciplinary path for the evaluation of the elderly patient suffering from cancer.

MATERIALS AND METHODS: The Oncogeriatric model of the Azienda Ospedaliero Universitaria Careggi is aimed to guarantee targeted interventions regardless of age minimizing clinical and functional outocmes, and promoting quality of life.Cancer patients of age >75 years and a score at the G8 <14 (G8 is an eight-item screening tool that was specifically created for older cancer patients), evaluated in the Oncology or Surgical Department, are referred to the Geriatrics clinic.According to the outcome of the VMD, patients are classified into three categories: fit (to be directed immediately to an oncological / surgical path), vulnerable (to be subjected to a prehabilitation path), frail (to be directed to palliative care).The physiotherapy part of the prehabilitation program is tailored to the patients needs; indeed, they can carry out the physiotherapy treatment in the gym of the geriatrics clinic or at home. Patients in home treatment are given a form with a program of illustrated exercises and a diary of the activities carried out, verified with periodic televisions. Patients are followed during the entire treatment period in Day Service and assessed on the third-fifth postoperative day and fifteen days after discharge. If necessary, the patient is taken in charge in Day Service regime for a post-rehabilitation treatment.The ArchiAmb/ArchiMed computerized medical record allows the sharing of data between hospital wards and the involvement of the attending physician with the CARED function.

RESULTS: From December 2021 to June 2022, 57 patients with an average age of 80.7 years, 34 women and 23 men, were treated; 37 subjects were candidates for surgical treatment and 20 for chemotherapy treatment. The general condition was good (EGOG 0.7) despite the comorbidity (CIRS 3.6). In most cases, cognitive performance (MMSE ≥ 24: 82.1%), mood (73.7%) and level of functional autonomy (mean Barthel Index 94.6%, IADL preserved 6.3) were within the limits of normality. Almost half of the sample (45%) were at risk of malnutrition or malnourishment and more than half (54.6%) demonstrated reduced lower limb physical performance as assessed with SPPB.Although 47.4% of the subjects were "not at risk" at the screening test (G8> 14), only 10.5% were "fit" according to Fried's criteria. Patients who were "fit" on VMD were 42.1% compared to 47.4% "vulnerable" and 10.5% "frail".Patients underwent dietary assessment and calorie-protein supplementation prescription in selected cases.Of the patients examined, 18.4% followed an outpatient prehabilitation program: 40.8% at home and 8.2% mixed. In 32.7% no path was followed due to patient refusal, geographical distance or non-applicability for clinical and/or functional criteria.

CONCLUSIONS: The sample examined is representative of a geriatric population with oncological disease in an active phase.Comprehensive Geriatric Assessment has proven to be accurate in identifying "vulnerable" subjects on which to intervene with an individualized treatment program.Moreover, the integration between different disciplines proved to be excellent. The integrated multidisciplinary path has allowed the taking in charge and the exchange of information, avoiding overlapping interventions and misidentification of critical situations.The critical elements most susceptible to modification are represented by motor/functional and nutritional problems.

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ORAL ANTICOAGULANT THERAPY AND RISK OF MACE IN ELDERLY PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION: REAL WORLD EVIDENCE DATA

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BACKGROUND: Atrial fibrillation (AF) is the most common cardiac arrhythmia globally and is associated with a five times greater risk of stroke than in patients without AF. AF and major adverse cardiac event (MACE) share some very frequent risk factors in the elderly population: diabetes mellitus (DM), insulin resistance, dyslipidemia. Efficacy and safety of non-vitamin K antagonist oral anticoagulants (NOACs) have been studied in patients with AF in association with other several critical conditions, including elderly, chronic kidney disease, or history of intracranial haemorrhage. Current international guidelines recommend the use of NOACs as an effective, safer, and more affordable alternative to vitamin K antagonists (VKAs), especially in the elderly (1).Although large clinical trials have demonstrated the non-inferiority of NOACs compared to VKAs in the prevention of stroke and systemic thromboembolism, and the reduction of major bleeding, especially in the brain, the role of antithrombotic therapies on the risk of MACE in a high-risk population, such as that elderly, is still controversial. It is probably related to the different impact of the numerous comorbidities on MACE (2). The aim of the present work is to evaluate any differences on the appearance of MACE between patients treated with NOACs compared to VKAs in an elderly population with AF and other critical comorbidities.

MATERIALS AND METHODS: 420 caucasian patients, aged ≥ 65 years, were enrolled at the Department – "Magna Graecia" University of Catanzaro, suffering from non-valvular AF, 136 in treatment with VKAs and 284 with NOACs, with mean age 76.7±5.7, 55 women in the VKAs group (40.4%) and 133 in NOACs (46.8%) (p=0.217). A clinical-instrumental and laboratory evaluation was performed for a follow-up of 93.9 (30) months. Data were expressed as standard deviation or as median and interquartile range, when appropriate. Wicoxon's test and Student's t-test were performed for unpaired data, and chi-squared test was performed when appropriate. Furthermore, a log rank test was performed comparing the estimates of risk functions of two groups at each time point of the observed events, and, subsequently, a univariate Cox regression model about incidence of MACE; variables that significantly related with the occurrence of MACE were included in a multivariate Cox regression model in order to calculate the hazard ratio (HR) for independent predictors associated with the incidence of MACE.

RESULTS: The two groups were overlappings for sex, smoking, type 2 diabetes mellitus. The group in treatment with NOACs had a higher prevalence of: heart failure (110 *vs.* 32, p=0.002), COPD (127 *vs.* 39 p=0.001), arterial hypertension (266 *vs.* 112, p=0.0003) and they were older than the patient of the other group (78.4±4.7 *vs.* 73.2±5.9 years); p <0.0001. In the whole general population at baseline, the following values were detected: estimated glomerular filtration rate (eGFR) 64.6±18.2 ml/min/1.73 m2, Systolic blood pressure (SBP) 132.5±11.6 mmHg, diastolic blood pressure (DBP) 76.6±9.5 mmHg, BMI 29.4±.8 Kg/m2. In patients treated with NOACs, MACEs observed were 44 (2.4 events /100 patient-years), while in the group treated with VKAs were 76 (7.2 events/100 patient-years) (p <0.0001). A multivariate analysis model showed that an enhancement of 1g/dl of albuminemia value (HR 0.565, p=0.033), taking a therapy with β-blockers (HR 0.621, p=0.013), ACE inhibitors or ARBs (HR 0.695, p=0.024) were protective factors for the onset of MACE, while VKAs therapy (HR 2.596, p <0.0001) and heart failure (HR 1.471, p <0.0001) increased the risk of MACE in patients with AF.

CONCLUSIONS: The data of present study confirm a better safety profile of NOACs compared to VKAs on the occurrence of MACE in an elderly population with critical comorbidities, even

though patients treated with NOACs were older and had a greater burden of comorbidities that negatively affect the risk of MACE such as: arterial hypertension, COPD and heart failure.

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ADVERSE EFFECTS INDUCED BY STATIN TREATMENT IN ELDERLY PATIENTS BASED ON GENDER: A PHARMACO-EPIDEMIOLOGICAL STUDY IN AN ITALIAN REAL LIFE CONTEXT

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BACKGROUND: Pharmacological treatment with statins is considered the first line therapy for the reduction of cardiovascular events (CV) in primary and secondary prevention in patients with hyperlipidemia (1). However, the development of side effects (myalgia and hypertransaminasemia) and the fear of developing rhabdomyolysis reduces adherence to treatment, particularly in patients on polytherapy. The aim of the work was to evaluate the prevalence of statin intolerance in an elderly population and gender difference between subjects found to be intolerant.

MATERIALS AND METHODS: A retrospective study was performed on data related to patients in the clinics of general practitioners in the province of Catanzaro, Italy. Of whole patients (> 10,000 patients), only patients of both gender and over the age of 65 in treatment with statins of any cause were included in the present study. The data were collected in Millewin program and patients were stratified for statistical analysis into three age groups: I 65-74 years; II 75-84 years; III; > 85 years old. The prevalence and nature of adverse reactions were estimated in the total population and in each subpopulation. The $\chi 2$ (Chi Square) test was used to analyze gender difference between the three age groups. The difference between the groups was considered significant for $p<0.05$.

RESULTS: 1095 patients, 486 men (44.4%) and 609 women (55.6%) with a mean age of 76±7.3 years were included in the study. Of these patients, 531 (48.5%) (238 men and 293 women) were included in Group I, 411 (37.5%) (195 men and 216 women) in Group II, and 153 (13.9%) (53 men and 100 women) in Group III. Of 1095 patients enrolled, 93 (8.5%) were found to be intolerant to statins, with a higher prevalence in females (57; 61.3%). The $\chi 2$ test performed between the three age groups documented that women are more intolerant to statins than men ($p=0.0006$). In patients with statin intolerance (93), the most common adverse effect was myalgia (30.1%, $p<0.01$), followed by increased CPK levels (22.6%, $p<0.01$), and gastrointestinal disorders (10.7%). Stratification of data by age documented that adverse events were more common in Group II, with no statistically significant difference in adverse event type and between gender. In the III age group, adverse events were significantly higher in women ($p<0.01$) and in 42.2% of patients the most common event was the increase in CPK ($P <0.01$). Simvastatin and atorvastatin were the two most commonly used statin in the general population. Overall, of 93 intolerant patients, 55 (59.1%) were in treatment with simvastatin, 11 (11.8%) atorvastatin, 10 (10.7%) rosuvastatin, 8 (8.6%) pravastatin, 7 (7.5%) fluvastatin, 2 (2.1%) lovastatin. In all three age groups, simvastatin was the main drug taken by intolerant subjects. Developing intolerance, 42 (45.1%) patients took another type of statin, 29 (31.2%) discontinued therapy, 15 (16.1%) changed compound and developed intolerance again, 6 (6.4%) restarted or continued therapy due to mild side effects and only one (1.1%) changed dosage. Among male patients there was higher number of switches (50% *vs.* 42.1%), while in women the rate of suspensions was higher (35.1% *vs.* 25%).

CONCLUSIONS: The present study documents how patients aged between 65 and 74 years and women are more intolerant to statins, suggesting the requirement to choose the right dose of each drug, even considering the body disposition of the patients.

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THE PRO-VAX PROJECT: A PRO-ACTIVE VACCINATION PROGRAM FOR OLDER OUT-PATIENTS ADMITTED TO GERIATRIC CLINICS

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INTRODUCTION: An active vaccination programme is essential in preventing infectious diseases and related negative consequences, especially in frail older subjects at high risk of hospitalization, early institutionalization and mortality. Although the National Vaccine Prevention Plan (PNPV) includes the National Health System (NHS)'s recommended vaccinations for older adults, the immunization coverage in elderly people is still low, especially among frail subjects.

AIM: The PRO-VAX project* aims to implement a vaccination program for in-hospital elderly outpatients with different grades of frailty severity. Specific aims are: i) improve vaccination rates in older subjects; ii) ensure safe and innovative settings for vaccine administration, and iii) evaluate the possible adverse reactions of vaccinations according to the subjects' degree of frailty.

MATERIALS AND METHODS: The project includes people over 65 years who are admitted as outpatients to the geriatric clinics, *i.e.* CDCD (Cognitive Impairment and Dementia Clinics), Palliative Care Clinics, Ostheo-Metabolic Clinics and Geriatric Clinics, and who have one or more missing vaccination according to the PNPV. PRO-VAX project consists of: a) an informative phase including a vaccination campaign programme; and b) a clinical phase including: i) screening and identification of out-patients candidate for vaccinations; ii) collection of clinical and multidimensional information by using clinical and functional data according to the CGA-based Multidimensional Prognostic Index (MPI) to stratify frailty, iii) administration of the missing vaccination(s) according to PNPV, and iv) a follow-up tele-visit after 3

months from the vaccinations to collect health-clinical data and frailty assessment according to the TELE-MPI.

RESULTS: Currently, the estimated vaccination rates are about 90% anti-Covid19, 70% anti-flu, 35% anti-pneumococcal and 5% anti-Herpes Zoster. Considering about 640 older subjects admitted to the geriatric outpatient clinics during a 6-month-period and an overall adherence to the PRO-VAX program of 20%, it is expected nearly 12 (2%) anti-Covid19, 38 (6%) anti-influenza, 83 (13%) anti-pneumococcal, and 115 (18%) anti-Herpes Zoster vaccinations will be administered (248 total vaccinations) during a period of six- months. This rates will guarantee an increase of 30% of vaccination rates among older out-patients admitted to the geriatric clinics.

CONCLUSIONS: The PRO-VAX project could increase the vaccination rates according to PNPV in older outpatients admitted to geriatric clinics with the final aim to guarantee wider vaccination access and to reduce the infectious diseases' impact and to prevent negative outcomes. Hospital setting can be considered as a suitable contest both for the correct dissemination of clinical-health information and for the vaccine's administration in a safe environment.

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SUICIDE RISK IN CAREGIVERS OF PEOPLE WITH DEMENTIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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BACKGROUND: Interest in physical and mental health outcomes in caregivers of patients with dementia is increasing. However, there is limited data available on the prevalence of suicidal ideation, suicidal attempts, and suicide rates among caregivers of those with dementia. Therefore, we aimed to systematically review these outcomes to address this gap in the literature and thus provide information to inform future policy and intervention for the benefit of caregivers of dementia patients.

METHODS: We searched several databases from inception to the 10th November 2021, for studies investigating suicidal ideation, suicidal attempts, and suicide rates of caregivers of patients with dementia. We report data regarding suicidal ideation as prevalence, with the 95% confidence intervals (CIs), applying a random-effect model; since less than three studies were available for suicide attempt and suicide, these data are reported descriptively.

RESULTS: Among 194 articles, eight comprising 1,209 informal caregivers of people with dementia (mean age: 63.9 years, 74% females) were included. The prevalence of suicide ideation was 32.32% (95% CI: 16.01-48.64%; I2=98.5%, $p < 0.0001$). The prevalence of suicide ideation varied between studies from 4.69% to 77.78%. Two studies reported the rate of suicidal attempt in caregivers of patients with dementia, with the prevalence ranging from 5.9% to 16.1%. One study reported one in 17 caregivers of patients with dementia died by suicide.

CONCLUSIONS: The prevalence of suicide ideation is high, affecting several caregivers of patients with dementia. These findings suggest intervention and/or policy are urgently needed to address suicidal behavior in this at-risk population.

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INTERVENTIONAL PNEUMOLOGY PROCEDURES IN ELDERLY PATIENTS WITH COMORBIDITIES: AN OBSERVATIONAL STUDY

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INTRODUCTION: Respiratory diseases represent one of the main causes of hospitalization and disability in the elderly and are often concomitant with other comorbidities. Ageing can play a crucial role in the pathogenesis of several acute and chronic lung diseases. Respiratory disorders can be more prevalent, severe and frequently associated to comorbidities and disability in older adults. Interventional pulmonology is a medical specialty relying on advanced and safe diagnostic and therapeutic procedures for the management of infectious diseases, pleural effusion, atelectasis and malignancy. The British Thoracic Society recommend bronchoscopy when clinically needed, independently from the age of the patient. However in literature few manuscript reports the usefulness of Interventional pulmonology in elderly and this fact contribute to reluctant prescribing behaviours.

OBJECTIVE OF THE STUDY: The purpose of our study was to evaluate the usefulness and the safety of Interventional pulmonology techniques in a consecutive series of elderly patients with comorbidities hospitalized for acute respiratory failure.

MATERIALS AND METHODS: The clinical data of a consecutive series of frailty patients admitted to our department from 1st January 2019 to 30th September 2021 for acute respiratory diseases were analysed. All these patients underwent to Interventional pulmonology procedures. The fibrobronchoscopies were performed with the Olimpus multipurpose videobronchoscope or with the Monosuo AmBu. Thoracic drainages were performed using Trocar number 24. Disposable drainage sets were used for thoracentesis. The cytological examination of bronchial lavage fluid and pleural fluid was performed in the Pathological Anatomy department, while the microbiological tests (culture for common germs, viruses and BK) were carried out in the Microbiology department. The chemical-physical examination of the bronchial lavage fluid and the pleural fluid were performed in the Analysis Laboratory department. Interventional radiologists performed CT-guided biopsies.

RESULTS: 53 patients underwent to Interventional pulmonology techniques during the described period. Of these 53 patients, 25 were female and 28 were male with mean age of 87.5 years and Fried frailty index ≥ 3. The duration of the hospitalization ranged between 5 and 53 days. Respiratory failure was caused by acute heart failure, sepsis, aspiration pneumonia and lobar atelectasis. 33 fibrobronchoscopies, 2 thoracenteses and 18 thoracic drainages were performed. Two patients subsequently underwent to talc pleurodesis and one to CT-guided biopsy. In 41 cases these procedures were performed after HR chest CT, while in the remaining 12 cases the chest radiography was judged to be sufficient. Fibrobronchoscopies were performed both for diagnostic and therapeutic purposes. In 8 cases, the bronchial lavage culture test was positive for common germs. In 3 cases, the cytological examination of the bronchial lavage fluid and the biopsy of endobronchial lesions allowed the diagnosis of microcytoma, adenocarcinoma and endobronchial inflammation, respectively. The two thoracenteses were performed for non-massive pleural effusion and both the cytological and culture tests had negative results. Chest drains were placed for massive pleural effusion. The cytological examination of the pleural fluid in two cases confirmed the presence of neoplastic cells and in one case pleurodesis was indicated. The second talc pleurodesis was performed in a patient with cryptogenic liver cirrhosis complicated with pleural effusion unresponsive to diuretic therapy. CT-guided biopsy was performed in a patient with a 3.5 cm peripheral solid lesion in the right lower lung lobe. No complications were recorded during Interventional pulmonology techniques. Of the 53 patients described, 35 were discharged and 18 died for exacerbations of other comorbidities during the hospitalization.

CONCLUSIONS: Few studies assessed the safety and the efficacy of Interventional pulmonology procedure in the elderly. The lack of evidence led to delaying or to avoid life-saving procedure especially in elderly patients. The results of our study demonstrated that Interventional pulmonology procedures are effective and safe when used in the management of pulmonary and pleural diseases in elderly patients with comorbidities. Future studies are needed to evaluate the impact of comorbidities on Interventional pulmonology outcomes and to select elderly population as carefully as possible through a multidisciplinary team.

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NON-INVASIVE MECHANICAL VENTILATION IN ELDERLY PATIENTS WITH ACUTE RESPIRATORY FAILURE: 6-MONTH OBSERVATION STUDY IN A GERIATRIC HOSPITAL WARD

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INTRODUCTION: Acute respiratory failure (severely hypoxic or hypoxemic-hypercapnic) represents the outcome of various pathologies of which the elderly patient is a carrier (COPD exacerbated, heart failure, pulmonary fibrosis, bed rest syndrome, sepsis, obesity, etc) and which, in most cases, represents one of the main causes of hospitalization. Non-invasive mechanical ventilation is often started immediately in the emergency room and continued in the ward, or it can be undertaken in the ward for complications that affect the patient during hospitalization.As the elderly is not very suitable for oral-tracheal intubation and transfer to Intensive Care, NIMV is a very important therapy in the geriatrics ward. Before the Covid era, NIMV was carried out as a fundamental treatment of the aforementioned pathologies; during the Covid period and even now, NIMV has been further implemented, both to improve the prognosis in geriatric patients and also for the greater number of mechanical ventilators made available in internist departments, after the emergence of severe respiratory failure caused by Sarscov2.

OBJECTIVE OF THE STUDY: Therefore we tried to do a retrospective assessment of the first six months of 2022, by evaluating the number of geriatric patients undergoing NIMV, the pathologies that required it, the number of healed and discharged, with or without home NIMV, with oxygen and in ambient air.

MATERIALS AND METHODS: We evaluated all the patients and discharged in our Geriatrics department of Pescara from January 1st to June 30th 2022 and who have undergone non-invasive mechanical ventilation, with or without oxygen therapy. The mechanical ventilators used in our ASL from the Vivisol company, both single-tube and double-tube, with oronasal or total-face interface, in sizes S, M and L. We also used some ventilators, on loan for use, from the company LINDE and VITALAIRE. Mechanical ventilation was positioned for less than 96 consecutive hours (4 days), but also for over 96 consecutive hours, in intermittent mode (2-3 hours in the morning and

afternoon+all night), or even only during the night. For patients discharged with NIVM, the same was used throughout the hospital stay. The ventilatory modality most used with twin-tube ventilators is PSV, although some patients have requested the APCV modality especially at the beginning of the acute phase of respiratory failure. With single-pipe ventilators, the most commonly used ventilation was Bi-level S/T. CPAP modality was used in a couple of patients with pulmonary edema.

RESULTS: The patients admitted to our geriatrics UOC from January 1st to June 30th 2022 were 670. Patients undergoing non-invasive mechanical ventilation were a total of 117 (17,46%). These patients were 65 females and 52 males. The ages ranged from 77 to 99 years with a mean of 86 years (median 87). 54 patients died (46%) while those recovered 65 (54%).The pathologies of the 54 deceased patients (aged 77-99 years) were: Pneumonia (2 patients with covid)+Sepsis (4 patients with neoplasms) 29 total patients of which 9 with hypokinetic/bed rest sindromea; Heart failure (1 patient with covid and 2 with neoplasms) 15 patients; COPD with carbonarcosis 2 patients; Pulmonary embolism 2 patients; Pulmonary fibrosis 2 patients; Polytrauma 1 patient; Neoplasm and/or metastasis 3 patients.The pathologies of the recovered patients (aged 79-97 years) were: Heart failure (4 patients with OSAS/obesity-hypoventilation syndrome) 28 patients; Pneumonia (8 patients with covid)+Sepsis 19 total patients; Pulmonary fibrosis 5 patients; COPD exacerbated 11 patients. Of all these patients 9 were carriers of hypokinetic/bed restraint syndrome.Of the 63 patients recovered: 7 were transferred to the RSA, 1 patient (aged 79) was transferred to respiratory and motor rehabilitation (art. 56), 19 patients were discharged at home with activation ADI (for home FKT and continuation of care), 36 patients (57%) were discharged in the ordinary regime. For patients discharged from our ward, 23 patients (36,5%) were prescribed oxygen therapy; For 8 patients (12,7%) home-based NIMV was prescribed. At 4 patients prescribed home HFNC (1 Covid pneumonia, 2 exacerbated COPD and 1 Fibrosis. 28 patients (44% of the recovered and 24% of the total) were discharged into ambient air.

CONCLUSIONS: Acute/chronic respiratory failure represents one of the main causes of hospedalization of the elderly patient, burdened by high mortality. Pneumonia, also covid related, with associated sepsis, heart failure, COPD, pulmonary fibrosis and embolic complications are the main diseases that require mechanical ventilation, with or without oxygen, as a fundamental therapy associated with medical therapy.

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CASE REPORT: 82-YEAR-OLD PATIENT WITH MYXOMA OF THE SIA

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INTRODUCTION: Cardiac neoplasms represent a very rare pathology. Among these, myxoma is the most frequent and occurs mainly after the age of 50. It is a primary tumor of the heart, with an irregular appearance, anchored to the heart wall, frequently located in the left atrium, which can manifest itself depending on the size and location. Among the most characteristic symptoms are dyspnoea, lipothymia and/or syncope, palpitations, chest pain, fever, weight loss, widespread muscle aches. The most serious complication is embolism which, depending on the blood vessels affected, can manifest itself with neurological symptoms, pain or hemoptysis. We describe a case observed in our Geriatrics ward.

RESULTS: 82 –year-old patient, self sufficient in BADL and IADL, cognitively integrates, she lived alone, carrier of arterial hypertension being treated with losartan 50 mg/die and platelet disease in therapeutic follow-up at the Thrombosis Center, in therapy with oncocarbide 500 mg/die and acetylsalicylic acid 100 mg/die, she was admitted to the emergency room towards the end of September 2021 for a syncopal episode with a fall to the ground and a torn-bruised skull wound.The tests carried out in the emergency room showed a condition of chronic vascular homeland brain, blood tests within the room (except modest increase in Ddimer and BNP); the cardiological examination+ecoscopy documented low atrial rhythm with non-specific atypia of the r.v., modest hypertensive heart disease, ectasia of the root and ascending aorta and mild to moderate aortica insufficiency, and holter-ECG is recommended. Admitted to our geriatrics ward, the patient underwent an echocardiogram by the geriatrician cardiologist who highlighyed the presence of a hypoechoic formation (diameter about 22 mm) posterior to the interventricular septum. Furthermore, the holter-ECG documented the presence of sinus rhythm alternating with low atrial pathways (fc 68/min) interrupted by frequent premature beats SV, isolated and in tachyarithmic runs SV is atrial fibrillation lasting from a few minutes, rare isolated BEVs and RV alteration frequency dependent. For this reason, bisoprolol 1,25 mg/die and rivaroxaban 20 mg/die therapy was initiated. To better characterize cardiac formation, angio-TC thoracic aorta, transesophageal echocardiogram were performed. This solid oval formation (dmaximum diameter 22 x 28 mm) was positioned at the level of the antero-inferior portion of the SIA, adiacent to non-coronary Valsalva sinus; There were no signs referable to myopericardial edema and there were non intracavitary thrombotic formations. The differential diagnosis initially included fibroid and myxoma. After all the various diagnostic tests, the patient was discharged in optimal clinical conditions with the aforementioned therapy (in addition only torasemide 5 mg was added) and with the indication to perform control cardiac MRI at the distance of 6-12 months. The lady then carried out an outpatient cardiac surgery visit which recommended the removal of the myxoma, carried out in May 2022 at the heart surgery department of Gemelli di Campobasso. Histological examination confirmed the suspicion of myxoma.

CONCLUSIONS: The cardiac myxoma, although it is the most common cancer of the heart, is however a rare condition. During hospitalization in geriatrics, after the ultrasound performed in the emergency room and the holter ECG carried out in our department and that has documented the presence of FAP, the patient could have been discharged after adjusting the therapy and monitoring for a few days. Instead, the execution of a traditional echocardiogram, performed by the geriatrician cardiologist, allowed to make a diagnosis of mixoma and to proceed to further investigations to characterize myxoma.The non- identification of the same could have manifested itself in the future with other symptoms, even serious ones and and with uncertain prognosis.

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TELEMEDICINE AS A RESOURCE FOR CARE TRANSITION IN OLDER PATIENTS ADMITTED TO A PALLIATIVE CARE UNIT

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BACKGROUND: The need of re-thinking health services with the strengthening of e-Health initiatives has become evident with the Covid-19 pandemic, which, in fact, has hindered access to care for many chronic and comorbid patients, in particular to the most frail. For these reasons, in July 2020 it was planned to use a telemedicine program in our Palliative Care Unit (PCU).

AIM: The aim of the program was to integrate telemedicine as a permanently resource in the care of older patients admitted to the PCU of our Hospital.

METHODS: The telemedicine program is addressed to older patients admitted to the PCU for both oncological and non-oncological pathologies. According to the recommendations of the Liguria Region Health Agency (A.Li.Sa), the first visit is performed in presence at the PCU ambulatory, while the subsequent ones can take place remotely. Inclusion criteria into the telemedicine PCU program were: 1) consent to be followed by the PCU team with a telemedicine program; 2) patients with a stabilized clinical picture; 3) a pain control assessed by the Numerical Rating Scale (NRS) ≤ 4. Patients admitted to the telemedicine program were followed on a monthly basis or depending on the needs. Patients could be visited in presence at any time in the case of changes in clinical stability.For the telemedicine program, the computerized folder already in use has been modified, including the telemedicine version of the Multidimensional Prognostic Index (TELE-MPI), the Karnofsky Index and the ECOG Performance Status Scale. A dedicated computerized agenda has also been created. The system of data storage, transmission of reports, privacy collection, and management of teleconsultations on a dedicated platform has been optimized.

RESULTS: In the period July 2020-June 2022 a total of 93 patients (61 cancer patients and 32 non-oncological patients) were included in the telemedicine program with a total number of 335 televisits. The sample study includes 44 males and 49 females with a mean age of 66.8 years (range 50-94 years); the number of televisits per patient was 3.6 (range 1-20). During the study period, 8 subjects (8.6% of all patients) voluntarily suspended the telemedicine program; 8 patients (8.6%) were hospitalized, 2 patients (2.1%) were admitted to a Nursing Home and 2 patients (2.1%) have been included in home-care assistance program (2.1%). The televisits had an average duration of 17 minutes (range 11-30 minutes). Patients and their caregivers expressed their satisfaction with the service offered by the telemedicine program.

CONCLUSIONS: A telemedicine program for older patients admitted in the PCU demonstrated an high compliance by patients, with only 8.6% of patients dropped out from the program. The telemedicine monitoring program was effective in early identification of clinical changes of the disease as well as of care assistance needs of patients, as documented by the low number of hospital and nursing home admissions. Finally, the agreement to the telemedicine program by patients and their caregivers was generally favorable.

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ESTIMATED GLOMERULAR FILTRATION RATE PREDICTS THE FALL RISK IN THE ELDERLY

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INTRODUCTION: The prevalence of elderly subjects is dramatically increasing worldwide, posing a challenge of sustainability for public health systems in view of the wealth of chronic diseases that associates with human senescence. In clinical practice, fall risk assessment tools of elderly subjects have been developed and tested, although the predictive accuracy of those tools is not very high. [1] Kidney function is affected by ageing and chronic kidney disease (CKD) is pervasive in the elderly, [2,3] although not always it has a pathological meaning in this age group.

AIM OF THE STUDY: The aim of this study was to evaluate the presence of a possible correlation between estimated glomerular filtration rate (eGFR) and fall risk in a well-characterized population of elderly subjects.

METHODS: 78 consecutive patients (37 males and 41 females, average age 83±12 years) were enrolled, all of them referred to the Geriatrics Department of the University Hospital of Catanzaro. All subjects underwent complete physical examination, routine blood laboratory testing and multidimensional geriatric evaluation. The risk of falls was assessed by means of the Tinetti scale (values <20 indicate a high risk of falls).[4] Comparisons between groups were made by τ-test Student or χ-square, as indicated. To evaluate the correlation between Tinetti score and different covariates, a simple and multiple linear regression analysis was carried out.

RESULTS: Mean eGFR values in the whole study population were 60.5±23.9 ml/min/1.73 m2 and the mean score on the Tinetti scale was 16.8±7.0. At linear regression analysis, the Tinetti score was directly correlated with eGFR (r= 0.458, P<0.0001), and inversely correlated with age (r= -0.248, P= 0.014), the presence of diabetes mellitus type 2 (r= -0.192, P= 0.046), and the presence of coronary artery disease (r= -0.377, P<0.0001). At multiple regression analysis, eGFR was the main independent predictor of the Tinetti score, explaining 21% of its variation; the addition of coronary artery disease explained an additional 11.7% of its variation.

CONCLUSIONS: The results of this study demonstrate, for the first time, a direct correlation between eGFR values and fall risk (evaluated by Tinetti score) in a population of elderly people with normal renal function. These results, although obtained on a small scale, unveil new scenarios for the hospital/home/nursing management of elderly patients with a new view to assessing falls risk. In a frail population such as that of the present study, use of a predictive factor, low-cost and easily available, can improve the choice of standard and personalized prevention care interventions, decreasing the number of predictable falls and any prognostic complications,often, of long and difficult resolution.

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HEMOGLOBIN AND FALL RISK IN A POPULATION OF ELDERLY SUBJECTS

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INTRODUCTION: Anemia is common in older persons and

associated with frailty, falls, cognitive decline, depression, worsening functional ability and early mortality.[1] According to the WHO criteria, 21.1%, 30.7% and 37.0% of inpatients and outpatients aged over 64, 80 and 90 years, respectively, have anemia. Overall, an estimated 17% of those aged >65 years were found to have anemia. The prevalence of anemia increases with age, it is higher in men than in women and it is higher in black people than in white people.[2,3] Anemia in older individuals is associated with a wide range of complications, including increased risk of mortality and cardiovascular disease. Anemia has been reported to worsen angina and congestive heart failure, as well as cognitive dysfunction related to cerebrovascular pathology. Red blood cells count has been indirectly associated with the duration of hospital stay for elective procedures, while it showed a direct correlation with mobility and bone density. [4,5] Falls are common in the elderly often with dramatic consequences. In clinical practice, tools commonly used to assess fall risk do not show an acceptable predictive accuracy.

AIM OF THE STUDY: According to our knowledge, there are no studies that have investigated a possible correlation between anemia and fall risk. Therefore, the aim of the present study was to evaluate the presence of a possible correlation between hemoglobin (Hb) values and fall risk in a population of elderly subjects.

METHODS: 78 consecutive patients (37 males and 41 females, average age 83±12 years) were enrolled, all of them referred to the Geriatrics Department of the University Hospital of Catanzaro. All subjects underwent complete physical examination, routine blood laboratory testing and multidimensional geriatric evaluation. The risk of falls was assessed by means of the Tinetti scale (values <20 indicate a high risk of falls). [6] Comparisons between groups were made by τ-test Student or χ-square, as indicated. To evaluate the correlation between Tinetti score and different covariates, a simple and multiple linear regression analysis was carried out.

RESULTS: Mean Hb values in the entire study population were 12.3±1.79 and the mean score of the Tinetti scale was 16.8±7.0. Mean systolic blood pressure values were 132.7±19.2 mmHg and diastolic blood pressure values were 73.59±33.3 mmHg. At the linear regression analysis the Tinetti score was directly correlated with Hb (r= 0.363, P<0.0001), and inversely correlated with age (r= -0.248, P= 0.014), the presence of type 2 diabetes mellitus (r= -0.192, P= 0.046) and the presence of coronary artery disease (r= -0.377, P<0.0001). At the multiple regression analysis, Hb was found to be the main independent predictor of the Tinetti scale score, explaining 14.2% of its variation while the presence of coronary artery disease added a further 8.9%.

CONCLUSIONS: The results of this study on a well-characterized population of elderly patients demonstrate the existence of a direct correlation between Hb values and fall risk. It is interesting to observe that these results were obtained with almost normal Hb average values. Therefore, the present study, although made on a small population, reiterates the need of a global assessment for the elderly patient in order to identify all possible points of frailty and to implement all of prevention. Falls often represent a dramatic event for the already weak balance of the elderly subjects and their prevention is an essential aspect of taking charge of this particular type of patients.

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USE OF ANTIVIRAL MEDICATIONS IN OLDER PEOPLE AFFECTED BY COVID-19: AN OBSERVATIONAL, PROSPECTIVE, MULTICENTER STUDY

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BACKGROUND: The literature regarding the use of antiviral medications for treating patients affected by coronavirus disease (COVID-19) is still conflicting. In particular, data regarding the importance of prognostic tools is largely unexplored. The aim of this research was to evaluate if the Multidimensional Prognostic Index (MPI), based on the Comprehensive Geriatric Assessment (CGA), may help physicians in identifying older hospitalized patients affected by COVID-19 who might benefit from the use of antiviral medications in hospital.

METHODS: Older people hospitalized for COVID-19 in ten European hospitals were followed-up for 90 days after hospital discharge. MPI was calculated using eight different domains typical of the CGA. A propensity score, Cox's regression analysis was used for assessing the impact of antivirals on mortality (overall and in hospital), stratified by MPI=0.50.

RESULTS: Among 502 older people hospitalized for COVID-19 (mean age: 80 years), 140 were treated with antiviral medications. During the 90 days of follow-up, 175 deaths were reported, 115 in hospital. The use of antiviral medications significantly decreased the risk of overall mortality (hazard ratio, HR: 0.70; 95% confidence intervals, CIs: 0.48-0.991; HR=0.54; 95%CI: 0.35-0.83 in propensity score analysis) in the sample as whole. However, the effect was present only in less frail participants (HR=0.46; 95%CI: 0.22-0.96; HR=0.47; 95%CI: 0.22-0.96 in propensity score analysis), but not in frailer individuals. No effect on in hospital mortality was observed.

CONCLUSIONS: MPI could be useful for better individualizing older people hospitalized by COVID-19 who could benefit from antivirals.

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FRAILTY AND ANTICOAGULANT TREATMENT IN OLDER SUBJECTS WITH ATRIAL FIBRILLATION: FINDINGS FROM THE EUROPEAN, MULTICENTRE, PROSPECTIVE EUROSAF STUDY

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BACKGROUND: The literature regarding anticoagulants use in older people affected by atrial fibrillation (AF) is mainly limited to retrospective studies that poorly considered the importance of multidimensional frailty. The main objective of this study is to evaluate in hospitalized older subjects with AF the clinical benefit/risk ratio of the anticoagulant treatments, also considering grade of severity of frailty as determined by the multidimensional prognostic index (MPI).

METHODS: Older hospitalized patients (age>65 years) with non-valvular AF were included across 24 European centers. MPI was calculated using tools derived from comprehensive geriatric assessment (CGA), classifying participants in MPI1 (robust), MPI2 (at risk of frailty) and MPI3 (frail). Anticoagulant treatments and the outcomes of interest (mortality, vascular events, gastrointestinal bleedings, hemorrhagic stroke) during one year of follow-up were recorded using hospital records. The association between anticoagulant treatments and outcomes was analyzed using a fully-adjusted Cox's regression analysis and reported as hazard ratios (HRs) with their 95% confidence intervals (CIs).

RESULTS: 2,022 participants (mean age 82.9 years; females 56.6%) with AF were included. Compared to people not taking anticoagulants (n=823), people using vitamin K antagonists (n=450) showed a decreased risk of mortality (HR=0.74; 95%CI: 0.59=0.93), that was more pronounced in patients using direct anticoagulants (DOACs) (n=749) (HR=0.46; 95%CI: 0.37-0.57). Only people taking DOACs reported a significantly lower risk of vascular events (HR=0.55; 95%CI: 0.31-0.97). The efficacy of DOACs was independent from MPI values, whilst VKAs use was not associated with any benefit in terms of mortality. The risk of gastrointestinal bleedings and hemorrhagic stroke did not differ based on the anticoagulant treatments and by MPI values.

CONCLUSIONS: Anticoagulant treatment, particularly with DOACs, was associated with reduced mortality and vascular events in older people, independently from their frailty status, without increasing the risk of hemorrhagic events, overall suggesting the importance of treating with anticoagulants older people with AF.

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COVID-19 VACCINATION MONITORING IN NURSING HOME: A PERSPECTIVE, OBSERVATIONAL, MULTICENTRIC STUDY OF THE ITALIAN GERIATRIC HOSPITAL AND COMMUNITY SOCIETY (SIVAX-RSA)

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BACKGROUND: The efficacy and safety data of COVID-19 vaccines currently available for older subjects residing in nursing homes are still very scarce. In particular, the percentage and degree of effectiveness of response to the vaccine in older people with different degrees of frailty is not yet defined. For this reason, in the SIVAX-RSA study we monitored the degree of effectiveness, in terms of reduction of severity of the COVID-19 disease, hospital admissions, mortality, considering the presence of frailty, as evaluated by the Multidimensional Prognostic Index (MPI).

METHODS: Nursing home residents of all Italian Regions were included. MPI was calculated according to standard comprehensive geriatric assessment (CGA) evaluation: the residents were divided in robust, pre-frail, frail according to two cut-offs (0.33 and 0.66). The presence of delirium using the 4AT scale. The presence of neuropsychiatric symptoms due to dementia using the Neuropsychiatric Inventory (NPI), whilst global cognitive function was analyzed using the mini-mental state examination (MMSE). The results are reported at the baseline evaluation.

RESULTS: Between June 2021 and September 2022, 558 nursing home residents (mean age: 85.3 years, 70.8 females) were included across 26 nursing homes. Of them, 25.0% suffered from COVID-19 infection, before the vaccination. Only 7/558 participants did not get the vaccination against COVID-19. The prevalence of multidimensional frailty, according to the MPI, was 51.8%, pre-frailty 38.7%, and only 9.5% could be considered robust. Considering the cognitive status, the MMSE was, in mean, 7.1/30 indicating a severe cognitive impairment, whilst the mean NPI was 22/126, indicating the presence of relevant neuropsychiatric symptoms. The 12.4% took quetiapine. About two thirds of the residents reported values of 4AT indicative of possible delirium.

CONCLUSIONS: Whilst the coverage of anti-COVID-19 vaccination was satisfactorily, nursing home residents reported a high prevalence of multidimensional frailty and cognitive impairment or other cognitive problems, such as delirium.

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INTEREST IN VACCINATIONS IN OLDER PEOPLE: A SURVEY OF MEMBERS OF THE *SOCIETÀ ITALIANA GERIATRIA OSPEDALE E TERRITORIO* (SIGOT)

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BACKGROUND: Vaccinations against infectious diseases are a public health priority, also in older people, but the knowledge of geriatricians regarding this important topic is still limited. The aim of this survey made among the members of the Società Italiana Geriatria Ospedale e Territorio (SIGOT) is to explore how far vaccinations are known in the Italian geriatric community.

METHODS: A survey freely available on the SIGOT website was disseminated using social channels and emails. The questionnaire was available from May 2022. The questionnaire specifically addressed general characteristics, demographics, supposed efficacy and barriers for vaccinations and the importance of vaccinations in clinical practice.

RESULTS: 113 participants (females=50.4%, age (years): <40=31%, 41-60=37.2%, >60=31.8%) from all Italian Regions were included. The 83.2% of SIGOT members answered that vaccination status of the subject is included in the standard geriatric evaluation (always=47.8%, often=35.5%); 90.3% of geriatricians declared that vaccination is effective in old age. Responders reported that the most important cause of unwillingness to get vaccinated is the fear of potential side effects (67.3%) and low information of older people (50.4%). The SIGOT members reported that caregivers have an important role in improving vaccinations' adherence (total= 91.2%, always=41.6%, often=49.6%). Whilst the knowledge of suggested vaccinations for older people is overall good, the indication for the vaccinations suggested by the National Vaccination Prevention Plan (PNVN) is large for influenza and pneumococcus and less strong for herpes zoster and diphtheria-tetanus-pertussis. 95.6% of responders reported a relevant role of geriatricians as prescriber (57%), consultant (55%) or execution (31%) of the vaccination

also in the nursing home setting. Finally, most of geriatricians declared that training of healthcare professionals (62.8%) and more information programs for older adults (62.8%) could be useful to improve the vaccination rate of the PNVN vaccination programs.

CONCLUSIONS: Vaccinations are important in old age, but the knowledge regarding some recommended vaccinations should be improved among geriatricians in order to better protect older people against preventable diseases.

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RISK OF DEATH IN NURSING HOME RESIDENTS: THE INTERPLAY AMONG FRAILTY, DISABILITY, POLYPHARMACY, AND MULTIMORBIDITY

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BACKGROUND: Frailty, disability, and polypharmacy are common in nursing home residents, often co-occurring with the presence of multimorbidity. There may be a complex interplay among them in terms of outcomes such as mortality.

OBJECTIVES: To i) assess whether nursing home residents with polypharmacy (4-9 medications) or hyperpolypharmacy (10 or more drugs), have an increased risk of death and ii) whether any association is modified according to the presence of frailty or disability. Design: Cohort study with longitudinal mortality data. Setting: Nursing home residents in The Services and Health for Elderly in Long Term care(SHELTER) cohort study (2009-11). Participants: 4,023 residents from 50 European and 7 Israeli nursing home facilities (meanage=83.6 years, 73.2% female).

METHODS: Participants were evaluated with the interRAI-LongTerm Care assessment tool (InterRAI-LTCF). Frailty was evaluated with the FRAIL-NH scale. Hazard ratios (HR) of death over 12 months was assessed with stratified Cox proportional hazards models adjusted for demographics, nursing home facilities, and cognitive status.

RESULTS: A quarter (n=1042, 25.9%) of participants were not on polypharmacy, 49.8% (n=2002) were on polypharmacy, and 24.3% (n=979) on hyperpolypharmacy. Frailty and disability were the factors that mostly increased risk of death in the study population (frailty: HR= 1.54, 95%CI 1.23-1.94; disability: HR= 2.03, 95%CI 1.66-2.50). Among non-frail participants, multimorbidity (HR=1.35, 95%CI=1.05-1.74) and hyperpolypharmacy (HR=1.29, 95%CI=1.01-1.84) were associated with a higher risk of death. Among frail participants, no factors were significantly associated with mortality. Polypharmacy and multimorbidity were not associated with mortality after stratification for disability.

CONCLUSIONS: Frailty and disability are the strongest preditors of death in nursing home residents. Multimorbidity and polypharmacy appear to increase mortality only in people without frailty. This may be relevant for planning which vulnerable older people should be targeted for deprescription.

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VITAMIN E AND INFLAMMATION IN LATE ONSET ALZHEIMER'S DISEASE: THE ROLE OF MIR122

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INTRODUCTION: Late-Onset Alzheimer's disease (LOAD) is the most frequent type of dementia worldwide and represents one of the leading causes of severe disability in older persons. Although its etiology is not known yet, LOAD may develop due to multiple factors, including inflammation and oxidative stress where microRNAs (miRNAs) play a role as a molecular switch. In this context, nutrition plays a pivotal role. Therefore, vitamin E has been proposed as a potential clinical intervention for LOAD, given the plausibility of its various biological functions in influencing the neurodegenerative processes associated with such a condition. This study aimed to investigate the network among miRNAs, inflammation, and Vitamin E.

METHODS: We measured the serum concentrations of miRNAs selected from literature and involved in AD pathogenesis and thirty cytokines by Multiplex analysis and Vitamin E isoforms by HPLC with EC coularray from a cohort of eighty older persons and analyzed their role as factors for LOAD.

RESULTS: The sample population includes 80 subjects with a mean age of 77.6±3.8 years (age range: 70-85 years old), mostly women (45; 56.2%). 40 (50%) were healthy control (HC), and 40 (50%) had LOAD. Among all variables examined, GCSF, GMCSF, INFa2, IL17, IL3, and IL8 differed significantly between groups. Among the Vitamin E isoforms, only α tocopherol (22.24± 2.25 *vs.* 24.63 ±2.76, $p<0.0001$) differed between groups having LOAD significantly lower levels as compared with HC (22.32± 0.40 *vs.* 24.55 ±0.40, $p<0.0001$). Among all miRNAs examined (let7f5p, miR9, miR15a, miR21, miR29b, miR122, miR132, mir29a, mir128, mir491, mir146, mir34, mir874), only miR-122 correlated significantly and positively with α tocopherol ($r=329$, $p=0.006$) even after correction for age and gender. Indeed, a final binary logistic regression analysis showed that independently of age and gender, α-tocopherol serum levels were associated with a higher probability of LOAD, which was partially mediated by miR 122.

CONCLUSIONS: miR-122 is a highly studied miRNA due to its role in cholesterol metabolism. Our results suggest an interplay between inflammation, Vitamin E, and microRNAs in LOAD. So, it is conceivable that micronutrients could modulate the LOAD susceptibility, whereas miR122 may be a good candidate as modulating factor.

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