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# geriatric Care

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# Geriatric Care

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# 35° CONGRESSO NAZIONALE SIGOT

SOCIETÀ ITALIANA DI GERIATRIA OSPEDALE E TERRITORIO

## EDIZIONE VIRTUALE



16/18 GIUGNO 2021  
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### N. 1

#### CONTROL OF CORE TEMPERATURE IN MAJOR ORTHOPEDIC SURGERY AND NEUROTRAUMATOLOGY USING LEVOBUPIVACAINE FOR SPINAL ANESTHESIA IN OLD PATIENTS WITH DELIRIUM USING DONEZEPIL

Barbara Amarisse<sup>1</sup>, Amedeo Zurlo<sup>2</sup>

<sup>1</sup>University of Ferrara and San Marino, <sup>2</sup>University of Ferrara, Italy

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%; severe delirium 5%; delirium in the postoperative stage 15%; delirium on discharge 5%; delirium in the control stage after discharge 4%. 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%; severe delirium 12%; delirium in the postoperative stage 29%; delirium on discharge 13%; delirium in the control stage after discharge 19%. Pharmacological treatment of delirium: with intraoperative heating donezepil 5 1 pill day, Haloperidol 8 drops; without intraoperative heating donezepil 10 1 pill once/day and Haloperidol 1 dose i.m.; without intraoperative heating with mini nutritional assessment low olanzapine 1 pill once/day, donezepil 10 1 pill once/day, Haloperidol 1 dose i.m. The mini nutritional assessment has been assessed in the pre and postoperative stage in major orthopaedic surgery. In the randomised study, the mini nutritional assessment has been assessed in the pre and postoperative stage with distinction in the two groups A and B. 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.

### N. 2

#### HIGH ADHERENCE TO SECONDARY PREVENTION TREATMENTS, LOW RE-HOSPITALIZATION AND MORTALITY RATES AMONG OLDER ADULTS WITH HIP FRACTURES ENTERED THE ORTHOGERIATRIC OUTPATIENT SERVICE

Marta Baroni<sup>1</sup>, Marika Ferracci<sup>1</sup>, Anna Rita Bianco<sup>1</sup>, Giuseppe Rocco Talesa<sup>2</sup>, Alessandro Cirimilli<sup>2</sup>, Valentina Prenni<sup>1</sup>, Valentina Bubba<sup>1</sup>, Giuseppe Rinonapoli<sup>2</sup>, Auro Caraffa<sup>2</sup>, Virginia Boccardi<sup>1</sup>, Patrizia Mecocci<sup>1</sup>, Carmelinda Ruggiero<sup>1</sup>

<sup>1</sup>Geriatric and Orthogeriatric Unit, SM Misericordia Hospital, University of Perugia, <sup>2</sup>Orthopedic and Traumatologic Unit, SM Misericordia Hospital, University of Perugia, Italy

**OBJECTIVES:** To compare the outcomes of hip fracture patients who entered the interdisciplinary fracture liaison serv-

ices (FLS) with those who followed the usual orthopedic care (UOC).

**METHODS:** A prospective observational study including subjects aged ≥65 years hospitalized because of hip fracture. At the time of discharge, participants who underwent surgery were invited to enter FLS, received a schedule of lab and x-ray exams and outpatient orthogeriatric assessment within 30 days from surgery.

**RESULTS:** Among 762 patients eligible within 1 year, 540 (71.0%) attended the 30-day outpatient visit: 268 (49.6%) opted for FLS while 272 (50.3%) for UOC. The patients who entered the FLS compared to those in the UOC had higher 1-year adherence to Vitamin D supplementation, plus calcium if needed, as well as adherence to the specific anti-osteoporosis drug (75.1% vs 8.0%; P<0.0001), and complete anti-fracture treatments (defined as a combination of the specific anti-osteoporosis drug plus vitamin D, and calcium if needed) (72.3% vs 5.7%; P<0.0001). The older adults who entered the FLS experienced a longer time of hospitalization free survival (176.4 vs 88.7 days; P=0.0152) compared to those in UOC. Compared with participants in the UOC, a tendency to a lower annual mortality rate (19.7/100 person-year vs 25.5/100 person-years; HR=0.62; 95% CI 0.35; 1.09) was found in those entered the FLS group independent of confounders.

**CONCLUSIONS:** The FLS may increase initiation and adherence to antifracture treatments over time. Compared with UOC, FLS may positively impact on health-related outcomes, such as time free from re-hospitalization and mortality rates.

### N. 3

#### BODY FLUID STATUS IN OLDER PERSONS: A PRELIMINARY STUDY OF DIAGNOSTIC ACCURACY OF A COMPLETE HYDRATION ASSESSMENT

Anna Rita Bianco<sup>1</sup>, Marco Tagliavento<sup>1</sup>, Silvia Brogna<sup>1</sup>, Anna Grazia Cocomazzi<sup>1</sup>, Giulia Caironi<sup>1</sup>, Carla Caponi<sup>1</sup>, Carmelinda Ruggiero<sup>1</sup>, Patrizia Mecocci<sup>1</sup>, Virginia Boccardi<sup>1</sup>  
<sup>1</sup>SC Geriatria, Azienda Ospedaliera di Perugia, Perugia, Italy

**INTRODUCTION:** Dehydration in older persons contributes to increased morbidity and mortality during hospitalization. As such, early diagnosis of dehydration may improve patient outcome and reduce the burden on healthcare. This study investigated the diagnostic accuracy of routinely physical and biochemical signs, and non invasive instrumental markers of hydration by BIA (Bioelectrical Impedance Analysis) and POCUS (Point Of Care Ultrasonography).

**METHODS:** This is an observational preliminary study performed in a Hospital acute medical care unit (Geriatric section) on 34 patients. Hydration assessment comprised physical (systolic blood pressure, skin turgor, and capillary refill time), biochemical (plasma osmolality, urea, creatinine), instrumental (inferior vena cava diameters, aorta diameters as well as complete bioimpedance analysis signs). The urea to creatinine ratio were assessed as reference standards of hydration status: hyperhydrated subjects

(urea/creatinine <40); normohydrated subjects (urea/creatinine 40-100); dehydrated subjects (urea/creatinine >100).

RESULTS: 34 (24 F and 10 M) patients were enrolled in the study. There were no significant differences in the distribution of sex ( $\chi^2=3.944$ ;  $P=0.139$ ) and age ( $86\pm 3$  vs  $86\pm 5$  vs  $91\pm 9$ ;  $P=0.214$ ) between groups. Among all parameters considered we found that the calculated plasma osmolality ( $P=0.001$ ) significantly differed between groups. We then performed a simple correlation analysis between calculated plasma osmolality and all available hydration indicators finding that this parameter correlated positively and significantly with TBW/FFM ( $r=0.451$ ;  $P=0.007$ ), capillary refill ( $r=0.551$ ;  $P=0.001$ ), BNP ( $r=0.425$ ;  $P=0.030$ ), BUN/creatinine ( $r=0.585$ ;  $P<0.001$ ), cava aorta index ( $0.312$ ;  $P=0.05$ ). However, a ROC analysis showed that the calculated plasma osmolality (AUC:  $0.857$ ,  $P=0.05$ ) was the best parameter to define the hydration status in older persons.

#### N. 4

##### CO-HOUSING IN THE OLD AGE

Valentina Campoli<sup>1</sup>, Daniela Prati<sup>2</sup>, Raffaella M. Scoyni<sup>3</sup>

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Nowadays, the phenomenon of “living together” is generally accepted at the cultural level when it comes to student residences or rooms rented by young workers. The issue changes when it comes to elderly people care. In this case, there may be some cultural prejudices that are holding back the development of a community housing model. We are still too tied to traditional family models, in which the needs for care and socialization are delegated and expressed only within the members of the nucleus; not to mention an age-related aspect of habit: the elderly often do not like to live with others, share spaces and objects or change homes or neighborhoods. According to the Italian Statistics Agency (Istat), by 2050 there will be 263 elderly people for every 100 young people and the welfare system, still based mostly on the work of women in healthcare and on families, risks imploding. Cohousing will represent a valid alternative to the expensive fees of homes for elderly people and to a life in a more or less anonymous room. Except for special cases that require close and constant medical care, for grandparents and grandmothers living together is not only a way to save on expenses, which sometimes have a huge impact on increasingly poor pensions, but above all for companionship. The phenomenon of co-housing, or in other words sharing of living spaces, interests, experiences and habits between elderly people, is finally taking shape in Italy. A research conducted in the United States shows, for example, that keeping company and passing days together among elderly people guarantees at least 10 more years of self-sufficiency. In this regard, the Department of Social Policies of the Municipality of Rome has opened several co-housings in its area including “Casa Giada” in the Giustiniana district, “Casa Gaia” in the Torre Angela District, “Casa delle Viole” in the Monteverde district. The goal is to respond to people’s social housing needs by reducing the social marginalization of fragile citizens, to favour the socialization and autonomy of people, to reduce institutionalization and improper hospitalizations by pursuing greater effectiveness and appropriateness to the responses of well-being. The “Houses” offer hospitality for about 6/8 people, who contribute to the management costs of the shared apartment. The third sector, the managing company, is responsible for providing social assistance to guests, paying particular attention to the peculiarities of people and group. The fundamental objective is to favour the maintenance of their autonomy and support in the most delicate situations. There are activities that promote active aging both through activities aimed at prevention of disabling diseases and through cultural stimuli that allow to maintain passions of each guest.

#### N. 5

##### PROTECTED DISCHARGE OF THE ELDERLY PATIENT: ULTRASOUND CONTRIBUTION

Vito Carrieri<sup>1</sup>, Giovanni Argentieri<sup>1</sup>, Grazia Cotella<sup>1</sup>, Vincenzo Paternò<sup>1</sup>, Luca Di Lena<sup>1</sup>, Mafalda Candigliota<sup>1</sup>, Antonella Bray<sup>2</sup>

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INTRODUCTION: The protected discharge of the elderly consists in a hospital discharge in which the family doctor or the residential structure or the family unit is suggested the appropriate ways to manage the delicate period of home discharge or in an RSSA or RSA and all the procedures for the optimal management of the elderly patient. The aim of the work is to verify whether elderly patients who have made use of an adequate complete ultrasound evaluation during hospitalization can be more adequately assisted at home by the doctor, health workers and care givers or in the residential facility by medical health personnel and nursing and healthcare professionals.

MATERIALS AND METHODS: The clinical and care aspects of 100 elderly patients (age 80-95 years, 65 women, 35 men) were observed, who were scheduled to undergo a protected discharge procedure at home in Integrated Home Care or in a Residential facility (RSA or RSSA). The abdominal and thyroid ultrasound and a TSA Doppler were performed before discharge from the hospital ward of Geriatrics. A clinical and ultrasound record was prepared and the patient was subsequently monitored after 6 months and one year after discharge, with the collaboration of the doctor and health workers, both at home and in the residential structure.

RESULTS: The 100 elderly patients who underwent ultrasound were affected by the following pathologies: 25 patients with prostatic hypertrophy, 50 patients with chronic renal failure had reduced kidney volume, of which 30 with cysts, 7 with lithiasis, 2 with hydronephrosis. In addition, 15 patients with gallbladder lithiasis, 5 patients with bladder lithiasis, 10 patients with cirrhosis of which 2 with ascites, 4 patients with ascites and heart failure, 8 patients with pleural effusion, 8 patients with heart failure and pleural effusion. 4 patients with liver cancer, 1 patient with gallbladder cancer, 1 patient with renal cancer and 1 patient with bladder cancer. Chronic pathologies highlighted with ultrasound (US) have suggested to the doctor to plan periodic checks with laboratory tests and with US; neoplastic pathologies have involved other specialists consulted by the treating physician.

CONCLUSIONS: In conclusion, the ultrasound-clinical card that accompanied the documents necessary for the protected discharge of the elderly turned out to be a precious help both for the General Practitioner, in charge of the home ADI, and for the doctor of the residential facility and for the care giver and for all health professionals.

#### N. 6

##### POCUS (POINT OF CARE ULTRASOUND) IN THE MANAGEMENT OF THE GERIATRIC PATIENT

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INTRODUCTION: The aim of the work is to illustrate the



role of the Point of Care UltraSound (PoCUS) in the management of the elderly patient. The PoCUS is a clinical procedure with the execution of an ultrasound examination, at the same time as the execution of the traditional phases of the clinical approach (anamnesis, physical examination) which allows to obtain useful information for the optimal evaluation and management of the patient. This procedure is certainly indispensable in the Emergency Room evaluation of the patient and can be very useful in the subsequent diagnostic and therapeutic approach to the patient, especially to the elderly with multiple pathologies.

**MATERIALS AND METHODS:** 1000 patients aged between 65 and 95 years (630 women and 370 men) were evaluated with ultrasound (US) performed in the first 6 hours after admission to Geriatrics. The US was performed by experienced specialist who had acquired adequate competence by performing at least 1000 US both bedside and PoCUS. Based on the symptoms presented by the patients and in relation to the clinical presentation and the data highlighted with anamnesis and physical examination, the specialist in geriatrics expert in ultrasound performed the complete US (neck, chest, abdomen) in order to detect or confirm diseases of the neck, abdominal pathologies, cardiorespiratory pathologies, pathologies of the lower limbs. In particular, the 1200 patients were divided, following the clinical examination and the execution of the US, into 4 groups, based on the prevalent pathology highlighted by the PoCUS procedure. The division into groups made it possible to evaluate the prevalence of multiple acute or subacute pathologies, which make use of the PoCUS, which very often complicate the clinical picture of the elderly patient with multiple pathologies and which lead to suggest hospitalization.

**RESULTS:** The application of the PoCUS procedure made it possible to divide the patients into 4 groups with the following prevalent pathologies: 1. Neck pathologies: volumetric increase of the lymph nodes of the neck (71 patients, 43 inflammatory, 28 neoplastic) and nodular (131 patients) or diffuse (42 patients) thyroid pathologies. 2. Cardiorespiratory disorders: Pleural effusion (219 patients), congestive heart failure (179 patients), pericardial effusion (43 patients), pleural or pulmonary neoplastic diseases (31 patients), ultrasound-evident pulmonary inflammatory diseases (32 patients). Abdominal disorders: Ascites (117 patients), Primary or secondary hepatic neoplasms (87 patients), Decompensated liver disease and cirrhosis (111 patients), Renal neoplasms (14 patients), Abdominal aortic aneurysm (23 patients), Hydronephrosis (51 patients), Lithiasis Cholecystic (232 patients), Cholecystitis (27 patients), Renal lithiasis (44 patients), Cyst hepatic (21 patients) renal bulky cysts (47 patients), obstructive lithiasic jaundice (39 patients), neoplastic obstructive jaundice (13 patients), pancreatic neoplasms (17 patients), digestive tract neoplasms (11 patients), diverticulitis (5 patients), pelvic masses (12 patients), abdominal hematomas (5 patients), abdominal lymph node masses (5 patients) 4. Lower limb disorders: thrombophlebitis (43 patients), hematomas (13 patients). 30% of elderly patients had associated diseases detectable with the PoCUS procedure. The prevalence of acute abdominal diseases was very significant and this data has confirmed the need to submit the elderly patient, at the time of clinical evaluation, also to a complete ultrasound examination. Elderly patients in whom the PoCUS procedure was applied were therefore subjected early to adequate subsequent diagnostic investigations, specialist consultations and adequate medical or surgical therapy. The evaluation of the results allows us to state that neoplastic pathology is very frequent in the elderly patient and is often associated with known chronic pathologies. The use of emergency hospitalization therefore requires the execution of a complete ultrasound evaluation which, even in the absence of neoplastic pathologies, often highlights the complications of known pathologies, especially cardiorespiratory and abdominal.

**CONCLUSIONS:** Based on the results of the PoCUS procedure in 1000 elderly people admitted to geriatrics, it is possible to conclude that in the traditional first clinical approach with anamnesis, physical examination, EGA, ECG, chest x-ray, US could be always performed very early in the elderly patient. In fact, the acute and subacute pathologies highlighted in our evaluation confirm that in the elderly patients who are hospitalized in geriatrics with cardiorespiratory and abdominal pathologies, only US revealed often neoplastic diseases, associated with chronic pathologies. The poor collaboration of the elderly, the contraindications for invasive investigations, the need to quickly make appropriate diagnoses and therapies therefore suggest that PoCUS is applicable in every emergency room and in every geriatric ward.

## N. 7

### ROLE OF ULTRASOUND EXAMINATION IN THE MULTIDIMENSIONAL ASSESSMENT OF THE ELDERLY

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**INTRODUCTION:** The aim of the study is to evaluate the role of the ultrasound examination in the multidimensional assessment of the elderly, using a multi-specialist team for a comprehensive (clinical, diagnostic, psychological, social, rehabilitative) approach to the geriatric patient with multiple pathologies.

**MATERIALS AND METHODS:** 1000 patients aged between 65 and 95 years (730 women and 370 men) were evaluated by a multi-specialist team consisting of a psychologist, geriatrician, psychiatrist, dietician, social worker. The patients were affected by multiple pathologies, with a prevalence of cardiological, pneumological, rheumatological, gastroenterological, neurological diseases. The ADL and IADL tests were used to evaluate the degree of autonomy, while the MMSE test was used for the evaluation of mental abilities. Brain CT scan, abdominal ultrasound, ECG, psychological evaluation were performed in all patients. Routine laboratory tests with tumor markers were prescribed in all patients, both those admitted to the geriatric ward, and those assisted at home with home hospitalization.

**RESULTS:** All patients included in the study showed signs of chronic cerebrovascular insufficiency on the brain CT scan. 260 patients were referred to the Alzheimer's evaluation unit. In 420 patients, the ultrasound examination revealed a liver disease (steatosis, chronic liver disease, cirrhosis, cholelithiasis, primary or secondary hepatic neoplasia). Abdominal effusion was found in 98 patients and later revealed to be related to neoplastic pathology. The ultrasound examination also highlighted 78 neoplastic pathologies of the pancreas, kidneys, prostate, gallbladder, ovaries, biliary tract, breast, thyroid gland, the existence of which was unknown.

**CONCLUSIONS:** The reduction in the degree of autonomy of the elderly and in particular of the patient with chronic cerebrovascular insufficiency, dementia or m. Alzheimer's disease, is often attributed only to neurological and/or osteoarticular pathologies. With a complete clinical, laboratory, multi-specialist evaluation, with non-invasive diagnostic investigations, including ultrasound, it is possible to highlight unrecognized pathologies, even serious ones, which greatly influence the degree of autonomy of the elderly, his mental abilities, his social life. In conclusion, it is desirable that in the team carrying out the global geriatric assessment there is always a specialist expert in ultrasound.

## N. 8

**SUBCUTANEOUS LYMPHOMA IN ELDERLY PATIENT: ROLE OF ULTRASOUND**

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**INTRODUCTION:** The aim of the work is to illustrate a rare case of alpha beta type T-cell subcutaneous lymphoma in which ultrasound has played an important role both at the onset of the disease, characterized by the appearance of the first erythematous and painful subcutaneous nodules, and during therapy and during monitoring after the completion of chemotherapy and during maintenance therapy, after achieving remission of the lymphoma.

**CLINICAL CASE:** A 66-year old man with mild Mediterranean anemia (Hb 10.5 g%), asthenia and recurrent mouth ulcers with leukopenia (GB 3000) and neutropenia (1500) was studied with ultrasonography in October 2018. Ultrasound showed mild splenomegaly (diam long cm 13), lymphadenomegaly slightly painful laterocervical, axillary, bilateral inguinal with reactive lymph nodes with a diameter of about 15 mm. The elderly patient referred frequent folliculitis on the back and neck in the last 2 years. In December 2018, the elderly patient was studied in Geriatrics for the appearance of painful subcutaneous erythematous nodules both in the upper limbs and in the lower limbs and in the back with a diameter of 10 to 25 mm and low-grade fever especially serotin was referred. Ultrasound showed multiple inflammatory, hyperechoic, inhomogeneous subcutaneous nodules confirmed by CT, MRI, PET CT. Biopsy of subcutaneous nodules documented the diagnosis of alpha beta-type subcutaneous simlipanniculitic-like T-cell lymphoma.

**RESULTS:** The bone marrow biopsy documented findings compatible with the lymphomatous pathology. 4 cycles of chemotherapy according to the CHEOP scheme were performed. The subcutaneous nodules regressed until they disappear after the completion of the first cycle and the fever disappeared. Ultrasound documented the disappearance of splenomegaly and lymphadenomegaly. Absent fever. Mild asthenia persisted. Present leukopenia (GB 2500) and neutropenia (900). The bone medullary biopsy did not show lymphomatous infiltration. The ultrasound monitoring performed every month confirmed the absence of pathological ultrasound signs both in the subcutaneous and in the liver, spleen and superficial and deep lymph nodes. PET CT confirmed the absence of pathological images. After one year, some small (8 mm) subcutaneous nodules appeared in the lower limbs. Ultrasound showed the presence of nodules with the same characteristics highlighted previously. Cyclosporine was prescribed. Ultrasound showed regression of subcutaneous nodules after one month of therapy and ultrasound was performed every three months to highlight any relapses. Currently the patient is asymptomatic, has no fever, there are no subcutaneous nodules. Controls with PET CT do not show pathological images. Mild anemia and leukopenia with neutropenia persist. The patient has never stopped taking cyclosporine and continues to take it currently at low doses. Relapses of mouth ulcers are less frequent. The patient is asymptomatic and afebrile.

**CONCLUSIONS:** The analysis of clinical and ultrasound data confirms that, even in the presence of very rare diseases in elderly patients, the diagnostic contribution of ultrasound can be relevant both in the initial approach to the patient and in subsequent monitoring, since it allows to obtain indispensable information for the specialist in order to correctly set the diagnostic and therapeutic process and plan the monitoring both during therapy and in the following years, after obtaining remission.

## N. 9

**THE ULTRASOUND OF THE ELDERLY PATIENT IN EMERGENCY AND URGENCY**

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**INTRODUCTION:** The aim of the study is to highlight the role of ultrasound in urgent clinical situations that may involve the patient over 75 years of age.

**MATERIALS AND METHODS:** 300 patients between the age of 75 and 95, 169 women and 131 men, were examined. All clinical cases that presented a diagnosis in the emergency room of abdominal pain, jaundice, increase in abdomen volume, chest pain, vomiting, digestive haemorrhage, haemoptoe, renal colic, hematuria were included in the evaluation.

**RESULTS:** The evaluation of the clinical cases considered allowed to select the following diseases diagnosed exclusively with an ultrasound examination performed in the first 60 minutes of observation in the geriatric department: 27 lithiasic cholecystitis, 24 obstructive jaundice, 6 dissecting aneurysms of the abdominal aorta, 12 renal colic with hydronephrosis, 15 acute pancreatitis, 9 bladder neoplasms, 9 renal neoplasms, 6 biliary tract neoplasms, 6 gallbladder neoplasms, 18 primary or secondary liver neoplasms, 24 liver cirrhosis, 30 pleural effusions, 20 pericardial effusions, 4 intestinal obstructions, 1 syndrome of Ogilvie, 1 GIST, 4 gastric neoplasms, 8 pancreatic neoplasms, 8 peritoneal carcinomatosis, 4 ovarian neoplasms, 1 iatrogenic pelvic hematoma, 2 iatrogenic retroperitoneal hematomas, 2 intestinal occlusions, 3 abdominal abscess collections.

**CONCLUSIONS:** The analysis of the results and the list of diseases highlighted in the elderly with acute symptoms, by carrying out only an ultrasound scan within 60 minutes of admission, confirm that only with expert sonographer in emergency room or in geriatric department it is possible to avoid for the elderly patient numerous laboratory and instrumental investigations and multiple specialist consultations, as is usually the case in emergency rooms without an adequate emergency ultrasound service. In the elderly patient suffering from multiple pathologies, most of which chronic, the symptoms are often unclear and the diagnosis of the prevalent and serious and potentially fatal pathology could be carried out with irreparable delay, not having an adequate emergency ultrasound service.

## N. 10

**TERIPARATIDE RETENTION RATE ASSESSMENT (TERRA) STUDY: COMPARISON BETWEEN ORIGINATOR TPH AND BIOSIMILAR TPH**

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Osteoporosis (OP) is a metabolic bone disease leading to high risk of fractures, especially of vertebrae and femur. In severe OP, anti-resorptive therapy may not be sufficient to prevent new fractures; therefore a bone forming therapeutic strategy is a cornerstone. At the moment in Europe, the only anabolic drug is Teriparatide (TPH), a PTH analogue. As far as we

know, there are no efficacy comparisons in clinical practice between originator TPH (oTPH) and biosimilar TPH (bsTPH). The aim of this study is to verify whether the retention rate of oTPH and bsTPH are similar. All patients with OP who received a TPH treatment between 1<sup>st</sup> January 2013 and 30<sup>th</sup> April 2021 were enrolled. For each of them were recorded anamnestic data, the number of major fractures (*i.e.* femoral and vertebral), lumbar and femoral DEXA scores, the duration of TPH treatment and the possible reason of TPH interruption. Patients were clustered in two groups, O and BS, according to the received treatment (respectively oTPH and bsTPH). The retention rate was tested with Kaplan-Meier estimator, while differences between groups were verified with Fisher's exact test or Mann-Whitney test, as appropriate.  $P < 0.05$  was considered statistically significant. Two-hundred sixty-two (262) patients (median age 76 IQR 71-81 years, M: F 23:239) were enrolled; 4125 patients-months were observed. The majority of them (184/262) received oTPH while the other (78/262) started bsTPH treatment. The median period of observation was 18 (IQR 6-18) months. The only differences between groups O and BS were female prevalence (162/184 vs 77/78;  $P=0.003$ ) and median number of fractures (2 vs 3;  $P=0.0007$ ). The overall retention rate at 12 months was 94%. In the group BS we observed a slight higher retention rate than in group O (97% vs 93%) but the difference was not statistically significant ( $P=0.15$ ). In both groups the main reason of discontinuation was fatigue and myalgia (prevalence of 4.3% vs 2.6% respectively in group O and BS  $P=0.7$ ). In this real-life cohort of severe OP patients, TPH 1 year retention rate was higher to those reported in trials and clinical studies. There were no differences in terms of retention rate between oTPH and bsTPH. The availability of bsTPH will make the cost - benefit ratio of this treatment even more advantageous by allowing more and more patients to access bone forming strategy.

## N. 11

### MORTALITY IN HOSPITALIZED PATIENTS WITH COVID-19: OUR ANALYSIS STUDY

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**INTRODUCTION:** Although the 2019 coronavirus disease (COVID-19) pandemic continues to rage around the world, the need for clinical studies continues to be high also to understand if any differences in mortality may depend on the care setting or other parameters not yet known. **Purpose:** The main aim of the study was to find the in-hospital mortality of patients admitted to COVID-19.

**MATERIALS AND METHODS:** Retrospective observational study with a database of 981 patients with COVID-19 who had attended AO Pugliese Ciaccio of Catanzaro and AO Annunziata of Cosenza between February 2020 and December 2020 were analyzed. Clinical variables and some laboratory parameters were studied.

**RESULTS:** We observed a mortality of 28.95%, the mean age of the patients was  $75.43 \pm 11.3$ , of which 59.48% were male, with a mean hospital stay of  $14.72 \pm 12.62$  days. Positive correlations were observed between mortality age ( $P=0.001$ ) and male sex ( $P=0.002$ ).

**CONCLUSIONS:** Mortality in patients with COVID-19 in our hospital population was higher in elderly and male patients. This study provides valuable information on the management of these patients in order to optimize resources in pandemic situations.

## N. 12

### RESIDENTIAL LONG TERM CARE FACILITIES: A REGIONAL ANALYSIS STUDY

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**INTRODUCTION:** The Residential long-term care facilities comprise establishments primarily engaged in providing residential long term care that combines nursing, supervisory or other type of care as require by the residents. In these establishments, a significant part of the production process and the care provided is a mix of health and social services. Public services are scarce throughout the national territory (with considerable differences between the Regions), with very low rates of coverage of the need. Non self-sufficient elderly people are people aged 65 or over, with functional limitations according to the definition proposed by the classification International classification of functioning, disability and health (ICF).

**PURPOSE:** The main objective of the study was to determine the real coverage of the residential care needs of non self-sufficient elderly people accredited by Nazional Health Service in the Calabria region.

**MATERIALS AND METHODS:** We have considered 3 types of residential offers, namely R1 (Residenze sanitarie Anziani Medicalizzate/ RSA M/ Healthcare Residences Medicalized), R2 (Residenze sanitarie Anziani /RSA/ Healthcare Residences) and R3 (Case Protette/CP/Senior Protected Homes). We defined the welfare needs and its characteristics with analysis of population data (ISTAT data as of 31/12/2019), carried out a regional survey of the number of structures with relative beds. Analyzed the data by province and by relative demographic distribution indices.

**RESULTS:** In the Calabria region, 66 Residential long-term care facilities with 1947 beds for elderly social and residential structures are active, equal to an overall potential coverage of 2.35% of the estimate of non self-sufficient elderly people. There is a strong interprovincial variability, varying the data from 5.25% of Catanzaro, to 4.35% of Crotona, to 1.59% of Reggio Calabria, to 1.32% of Vibo Valentia and finally to 1.25% of Cosenza. The offer is provided by private residential care facilities accredited by the National Health Service.

**CONCLUSIONS:** The issue of the aging of the population and the increasingly numerous, complex and articulated needs of which the elderly are an expression is one of the greatest challenges of the public health systems of the near future. Our work, through an extensive presentation of data, shows that the current public health and social welfare network is still too weak to be able to cope with the non self-sufficient population. Our trained team concluded that the inadequacy of the network dedicated to long term care would find effective help in the correct rebalancing and real integration between hospital and territorial care.

## N. 13

### THE POSSIBLE ROLE OF VITAMIN DEFICIENCY IN MULTIFACTORIAL ENCEPHALOPATHIES: A CASE OF DIFFICULT INTERPRETATION

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Encephalopathies are classified, depending on pathogenesis, in primary (neurodegenerative and vascular) and secondary (infectious, hypertensive, post-traumatic, endocrine-metabolic and nutri-



tional deficiencies). In clinical practice, this subdivision is not always well defined due to the coexistence of multiple causes, which contributes in determining polymorphic clinical and functional features. In the context of cerebral encephalopathies, an uncommon clinical feature is represented by Wernicke's encephalopathy which is characterized by lack of Thiamine (B1 vitamine), due to nutritional deficiencies of various origins (often present in alcoholic abuse). The clinical onset is associated with mental disorientation, ocular abnormalities (nystagmus, partial ophthalmoplegia) and ataxia, with gait disturbances and postural instability. MRI is currently considered the most valuable method to confirm the diagnosis and imaging typically shows bilaterally symmetrical lesions of the mammillary bodies. The case presented concerns an 81-year-old woman, suffering from arterial hypertension, hypovisus and depressive syndrome, who, in the last few months, presented progressive memory impairment, executive functioning alterations, gait disturbances, worsening of pre-existing behavioral disorders (mood deflection, hyporexia) and the appearance of prominent desceptive disorders (visual hallucinations and ideas of thievery). Therefore, brain CT scan (signs of chronic vascular distress) was performed, and the patient was evaluated by a geriatrician who diagnosed cognitive impairment associated with parkinsonism and behavioral disorders, for which therapy with quetiapine was initiated. Subsequently, the patient was admitted to the Emergency Department of Ferrara University Hospital because of psychomotor agitation and organic wasting. Test of renal function showed mild pre-renal insufficiency with significant hypernatremia (158 mmol/mol) which was gradually corrected with intravenous glucose solution. A new urgent brain CT did not showed acute events, thus an EEG revealed widespread slowdown, as possible expression of metabolic suffering. A MRI was therefore performed showing focal alterations of both mammillary bodies (areas of signal hyperintensity in T2-weighted sequences). Laboratory tests showed hypoproteinemia (6.2 g/dL with albumin equal to 54.9%, pre-albumin 13.2 mg/dL, transferrin 135 mg/dL) and vitamin deficiency (folic acid 1.7 ng/mL). The following days of hospitalization were characterized by worsening of alertness with associated pupillary miosis, areflexia and flaccidity of the four limbs. In consideration of the rapid changes in the state of alertness, ataxic type walking disorders, alterations of the mammillary bodies as radiological findings and data of initial caloric-protein malnutrition due to iporexia, after collegial discussion with a neurologist, enteral nutrition and vitamin supplementation with high-dose of IV thiamine and folic acid were initiated. Over the next two weeks a slow recovery of minimal environmental interaction was observed: the patient was able to follow the examiner with her eyes, emit sounds, perform simple orders, although presenting marked diffuse plastic hypertonus.

**CONCLUSIONS:** The case presented suggests that facing with clinical syndrome characterized by appearance of rapid consciousness alterations associated with cognitive deterioration and signs of concomitant undernutrition or malnutrition, it is necessary to consider the possible role of nutritional and vitamin deficiencies, including lack of thiamine.

#### N. 14

### ADHERENCE TO ANTI-FLU AND ANTI-PNEUMOCOCCUS VACCINATIONS DURING THE COVID-19 PANDEMIC IN COMMUNITY-DWELLING OLDER SUBJECTS: THE ROLE OF FRAILTY

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**INTRODUCTION:** Anti-flu and anti-pneumococcus vaccinations are highly recommended for older adults. Some data suggested that the vaccine coverage could reduce the risk of complications of the SARS-CoV-2 infection especially among frail older people. Aim of the present study was to describe the adherence of anti-flu and anti-pneumococcus vaccinations in a community-dwelling older people population who received a digital telemedicine intervention during the COVID-19 pandemic.

**METHODS:** Frailty condition was evaluated by means of the Multidimensional Prognostic Index (MPI) according to its self-administered version (Selfy-MPI) at the baseline (before the COVID-19 pandemic), and its telephone-administered version (TELE-MPI) at the follow-up visit after 12-months of COVID-19 pandemic. Both versions of the MPI included the assessment of 8 domains as follows: basic and instrumental activities of daily living, mobility, cognition, nutrition, comorbidity, number of drugs and co-habitation status. The vaccine coverage was assessed based on explicit criteria.

**RESULTS:** 217 older subjects (mean age 79. 44±7.75 years; female 50.2%) were included in the study. During pandemic period (year 2020) 158 out of 204 respondents (77. 5%) received the anti-flu vaccination; during the same period of time, only 65 out of 192 respondents (33.3%) had received the anti-pneumococcus vaccine. For both vaccines, vaccinated older subjects were significantly less frail than not-vaccinated subjects (Selfy-MPI mean score 0.24±0.15 in vaccinated *versus* 0.30±0.18 in not-vaccinated subjects, t-test P=0.024). In detail, only 17% of the frail subjects (Selfy-MPI class 3) received the anti-flu vaccine *versus* 82% of non-frail subjects (Selfy-MPI class 1) (chi-squared test P=0.016). Regarding the anti-pneumococcus vaccine, only 22% of frail subjects (Selfy-MPI class 3) were vaccinated compared to 42% of non-frail subjects (Selfy-MPI class 1) (chi-squared test, P=0.005).

**CONCLUSIONS:** Despite the strong recommendations during the COVID-19 pandemic to increase vaccination coverage against influenza and pneumococcus pneumonia, older frail people showed a significantly lower rates of adherence to these vaccinations than older non-frail subjects. Anti-flu and anti-pneumococcus vaccination campaigns are needed to improve the adherence to these vaccinations, particularly in older frail people.

#### N. 15

### DEVELOPMENT AND VALIDATION OF A HOSPITAL DISCHARGE MODEL USING INNOVATIVE TECHNOLOGIES FOR MULTI-MORBID AND POLY-TREATED OLDER INDIVIDUALS: THE PRO-HOME PROJECT

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**INTRODUCTION:** Hospital discharge planning of frail older patients is an important step to avoid inappropriate long-stay hospitalizations and to prevent iatrogenic risks related to the hospitalization. In the frame of the Italian Ministry of Health co-funded net-project MULTIPLAT-AGE, we developed a 'multi-component' model of interventions for multi-morbid and poly-treated older patients to ensuring recovery of health status, reducing disability, and improving quality of life (PRO-HOME). The main aim of the PRO-HOME study is to develop a protected discharge model including an area with advanced architectural and technological tools (such as domotics, robotics, and telecare devices), in order to reduce the hospital stay of subjects aged 65 years and older admitted to the hospital for an acute event deemed stable and dischargeable. Secondary objectives are the evaluation of short- and long-term effects of the PRO-HOME area in terms of acceptability and quality of life; effectiveness of functional and cognitive status technological monitoring; the number of adverse events *i.e.* falls, re-hospitalizations, institutionalizations, and mortality.

**METHODS:** Subjects enrolled in the study will be randomized into two groups: the control group will receive the standard care and the treatment group will be admitted to the PRO-HOME area. The PRO-HOME area includes i) architectural design solutions aimed at recreating a home-like environment; ii) fixed and wearable sensors integrated into an automated monitoring system for the detection of vital parameters, motor activity, and functional characteristics; iii) telepresence/tele-assistance devices; iv) robotic rehabilitation to reduce the risk of sarcopenia and falls. All participants will undergo a Comprehensive Geriatric Assessment (CGA) including evaluation of multidimensional frailty (through the Multidimensional Prognostic Index-MPI), motor performances, depressive symptoms and quality of life. A three months follow-up telemedicine visit is scheduled to evaluate the risk of frailty through the telephone version of the MPI (TELE-MPI) and the Quality of Life (SF-12). **EXPECTED RESULTS.** 60 patients (30 controls and 30 treatment arm) will be consecutively enrolled among hospitalized elderly patients at the Geriatrics Units. Moreover, expected results will include an improvement of the quality of life, an increase in motor and cognitive performance, and a decrease in the length of hospital stay in older subjects admitted to the PRO-HOME program compared to the control group.

**CONCLUSIONS:** The development and validation of the PRO-HOME, *i.e.* a hospital discharge model using innovative technologies for multi-morbid and poly-treated older individuals, could be useful to improve health conditions after hospital discharge and reduce the impact of inappropriate length of stay in the hospital in older geriatric patients.

## N. 16

### COVID-19 AND HEART RHYTHM DISTURBANCES

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COVID-19 infection can induce myocardial damage and heart failure that can be complicated by arrhythmias, often severe. Patients with SARS-CoV-2 infection may have arrhythmias due

to a variety of mechanisms, which are mutually interrelated and inter-facilitated. Palpitations were reported as a major symptom related to SARS-Cov-2 infection in patients without fever or cough. Sinus tachycardia, is the most frequently encountered COVID-19 associated arrhythmia. Prolonged QTc intervals have also been reported. In a study involving 187 patients hospitalized with COVID-19 in Wuhan, malignant arrhythmias such as ventricular tachycardia and fibrillation were more frequent among patients with elevated levels than those with normal levels of troponin T (12% *versus* 5%), a possible marker of acute myocardial damage. There was also case of high-grade atrioventricular block, AF onset and polymorphic ventricular tachycardia. Although no direct evidence for cardiac arrest is present as a complication of COVID-19, in-hospital and out-of-hospital sudden cardiac arrests have also been reported in patients affected by this disease. In an Italian analysis of 431 consecutive COVID-19 patients, hospitalized who died or were treated with invasive mechanical ventilation, ECG was abnormal in 93% of the patients; atrial fibrillation/flutter was detected in 22% of the patients. The causes of arrhythmias could be represented by metabolic disarray, hypoxia-induced apoptosis, or neurohormonal or inflammatory stress in the setting of viral infection in patients with or without prior CVD; the state of high-grade systemic inflammation, from the cytokine storm related to it and from the induction of inflammatory cardiac channelopathies. Furthermore, patients with inherited arrhythmogenic cardiomyopathies, (short QT and long QT syndrome, Brugada syndrome, and catecholaminergic polymorphism), are believed to be more susceptible to pro-arrhythmic effects of SARS-CoV-2 such as stress, fever, use of antiviral drugs and electrolyte disturbance. Furthermore, episodes of diarrhea, the use of diuretic, the progressive deterioration of renal function and the consequent electrolytic imbalance, in patients with severe COVID-19, can contribute to the onset and complexity of the arrhythmic pattern. In addition to serial monitoring of blood-based biomarkers, the use of a standard 12-lead electrocardiogram remains a critical tool for the management of myocardial infarction, arrhythmias, and to minimizing overall heart complications secondary to severe COVID-19.

## N. 17

### NEURO-COGNITIVE DISORDERS AND DELIRIUM IN PATIENTS DISCHARGED FROM INTENSIVE CARE

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Critical illness and intensive care unit (ICU) care affect a wide range of long-term outcomes for patients. ICU patients are at increased risk of developing delirium and associated neurocognitive disorders. Several pathogenetic mechanisms have been evoked to provide an explanation: from biochemical disturbances linked to stress and inflammation, to drugs. Although several authors found a greater likelihood of developing neuropsychiatric disorders especially in patients whose disorders were pre-existing, even patients without such conditions, after admission to intensive care, were found to be at high risk of developing new neuropsychiatric and neurocognitive disorders. Negative memories, such as persistent nightmares associated with ICU admission, have been shown to predict worsening quality of life and risk factors for the development of neuro-psychiatric sequelae. Additional risk factors for developing neuropsychiatric disorders after ICU depend on age, gender, nature of ICU therapies, length

of stay and diagnosis of sepsis. Understanding patient risk factors and ICUs can help identify patients who are most at risk for these complications. The implementation of delirium screening tools during the ICU stay may be successful in preventing delirium and mitigating its adverse effects especially in the elderly with multiple morbidity and polypharmacy.

## N. 18

### PREDICTORS OF MORTALITY IN A COHORT OF ELDERLY PATIENTS WITH COVID-19

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**INTRODUCTION:** SARS-CoV-2, a  $\beta$ -coronavirus, is a highly contagious respiratory pathogen that causes a disease that has been termed the 2019 coronavirus disease (COVID-19). Clinical experience thus far indicates that COVID-19 is highly heterogeneous, ranging from being asymptomatic and mild to severe and causing death. Mortality is prevalent in elderly population probably due to host factors including age and comorbidities.

**OBJECTIVES:** The objective of our study is to investigate clinical and biochemical parameters associated with mortality in a cohort of elderly patients with COVID-19.

**MATERIALS AND METHODS:** In the period between March and May 2020, 222 patients with a mean age of  $78.93 \pm 17.35$  years (44.1% male) were consecutively admitted at the Covid Units of Medicine and Geriatric Departments of the Pescara Hospital. Demographics and anthropometrics parameters (age, gender, weight and height), comorbid conditions (cardiovascular risk factors, cardiovascular and respiratory diseases, dementia, cancer, chronic renal insufficiency), home drug therapy (with particular attention for antihypertensive, diabetes medications and anticoagulant/antiplatelet drugs) and specific treatment for COVID-19 (kaletra, steroids, hydroxychloroquine, remdesivir and tocilizumab), the severity of COVID-19 measured with NEWS-score, and biochemical parameters (renal function, coagulation, inflammation indices) were evaluated.

**RESULTS:** A retrospective observational study was conducted. The univariate analysis showed a significant association between mortality and age ( $P < 0.006$ ), presence of cancer ( $P = 0.005$ ) and severity of COVID-19 ( $P = 0.001$ ). Moreover mortality was found to be positively associated with height and creatinine, d-dimer and C-reactive protein values ( $P = 0.009$ ,  $P = 0.04$ ,  $P = 0.04$  and  $P = 0.03$  respectively). The administration of tocilizumab instead seems to have a protective effect in terms of mortality ( $P = 0.014$ ). Stepwise multiple regression analysis confirmed the association between mortality and age ( $P < 0.0001$ ), presence of cancer ( $P < 0.01$ ) and severity of COVID-19 ( $P < 0.0001$ ) even after adjusting for all other possible confounders, including demographic characteristics, clinical and laboratory data, vascular risk factors and treatments. Interestingly drug therapy with ACE-I/ARB ( $P < 0.02$ ) and Warfarin ( $P < 0.002$ ) were independent predictors of mortality. The use of tocilizumab showed a significative protective effect in terms of death ( $P < 0.01$ ).

**CONCLUSIONS AND RELEVANCE:** Advanced age, severity of COVID-19, the presence of cancer, the use of Warfarin and ACE-I/ARB, as probable indicators of cardiovascular pathologies, are independently associated with mortality in patients with SARS-CoV-2 infections, whereas the administration of tocilizumab results in a protective effect. These results suggested

tailoring interventions at the admission of COVID-19 patients based on age, comorbidities and pharmacological strategies in the order to mitigate the negative impact of the COVID-19 on mortality especially in elderly patients.

## N. 19

### CASE REPORT: PNEUMOTORAX AND PNEUMOMEDIASTINUM AS UNCOMMON COMPLICATIONS OF COVID-19 PNEUMONIA

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**INTRODUCTION:** Spontaneous pneumomediastinum (SPM) and pneumothorax (PNX) unrelated to positive pressure ventilation has been recently reported as an unusual complication in cases of severe COVID-19 pneumonia.

**MATERIALS AND METHODS:** We present two patients with COVID-19 pneumonia complicated by SPM and PNX. The first patient was a frailty 91-year-old woman affected by dementia (CRD 3), hypertension and hypothyroidism. Her clinical course was complicated by SPM and PNX on day 7 post admission managed conservatively because of age and COVID-19 severity (NEWS=6), and, unfortunately, she died after 2 days. The second patient was a robust 86-year-old man affected by dementia (CDR 1), hypertension and prostatic hypertrophy. He had small PNX and SPM and he was managed conservatively. He had spontaneous resolution and was discharged 20 days later. None of our patients required invasive or non-invasive ventilation.

**RESULTS:** Interestingly the Chest CT was performed with contrast in the initial clinical suspicion of pulmonary embolism. In fact both patients presented, as onset symptoms of PNX and SPM, desaturation with tachypnea, chest pain and exponential increase of d-dimer values. Moreover, the hemogasanalysis showed hypoxemic respiratory insufficiency.

**CONCLUSIONS:** SPM and PNX are extremely rare in COVID-19. The presumed pathophysiological mechanism is diffuse alveolar injury leading to alveolar rupture and air leak. SPM and PNX could mimic pulmonary embolism in COVID-19 pneumonia and they should be taken into account in the differential diagnosis. SPM and PNX may be related to death when they are found, and the patient should be carefully monitored to prevent respiratory deterioration.

## N. 20

### NEUROLOGICAL FEATURES OF COVID-19 INFECTION: A CASE SERIES OF GERIATRIC PATIENTS

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**INTRODUCTION:** The COVID-19 pandemic, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is of a scale not seen since the 1918-influenza pandemic. Although the predominant clinical presentation is with respiratory disease, neurological manifestations are being recognised increasingly. On the basis of knowledge of other coronaviruses, especially those that caused the severe acute respiratory syndrome and Middle East respiratory syndrome epidemics, cases of



central nervous system disease caused by SARS-CoV-2 might be expected to be rare.

**MATERIALS AND METHODS:** We described a case series of elderly frail patients whom presented with non-specific and atypical symptoms: hypoactive delirium, hyperactive delirium, syncope and transient neurological deficit.

**RESULTS:** Our case series demonstrated how recognition of neurological disease associated with SARS-CoV-2 in patients whose respiratory infection is mild or asymptomatic might prove challenging, especially if the primary COVID-19 illness occurred days earlier. The mechanism of cerebrovascular manifestation in COVID-19 patients is complex and likely multifactorial.

**CONCLUSIONS:** Further studies with larger sample size are necessary before drawing definite conclusions on the exact mechanisms linking neurological findings with COVID-19 infection. Careful clinical, diagnostic, and epidemiological studies are needed to help define the manifestations and burden of neurological disease caused by SARS-CoV-2.

## N. 21

### PREVENTION OF RISK OF SARCOPENIA IN POST COVID-19 ELDERLY PATIENTS

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**OBJECTIVES:** The study evaluates the effects of combined drug treatment, nutritional supplementation and occupational therapy in the treatment of both physical decline and risk for sarcopenia in post COVID-19 elderly subjects.

**METHODS:** 12 post COVID-19 elderly people (M 5, F 8, mean age 80+4) hosted in an Extended Care Unit were included in the study. The design of the study included tests performed before and after follow-up such as: i) Mental State Examination (MMSE); ii) Geriatric Depression Scale (GDS); iii) Activities of Daily Living (ADL); iv) Instrumental Activities of Daily Living (IADL); v) Short Physical Performance Battery (SPPB); vi) Mini Nutritional Assessment (MNA). The subjects of the study showed: i) Mean MMSE score was 21.7±3.4; ii) Mean GDS score was 12±1.7. In the group 3 subjects showed an ADL score <3,6 had IADL <4. All subjects were specifically evaluated for comorbidities. Through SPPB evaluation we detected physical ability with a mean score of 6.2 showing fragility and risk of disability. Nutritional evaluation was assessed through MNA. Mean score was 19±2.0 which indicated malnutrition. The dedicated nursing focused on personal care (hygiene and clothing): mild help needed, assistance in every phase of the activity; self-assurance (physical and/or psychological) and risk of fall due to low vision and walking difficulty; movement (deambulation and transfer), self-sufficient transfers and supervised walking outside one's room. A 6-day-per-week programme combining nutritional integration and occupational therapy was introduced in order to strengthen physical ability and lessen the risk of sarcopenia.

**RESULTS:** Before and after a 6-month follow-up we detected: i) GDS score 12±1.7 vs score 7±1.5 (P<0.01); ii) ADL 3.2 score vs 4.5 score (P<0.01); iii) IADL 4.2 score vs 5.8 score (P<0.01); iv) SPPB score 6.2 vs score 9.7 (P<0.01); v) MNA score 19.2 vs score 25.4 (P<0.01).

**CONCLUSIONS:** The combination of drug treatment, nutritional integration and occupational therapy in post COVID-19 patients showed an improved physical ability related to a better nutritional status. We've also connected the increased physical ability to the risk reduction of sarcopenia. Malnutrition and sarcopenia are usually frequent and easily found in elderly people. Sarcopenia is also the most relevant complication due to malnutrition in older age.

## N. 22

### ASSOCIATION BETWEEN ULTRASOUND MEASUREMENT OF MUSCLE THICKNESS, PENNATION ANGLE, DIAPHRAGM MUSCLE AND VITAMIN D IN THE COVID-19 GUARD

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**INTRODUCTION:** Sarcopenia is characterised by significantly reduced skeletal muscle mass, muscle strength and functional physical performance, vitamin D deficit and increased inflammation. Studies report that until the age of 80 healthy people lose about 30–40% of their skeletal muscle mass and acute or chronic illness could even increase this dramatic muscle loss (low muscle strength is predictive for immobilisation, physical disability and increased mortality. Studies on COVID patients with pneumonia have developed sarcopenia and have vitamin D deficit. A meta-analysis conducted by Beaudart *et al.* showed that vitamin D supplementation is most effective for increasing muscle strength in people who have 25(OH) D levels <30 nmol/L (approximately 12 ng/mL) and who are 65 years of age or older, which suggests that the effect of vitamin D on sarcopenia may be affected by the baseline vitamin D level and by age-related factors. Resistance exercise has been widely accepted to prevent and reverse sarcopenia. However, resistance exercise is less efficient in older adults than in young adults. Regression analysis was used to evaluate which M-US parameter showed the best correlation to vitamin D and inflammation.

**MATERIALS AND METHODS, STUDY DESIGN:** Exclusion criteria were neuromuscular diseases, prosthesis or fractures of the lower extremities, injuries of joints or ligaments of the lower extremities, acute or chronic pain of the lower extremities, cognitive impairments, malign diseases or pregnancy. Baseline variables including age, weight, height, physical. Body weight and height were measured during the first examination and expressed as kilogrammes and metres, respectively. Body mass index (BMI) was calculated as follows: BMI=weight/height<sup>2</sup>. Physical activity and autonomy was evaluated using ADL, IADL. Assessment of morphological parameters with M-US Patients lay supine with knees resting comfortably in extension near the natural resting position of 10-20°. Two-dimensional B-mode ultrasound imaging with 7.5-12.5 MHz linear array transducer was used and images of musculus rectus femoris, musculus intermedius, musculus vastus lateralis and musculus vastus medialis were taken separately with the probe oriented in the transverse and the longitudinal plane perpendicular to the skin. Maximal muscle thickness was measured in transversal images as the distance between the superficial and the deep fascia at the widest distance. The pennation angle was defined as the angle between muscle fibres and the deep fascia of the muscle. Pennation angles were therefore measured in the longitudinal ultrasound image for three fibres and the average of these three measurements was used for further analysis. As the orientation of the fibres of the rectus femoris was almost parallel to their fascia, no pennation angle was determined for this muscle of the musculus quadriceps. Statistical analysis The M-US parameters muscle thicknesses and echogenicity of musculus rectus femoris, musculus intermedius, musculus vastus lateralis and musculus vastus medialis as well as pennation angles of musculus intermedius, musculus vastus lateralis and musculus vastus medialis were investigated. For comparison of M-US measurements between young and old patients, mean values over all eight measurements per patient were calculated. The resulting averaged variables were described by mean±standard deviation and t test was performed to investigate differences between the two groups. To analyse the relationship between the averaged M-US parameters

(mean over eight measurements per patient) and the vitamin D and flogosi index, first Pearson correlation coefficients were calculated separately for the young and the old groups.

**RESULTS:** The young group had a mean age of 24.2±3.7 years whereas the old group had a mean age of 79.8±4.8 years. The vitamin D had the largest decrease in muscle thickness of vastus medialis ( $P<0.05$ ); no correlation with decrease of diaphragm thickness DTF in both sides were different between young patients and elderly (right DTF) (Diaphragmatic thickening fraction) young group 67.7±21.2%, elderly group 32.9±9.2%, ( $P>0.05$ ); left DTF: young group 68.8±31.2%, elderly group 42.8±18.5%, ( $P>0.05$ ). There was a fair correlation between Vitamin D and right DTF ( $r=0.391$ ,  $P=0.022$ ). No other parameters displayed statistically significant differences between the young and elderly groups. **Conclusions** Skeletal muscle wasting in the critically ill has significant functional implications for patients who survive, and the development of prophylactic or therapeutic interventions has been troubled by our lack of understanding of the pathophysiology driving the process of muscle wasting. Muscle ultrasound might help to identify those patients at highest risk of prolonged complications, which result from excess muscle catabolism. Despite this intriguing potential, the interpretation of the available studies is difficult because of significant methodological defects, inadequate sample sizes, and lack of standardization of the ultrasound methodology. Uusi-Rasi *et al.* study of 70 to 80-year-old women found that exercise by itself can improve lower limb muscle strength and body function but that vitamin D does not enhance the impact of exercise on physical function. A study conducted by Bunout *et al.* in older adults showed that vitamin D supplementation improves gait speed and TUG performance and that improves muscle strength (including quadriceps strength and hand-grip strength), while vitamin D supplementation has no significant effect on muscle strength. Nevertheless, further studies are certainly needed to describe the detailed time course of ultrasonic muscle changes and the progression of spontaneous activity, particularly in relation to the functional clinical outcome.

## N. 23

### DANZARTE - A SYSTEM TO SUPPORT COGNITIVE AND PHYSICAL ACTIVITY OF OLDER PEOPLE, INTEGRATING ACTIVE EXPERIENCE OF VISUAL ARTS AND MOVEMENT SONIFICATION

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**INTRODUCTION:** The objective of the DanzArTe project is to develop and scientifically validate a protocol and an interactive technology platform for the cognitive and physical treatment of frailty in older people based on cultural content. DanzArTe supports an embodied experience based on the interactive, real-time

digital manipulation of paintings and movement sonification. The affective movement and gesture evoked in selected classical religious paintings are the aesthetically resonant stimuli for a multimodal interactive social fruition of cultural content supporting cognitive and physical reactivation.

**METHODS:** This transdisciplinary research program consists of the following components: i) clinical: measures of full-body movement qualities as frailty indicators; ii) movement science and affective computing: computational models of full-body individual movement expressive qualities and joint actions; iii) technological: multimodal technology platform for the support of the real-time manipulation of visual and sonic content by full-body movement; iv) performative: developing choreographic practices capable of interpreting the relationship between the movement quality and the affective content of the gesture evoked in the painting; v) museal: designing dynamic models of the museum experience as an active, affective, and bodily fruition inside and outside the museum exhibition spaces, with particular attention to the possibilities of inclusion of frailty-risk people. The workplan consists of 3 phases: i) definition of the protocol in its transdisciplinary components, and implementation of the interactive technology platform; ii) implementation of a case-control clinical trial in two settings: Nursing Homes (NH) and the community; iii) dissemination in NHs and in centers of aggregation for the older people.

**RESULTS:** i) A novel protocol integrating health and culture for a global improvement in the motor and cognitive performance in the NH residents and community-dwelling older subjects; ii) Design and develop a multimodal technology platform supporting the protocol; iii) Validation on a population of residents in a number of NHs in the Liguria and Piedmont regions; iv) Increase of the active participation to cultural activities of older people.

**CONCLUSIONS:** The DanzArTe project is a novel culture-driven transdisciplinary program to enhance the comprehensive physical, cognitive and neuro-sensorial skills of older people living in NH and the community.

## N. 24

### PALLIATIVE PROGNOSTIC INDEX AS A PROGNOSTIC PREDICTOR OF SHORT-TERM SURVIVAL IN A COHORT OF HOSPITALIZED ELDERLY PATIENTS

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**OBJECTIVES:** The Palliative Prognostic Index (PPI) is a multidimensional assessment scale used to predict life expectancy in patients candidate for palliative care. Until now, its application has mostly been limited to patients suffering from oncological diseases, however the panorama of palliative care has expanded, also including other forms of end-stage disease. The aim of our study was to test PPI as an independent prognostic predictor of survival in elderly patients with multiple comorbidities, hospitalized in acute geriatric ward.

**METHODS:** A retrospective study was conducted by reviewing records of all the 201 patients admitted to the two Geriatric Units of the University Hospital of Verona during October 2019. Personal and anamnestic data were collected from each patient and the multidimensional assessment scales administered at admission in the hospital were retrieved. The PPI was then calculated. Based on the score obtained, we estimated predicted survival (less than 3 weeks, between 3 and 6 weeks, more than 6 weeks). Twenty patients died during hospitalization, the actual survival of the patients was then verified by telephone call 12 weeks after hospital discharge.

**RESULTS:** At 12 weeks follow-up 53 out of 201 patients were dead (26%). The PPI showed a high specificity (92-95%) and a



high negative predictive power (95-96%). The high sensitivity of the test was also confirmed for survival at both 3 and 6 weeks in patients suffering from oncological diseases (98-100% respectively). The ROC curves demonstrated a high accuracy of the test in the prediction of survival both at 3 and 6 weeks: AUC respectively 0.94 and 0.87,  $P < 0.001$ . Logistic regression analysis demonstrated that the actual survival of patients correlates with the PPI ( $P < 0.0001$ ) in each patient subgroup. Furthermore, for patients alive at 12 weeks, there was also a positive correlation with the serum albumin values and a negative correlation with the Charlson Comorbidity Index.

**CONCLUSIONS:** In the cohort of patients enrolled in this study (elderly with multi-morbidities), the use of the PPI made it possible to identify patients with a more unfavorable prognosis and for whom a palliative approach might be appropriate for clinical and management strategy.

## N. 25

### **MOTOR AND COGNITIVE TELE REHABILITATION: EFFECTIVE SUPPORT FOR ELDERLY VULNERABLE TO EPIDEMICS**

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**BACKGROUND:** COVID-19 emergency led to new limitations that significantly changed habits of the community. Therefore Rehabilitation assistance has to adapt to this scenario: telerehabilitation is a cutting-edge means of administering motor and cognitive therapy, able to guarantee remote continuity of care. It plays an important role for elderly people who need continuous care. New COVID-19 can't interrupt care of elder if they are limited in moving to reach treatment centres. The effectiveness of telerehabilitation is already supported by several studies carried out over the years. Elderly (>65 years old) are subject to an increasingly frequent risk of falling: it is one of the leading causes of hospitalization. About 28-35% of people aged 65 and over fall every year; this percentage reaches up to 42% in the over-seventies. The frequency of falls increases with aging and the resulting fragility. In those at high risk of falling, such as the elderly, we speak of "predictable falls": physical exercise is the most effective method to prevent falls, as it allows to improve their mobility and functionality according to parameters such as strength and balance.

## N. 26

### **PREDICTION OF THE NEXT WAVE OF ELDERLY NEEDS IN THE GERIATRIC PUBLIC HEALTH SERVICE: PRELIMINARY SUGGESTION FROM OLDER ADULTS OUTPATIENTS ADMITTED TO GERIATRIC CONSULTATION AFTER COVID-19 PANDEMIC AND LOCKDOWN**

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The COVID pandemic has affected people's lives and mental health devastatingly. The Center for Disease Control and Prevention stated that US participants aged  $\geq 65$  were more resilient to the COVID-19 pandemic, showing lower percentages of anxiety disorders, depressive disorders, or trauma-related disorders than younger age groups. In Italy, thanks to the advance in geroscience and social promotion, our senior citizens were able to live their life as "new millennials" before the pandemic crisis. Although not affected by COVID-19 pneumonia directly, older adults show mental health consequences. To the best of our knowledge, no one compared how the request for geriatric consultations is changing

after the first lockdown. This study analyses how the COVID pandemic affected the quality of life and mood disorders in senior citizens who lived a satisfying life before the lockdown.

**METHODS:** From September 2020 to April 2021, 71 consecutive patients looking for an ambulatory geriatric consultation at the Geriatric room Service of the AUSL-IRCCS of Reggio Emilia were enrolled. Criteria of exclusions: i) people with a previous diagnosis of dementia, because it is far beyond the goal of our service; ii) with a severe pre-COVID physical dependence (ADL: 0; IADL:0), iii) institutionalized, people with previous geriatric consultations, COVID-19 free-status. After history and physical examination, we consulted datawarehouse to detect routinely biochemical values (to check for thyroid alterations, vitamin deficiencies and anemia). Demographic baseline characteristics were synthetically reported: age, sex, marital status, education, comorbidity and polytherapy. Every patient received a comprehensive geriatric assessment. We explored the psychological distress by a simple semi-structured questionnaire ["Crucial question": "do you believe that you should need a geriatric consultation in the absence of COVID-19 pandemic? Y/N.; how much this situation impacted your quality of life (Scala Likert 0-10)].

**RESULTS:** Data from 24 patients were suitable for this study. Categorical variables are expressed in % while continuous variable as a mean (65% female 35% men; mean age  $78.1 \pm 2.1$  SD, education 8 ys  $\pm 1.6$  SD, 40% widowers 70% married MMSE  $25.7 \pm 0.4$ , GDS-5:  $2.8 \pm 0.3$ ). These patients, before the pandemic showed a social and cultural active life and a full participation in family life. This group of patients was all autonomous in the basic and advanced daily life activity, received only help in the strenuous housework or significant expenses. The prevalent comorbidities were hypertension, IPB in the male subgroup, and dyslipidemia in the female. There was not a previous diagnosis of mood alteration. 98% replied "NO" to the crucial question, and in their opinion, COVID-19 impacted very much on their quality of life: mean  $8.7 \pm 1.2$  SD. The principal items merged from the qualitative analyses were fear and anxiety exacerbated by the media social bombing and boredom due to their routine loss.

**CONCLUSIONS:** Despite previous findings suggesting a more resilient status of older adults than younger, our studies showed the threat of a new wave of geriatric needs. A more structured survey needs to be performed, but this initial picture serves to think about how re-start in safety for the social inclusion of these subjects. Policies to counteract the new wave of geriatric needs have to be addressed urgently by psychological interventions, educational investments in psychogeriatric science, and social programs. As mood disorders in the elderly can devastatingly modify their life trajectories, the Italian Society of Geriatrics – Hospital Territory have the moral mission to work straightly with public and private stakeholders.

## N. 27

### **CORTICAL BASAL SYNDROME IN PATIENT WITH CLINICAL TAUPATHY-LIKE PHENOTYPE AND $\alpha$ -SYNUCLEIN AGGREGATES. EVIDENCE FROM THE TREDEM REGISTRY**

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**BACKGROUND AND AIMS:** An 82-year-old male right-

handed retired teacher reported in 2019, that three years earlier he developed difficulties in moving his left arm and foot, tremor in left-hand and gestures of the left upper limb that appeared to be independent of the patient's will, characteristics of alien limb phenomenon. We present a patient with cortical basal syndrome (CBS) and Mild Cognitive Impairment (MCI) who showed the presence of  $\alpha$ -synuclein aggregates in the CSF and in the olfactory mucosa samples.

**METHODS:** A clinical, neuropsychological, imaging and biomarker evaluation, including tau and amyloid proteins levels in the CSF and RT-QuIC assay for  $\alpha$ -synuclein both in the CSF and olfactory mucosa was conducted.

**RESULTS:** At neurological examination the patient, on the left side, presented with resting tremor, mild extrapyramidal hypertonus, mild bradykinesia and severe apraxia on the left upper limb. Brain MRI showed a knife-edge posterior parietal cortical atrophy prevalent on the right hemisphere. 18F-FDG PET imaging showed hypometabolism of the right lateral parietal, temporal cortex, precuneus and posterior cingulate cortex. The DaTscan showed a mild thinning of the posterior portion of the right putamen. MRI scan, 18F-FDG PET and DaTscan imaging repeated one year later were unchanged. Neuropsychological tests, performed annually for three consecutive years, showed memory and visual-perceptual deficits. CSF tau and amyloid measurements did not show clearly pathological values (Tau protein=395 pg/mL;  $A\beta_{1-42}/p\text{Tau}181$  ratio=6.8; pathological values were assumed for total tau >350 pg/mL and  $A\beta_{1-42}/p\text{Tau}181$  ratio <7) while RT-QuIC for  $\alpha$ -synuclein in CSF and olfactory mucosa samples were positive.

**CONCLUSIONS:** Although in our patient the clinical diagnosis was of probable CBS, usually expression of tauopathies, unexpectedly RT-QuIC detected  $\alpha$ -synuclein aggregates showing a probable  $\alpha$ -synuclein pathology. RT-QuIC provides a better definition of underlying pathologies in neurodegenerative disorders with prognostic and potentially therapeutic implications and offers a re-appreciation of CBS as expression of different underlying pathologies, including synucleinopathy.

## N. 28

### PROGNOSTIC VALUE OF THYROID FUNCTION IN SARS-COV-2 INFECTION

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**INTRODUCTION:** The thyroid gland and the entire hypothalamic-pituitary-thyroid (HPT) axis are emerging as relevant targets of damage by SARS-CoV-2. Specifically, COVID-19-related thyroid disorders could biochemically manifest as thyrotoxicosis, hypothyroidism, as well as nonthyroidal illness syndrome [1]. The link between thyroid hormones and immune system along with the direct cytotoxic effect of the virus is proposed to play a role in these abnormalities [2]. Aim of our study was to investigate a possible prognostic role of thyroid dysfunction in COVID-19.

**MATERIALS AND METHODS:** From October 2020 to May 2021, 520 patients with confirmed COVID-19 were collected from Division of Internal Medicine in Coniugi Bernardini's Hospital. At the admission, all patients underwent a complete physical examination, anthropometric evaluation, arterial blood gas test, electrocardiogram (ECG), Thorax CT and blood sample for complete blood count, markers of renal and hepatic function, C reactive Protein, Procalcitonin, TSH, FT3, FT4. Primary endpoints were prevalence of Non Invasive Ventilation (NIV)-Continuous positive airway pressure (CPAP), mortality and

length of stay (LOS) in hospital in the two groups (Abnormal thyroid Function and Control group).

**RESULTS:** About 21% of patients (104; mean age 69.3±5.7) showed an abnormal thyroid function, with reduction of TSH (0.31±0.05) and elevated FT4 (1.37±0.25). No significant differences were found in age, sex, serum level of thyroglobulin and thyroperoxidase antibodies. Prevalence of NIV-CPAP (P value 0.045) and LOS (25.7±2.6 vs 17. 1±3.1; P value 0.04) were higher in the Abnormal Thyroid Group. No differences were found in mortality in the two groups.

**CONCLUSIONS:** Abnormal thyroid function is a common feature of endocrinological involvement of COVID-19 and seems to be associated to longer stay in hospital and major severity of disease.

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## N. 29

### THE IMPORTANCE OF FRAILTY IDENTIFICATION BEYOND CHRONOLOGICAL AGE IN ONCOLOGICAL SURGICAL SETTING

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**INTRODUCTION:** It is well recognized that as people age, surgery and anesthesia can cause greater stress in their bodies' functions, the recovery may take longer and the complication rate may be higher, representing an important challenge in this field. Deciding if a patient is too old for surgery is still problematic, and increasing age itself may represent an important risk factor for operative and postoperative morbidity and mortality. With this study we aimed to analyze how frailty influences the postoperative course of patients undergoing elective and emergency general abdominal surgery.

**METHODS:** We enrolled adult and older persons that underwent elective or emergency abdominal surgery belonging to the general surgery department of the University of Siena. The following scales were used for the multidimensional assessment: CFS (Clinical Frailty Scale), CIRS (Cumulative Illness Rating Scale) EUROQoL 5-D. ADL (Activities of Daily Living), IADL (Instrumental Activities of Daily Living), ESS (Exton-Smith Scale), GDS (Geriatric Depression Scale), MMSE (Mini Mental State Evaluation), SPMSQ (Short Portable Mental Status Questionnaire according to Pfeiffer), MNA (Mini Nutritional Assessment), MPI (Multidimensional Prognostic Index), P POS-SUM SCORE (Portsmouth Physiological and Operative Severity Score. Fried's criteria were used to define frailty. A follow-up at 30 days after discharge has been performed.

**RESULTS:** 69 patients were enrolled in the study (69. 5% underwent elective surgery and 30.4% under emergency treatment). The average age was 67. 2±15.9 years (43.5% <65 years and 56.5% >65 years). The prevalence of frailty in all sample was 27. 5%. In the fragile subgroup the mean age was 79. 32±11.72 years while in the non-fragile was 62.58±14.92 years. In the fragile subgroup the post-operative complication rate was 94.3% as well as 97. 3% at 30 days. A logistic regression analysis showed that independent of age the presence of frailty is a risk factor for adverse events in an abdominal surgical setting (P=0.05).



**N. 30****PAIN OF THE LOWER LIMBS IN THE ELDERLY PATIENT: ROLE OF CT ANGIOGRAPHY**Matteo Marcucci<sup>1</sup><sup>1</sup>*AOU Ospedali Riuniti di Ancona, Università Politecnica delle Marche, Ancona, Italy*

**INTRODUCTION:** The aim of this work is to demonstrate the role of CT angiography in the correct diagnostic workup in a 74-year-old patient with chronic pain in the lower limbs.

**MATERIALS AND METHODS:** A 74-year-old man was admitted to the emergency room with severe pain at rest which had not been controlled by analgesics for a week. He had type II diabetes mellitus and for a couple of months he had complained of fatigue and cramps in the calves after 200-300 meters of walking and heaviness in the legs. The patient was immediately subjected to echocolor Doppler examination and subsequently to CT angiography of the lower limbs.

**RESULTS:** Doppler ultrasound examination raised the suspicion of arterial vascular occlusion due to chronic obliterative arteriopathy. The diagnosis was confirmed by the CT angiographic study which demonstrated arterial occlusion of the distal arterial segments of the leg bilaterally.

**DISCUSSION AND CONCLUSIONS:** The Doppler ultrasound is a fast and non-invasive investigation used for the morphological study of segments of the arteries of the lower limb [1]. However, the examination may be limited by numerous factors such as obesity and calcifications. The more distal arterial vessels are small and deep and are often difficult to explore, as they cannot be adequately characterized. In our experience, a clinical decision based on clinical data and ultrasound description alone does not allow for an accurate diagnosis. At the level of the lower limbs, ultrasound Doppler alone does not lead to a correct therapeutic planning in all patients and must often be integrated with other imaging methods that allow a panoramic view of the vascular axis and provide an analysis of the collateral circulation. in its entirety. Angio-CT is a widely available, fast, non-invasive and optimal diagnostic method for diagnosing peripheral arterial disease and for planning the diagnostic-therapeutic process [2]. It shows a sensitivity and specificity close to 100% in the identification of arterial stenosis [3].

**CONCLUSIONS:** Angio-CT is a non-invasive diagnostic method, widely available and optimal for the study of suspected proximal lesions in patients with peripheral arterial diseases. It also allows the correct programming of the diagnostic process given its wide panoramic view.

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**N. 31****PNEUMOTHORAX IN THE ELDERLY PATIENT WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD): ROLE OF ULTRASOUND IN AN URGENT-EMERGENCY STATE**Matteo Marcucci<sup>1</sup><sup>1</sup>*AOU Ospedali Riuniti di Ancona, Università Politecnica delle Marche, Ancona, Italy*

**INTRODUCTION:** The purpose of this work is to demonstrate the role of ultrasound in the correct diagnosis of pneumothorax (PNX) in a 68-year-old patient with chronic obstructive pulmonary disease (COPD).

**MATERIALS AND METHODS:** A 68-year-old man with COPD was admitted to the emergency room with sudden onset of acute chest pain and shortness of breath. He had a history of moderate to severe COPD on long-acting bronchodilator therapy. The patient immediately underwent supine chest radiography, chest ultrasound, and chest CT.

**RESULTS:** Chest X-ray was negative for suspected PNX. The ultrasound examination of the chest performed in the patient's bed in the emergency room identified the absence of the lung sliding sign in the right lung and the presence of the lung point sign, attributable to the presence of PNX. Diagnosis was confirmed by chest CT study which demonstrated right anteromedial apical pulmonary PNX that was occult on supine chest x-ray.

**DISCUSSION:** In the supine patient, a chest X-ray may not show a PNX due to accumulation of air in the anteromedial and subpulmonary recesses. This highlights the importance of the radiograph being interpreted by a qualified radiologist to avoid losing an existing PNX. Although pulmonary CT is currently the gold standard diagnostic imaging for pneumothorax, it has some disadvantages, including the need to mobilize the unstable patient and the risk of ionizing radiation. Pulmonary ultrasound has recently emerged as a new and sensitive technique in the evaluation of pneumothorax with a high diagnostic sensitivity of around 100% [1]. It can be easily and quickly performed at the bedside with the ability to quickly perform chest tube placement. The lung sliding sign, allows exclusion of PNX with a negative predictive value of 100%. However, absence of the lung sliding sign does not necessarily confirm PNX, on the contrary the presence of the lung point sign is a highly specific ultrasound sign of pneumothorax [2].

**CONCLUSIONS:** Pulmonary ultrasound is recently recognized as a fast and feasible method for a diagnosis of pneumothorax. The operator should know how to interpret sonographic thoracic signs, in order to introduce bedside lung ultrasound into clinical practice.

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**N. 32****RENAL COLIC IN THE ELDERLY PATIENT: ROLE OF ULTRASOUND IN THE INITIAL EVALUATION**Matteo Marcucci<sup>1</sup><sup>1</sup>*AOU Ospedali Riuniti di Ancona, Università Politecnica delle Marche, Ancona, Italy*

**INTRODUCTION:** The purpose of this work is to demonstrate the diagnostic accuracy of ultrasound as a preliminary assessment in the presence of suspected clinical data for renal colic.

**MATERIALS AND METHODS:** 100 patients with suspected renal colic were prospectively included in the study. In the subjects included in the study, a preliminary assessment was performed with abdominal ultrasound performed with a low frequency probe (3.5 MHz). Subsequently, all patients underwent abdominal CT examination without contrast medium, considered as a reference method in the identification of urinary stones. The diagnostic accuracy of the ultrasound was compared with the panoramic CT method.

**RESULTS:** Chest ultrasound correctly diagnosed the presence

of renal colic in 62 patients by displaying the presence of calcified stones (>1cm) or hydronephrosis. The degree of hydronephrosis was III-IV in 76% of cases. In 33 subjects, the ultrasound did not detect stones or urinary obstruction. The negative ultrasound diagnosis for renal colic was confirmed by the CT scan. In the remaining 5 patients the symptoms were not related to renal colic and they had an alternative diagnosis.

**DISCUSSION:** Renal and urinary tract ultrasound is a simple and non-invasive way that allows us to evaluate the structure of the kidneys and to exclude the presence of some pathologies [1]. There are no contraindications to performing an ultrasound examination or the need for special preparations other than the intake of water before the examination if you also want to see the bladder. In case of renal colic, ultrasound allows to highlight the presence of any stones located in the kidney calyces or the presence of signs of kidney suffering (hydronephrosis) due to obstacle to urinary outflow by incarcerated stones, a condition that requires prompt intervention doctor [2].

**CONCLUSIONS:** The use of ultrasound is desirable in the initial evaluation of renal colic, as it is a useful method in detecting kidney stone or hydronephrosis with accuracy similar to CT but with lower costs and ionizing risks.

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#### N. 33

### ACUTE AORTIC DISSECTION: IMPORTANCE OF TIMELY DIAGNOSIS

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**INTRODUCTION:** The purpose of this work is to demonstrate the diagnostic accuracy of CT with contrast medium as a timely evaluation in acute aortic syndromes.

**MATERIALS AND METHODS:** The study retrospectively included 30 patients with acute aortic dissection presented to the emergency department. In the subjects included in the study, a preliminary evaluation was performed with chest X-ray performed with the patient supine in the emergency room. Subsequently, all patients underwent chest CT examination with contrast media for the correct diagnosis of aortic dissection and to initiate the appropriate therapeutic procedure. Results: Chest radiography diagnosed nonspecific findings such as mediastinal enlargement and prociidence of the aortic profile in all study subjects. Subsequently, the diagnosis of aortic dissection was provided by CT examination. In 60% of patients the dissection was type A, while in the remaining 40% of patients it was type B. All patients with type A dissection were referred for cardiac evaluation for urgent surgery.

**DISCUSSION:** Dissections located upstream of the left subclavian (Stanford type A) are rapidly fatal, particularly in the event of aortic valve disconnection, hemopericardium or coronary dissection [1]. Chest X-ray is not sufficient for the diagnosis of aortic dissection. In case of strong clinical suspicion it may be useless to waste time in requesting it. Presentations without chest pain (abdominal pain, fever, decompensation) cause delay in diagnosis. On the contrary, symptoms such as hypotension, cardiac tamponade, ischemia in the lower limbs and consciousness

or neurological deficits accelerate the diagnosis [2]. The diagnosis of aortic syndrome requires a high degree of clinical suspicion that leads the doctor to perform advanced imaging (CT angiography), after a preliminary careful assessment of the presence of risk factors (anamnesic, symptomatological and objective).

**CONCLUSIONS:** Mortality from acute aortic syndromes is time dependent. The timeliness of diagnosis allows a reduction in overall mortality. In case of strong clinical suspicion it is necessary to urgently request CT angiography for diagnosis and timely emergency surgery.

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#### N. 34

### BEYOND COVID-19 PANDEMIC: THE ITALIAN RECOVERY PLAN FROM A GERIATRIC PERSPECTIVE

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**INTRODUCTION:** The European Union (EU) has designed a program to overcome the COVID-19 pandemic crisis called “Next Generation EU” (NGEU). With unprecedented scope and ambition, it includes investments and reforms to accelerate the ecological and digital transition, improve workers training, and achieve gender, territorial and intergenerational equity [1]. Italy has joined NGEU with its Recovery Plan (“Piano Nazionale di Ripresa e Resilienza”, PNRR), which consists of six Missions [2]. The sixth is entitled “Healthcare”. Mission 6: Healthcare The Mission is focused on two “components”: i) Proximity Assistance and Telemedicine (M6C1) and ii) Healthcare Innovation, Research and Digitisation (M6C2). With an investment of 7MLD €, the aim of M6C1 is the enforcement of local healthcare services with special concern to the needs of people and communities. The main purposes are to overcome the fragmentation among regional health services and to ensure the Essential Levels of Assistance nationwide. To these aims, three sectors of investments are expected: i) Home of the Community and taking care of people, ii) Home as the first place of care, Home care assistance, iii) Development of intermediate care. From a geriatric perspective, these investments assume undoubtedly a great relevance. COVID-19 pandemic has taught the peculiarity of chronic, multi-pathological older patients and their need of global assessment and assistance [3]. The role of regional and local healthcare services has been widely discussed in the last months [4] and a renovation is crucial to guarantee social equity in the accessibility to health services, according to the promotion of Universal Health Coverage by World Health Organization [5]. Moreover, the implementation of Home care and Intermediate care facilities responds to the request for forms of innovative assistance and care for the elderly patient. In this context, the role of telemedicine appears as a natural consequence of the evolution of technology in medical services.

**MONITORING THE MISSION:** The success of the Mission may not only be assessed through the actual use of resources and their effectiveness, but also by the analysis of health and social



outcomes both at national and territorial level. In this sense, it would be useful to identify well-being indicators from national and international frameworks such as the Italian “Benessere Equo e Sostenibile” (BES) [6] or United Nations’ “Sustainable Development Goals” (SDGs) [7]. Similarly, at local level, a proper set of key performance indicators (KPIs), which can be directly connected to the improvement of national outcomes (BES or SDGs), should be defined. An operative example regarding Home care assistance is depicted in Figure 1.

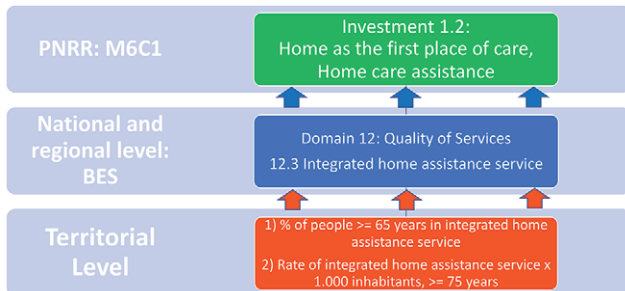


Figure 1. An example of the suggested integrated PNRR (*Piano Nazionale di Ripresa e Resilienza*) monitoring. The focus is on home assistance services for geriatric patients.

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#### N. 35

### OXCARBAZEPINE-INDUCED DIZZINESS AND HYPONATREMIA: A CASE REPORT

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**BACKGROUND:** Dizziness is a geriatric syndrome related to a sensation of instability which is not included in a defined clinical condition (vertigo, pre-syncope or postural instability). It occurs in more than 50% of people over 85 years old and it is characterized by multifactorial etiology, including iatrogenic factors.

**METHODS:** We describe the case of a 79-year-old Caucasian woman admitted to our Geriatric Unit because of confusion, nausea, vomiting and intense objective vertigo. She referred a recent accidental fall without concussion and positive history for epilepsy, high blood pressure, diabetes mellitus of type II, COPD and dyslipidemia; she was already taking more than ten medications a day including Oxcarbazepine 600 mg twice daily since a long time.

**RESULTS:** On admission, laboratory tests showed hypona-

tremia (sodium level=127 mEq/L). Head CT and EEG did not show any alterations. We also excluded orthostatic hypotension and steno-obstructive disease of the supra-aortic vessels. Neurological examination tested negative for motor and sensitive disorders. Brain MRI demonstrated the presence of small multiple areas of gliosis in temporal and frontoparietal cortex. Despite the intravenous therapy with sodium chloride, hyponatremia and symptoms persisted. As high serum level of Oxcarbazepine was found, drug dosage was reduced and this caused normalization of sodium levels and complete regression of symptoms.

**CONCLUSIONS:** Dizziness is one of the precipitating causes of falls in elderly population and represents a relevant risk factor for disability, hospitalization, institutionalization and mortality. Oxcarbazepine overdose should be considered a possible cause of severe dizziness and hyponatremia responsible for invalidating symptoms simulating vestibular or neurological disorders.

#### N. 36

### THE PROGNOSTIC IMPORTANCE OF FRAILTY, COMORBIDITIES AND DISABILITY IN LONG-TERM REHABILITATION GERIATRIC UNIT IN PATIENTS WITH COVID-19: OUR EXPERIENCE

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**BACKGROUND:** We have a lot of literature about acute patients with COVID-19, much less about oldest patients with COVID-19 in long-term care. Our interest was to investigate some prognostic factors in this population.

**METHODS:** Observational study of older patients admitted to our department after a period in the acute care ward due to SARS-CoV-2 infection. 484 COVID-19 patients aged  $\geq 65$  years were recruited between march 2020 and march 2021 in long-term rehabilitation geriatric unit of the AUSL Ferrara, Italy. Frailty were assessed using the Clinical Frailty Scale (CFS), disability using ADL (Katz) and IADL (Lawton) and the burden of comorbidities with Charlson index. We considered those who died and those who were discharged alive and we analysed factors correlated with higher mortality using binary logistic regression, ANOVA and Kaplan-Meier curves. Furthermore, we looked for connection between frailty and age.

**RESULTS:** Our study sample included 484 patients with mean age 80, 66% female. 123 (25, 5%) died. Mortality was strongly associated with frailty (44% in survived vs 96% in others,  $P < 0.001$ ), disability (34% in survived vs 79% in others,  $P < 0.001$ ), female sex (58% in survived vs 87% in others,  $P = 0.008$ ), presence of CVC/PICC (17% in survived vs 96% in others,  $P = 0.01$ ), the presence of urinary cat. (64% in survived vs 91% in others,  $P = 0.01$ ) TNF positive at dimission (14% in survived vs 58% in others,  $P < 0.001$ ) and neurocognitive disorders (44% in survived vs 79% in others,  $P = 0.003$ ). KM curves confirmed higher mortality with frailty, disability and burden of comorbidities (log rank  $P = 0.01$ ). Interestingly we found association between mortality and residential setting (F 6, 53  $P > 0.001$ ) but not with length of in hospital stay (F 1.99  $P = 0.075$ ). We also noticed no correlation between age and frailty ( $r = 0.09$   $P = 0.51$ ). Comparing data pre-COVID in the same long-term care department, mortality rate rises up to 60% despite previously period.

**CONCLUSIONS:** Frailty, disability and burden of comorbidities are the main factors linked with mortality in elderly patients hospitalized for SARS-CoV-2 infection in long-term rehabilita-

tion geriatric unit. Age is not a risk factor. Considering and preventing these aspects are the key for a correct management of our patients, specially in post acute COVID Syndrome.

### N. 37

#### THE ORTHOGERIATRIC PATIENT BLOOD MANAGEMENT IMPROVES CLINICAL OUTCOMES: PRELIMINARY RESULTS FROM A CLINICAL OBSERVATIONAL STUDY

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**PURPOSE:** Anemia is a common condition among orthogeriatric patients leading to RBC transfusions and poor outcomes. Compared to usual care (UC), we evaluated the impact of a patient blood management (PBM) on the transfusion rate, haemoglobin (Hb) levels at discharge and 1-month follow-up and their correlation with functional outcomes among orthogeriatric patients.

**MATERIALS AND METHODS:** Prospective observational clinical study with historical controls conducted in a high volume trauma center. Orthogeriatric patients are those hospitalized because of hip fracture aged  $\geq 65$  years. The PBM group includes patients who received ferric carboxymaltose (FCM) in combination with folic acid and vitamin B12. The UC group includes patients who had not undergone treatment with any component of the triple therapy, or possibly taking one or two of them in combination. Main outcomes are Hb levels at discharges and at 1-month follow-up visit, RBC units transfused over the hospital stay, and length of hospital stay. Both groups received orthogeriatric comanagement during the hospital stay, then orthopaedic and geriatric assessment at 1-month follow-up from surgery.

**RESULTS:** Overall, 419 patients were included: 215 in the PBM group and 204 in the UC group. Groups were homogeneous with regard of age (85 vs 84,  $P=0.855$ ), pre-fracture comorbidities, and polypharmacy, in both groups women were predominant (156 vs 158,  $P=0.248$ ). The majority of fractures were trochanteric and femoral neck types. Compared to patients belonging to UC group, those in the PBM group had higher Hb levels both at discharge ( $P=0.0329$ ) and at 1-month follow-up visit ( $P=0.0009$ ), and tended to use lower RBC units during hospital stay. PBM group experiences similar length of hospital stay as compared with UC group. Hb levels were positively associated with pre-fracture functional state ( $P=0.014$ ); a tendency was confirmed between higher Hb levels and functional recovery at 1 month-follow-up ( $P=0.065$ ).

**CONCLUSIONS:** The PBM in the orthogeriatric setting may improve patients' clinical outcomes after hospital stay and until 1 month from surgery by possibly reducing the healthcare burden.

### N. 38

#### SARS-COV-2 INFECTION: A CASE OF LATE RESPIRATORY SYNDROME

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**INTRODUCTION:** The incubation period for SARS-CoV-2 is generally within 14 days following exposure, with most cases

occurring approximately four to five days after exposure (interquartile range two to seven days) [1,2]. We report a clinical case of late development of severe respiratory syndrome.

**CASE:** P.C., an independent 82 years old man. In anamnesis: severe cognitive impairment with behavioral and psychological symptoms, severe hearing loss. On March 3, 2021, he went to the hospital for a fall on the floor, with unspecified dynamic, with secondary head trauma; no fever or other associated organ symptoms. The brain CT documented subarachnoid hemorrhage. Among other findings, the chest X-ray showed diffuse interstitial disease, the laboratory tests were negative for pathological elements, the oropharyngeal swab for SARS-CoV-2 was negative. As chest radiology was high suggestive for COVID-19 infection, on March 5 the oropharyngeal swab was repeated and it was positive. During the first three weeks of hospitalization, he was only subjected to investigations regarding subarachnoid hemorrhage, and did not have any COVID-19-related organ symptoms. On March 17<sup>th</sup> and 19<sup>th</sup>, as he would have had to be discharged to another hospital, two oropharyngeal swabs were performed for SARS-CoV-2, both of which were negative. Starting from March 27<sup>th</sup> (22<sup>nd</sup> day from the first positive swab), he had fever and respiratory failure, progressively worsening, treated with oxygen therapy. On March 29<sup>th</sup>, another oropharyngeal swab was performed, which was positive. Considering the severity of the respiratory failure, tocilizumab was used. In addition, chest CT was performed, showing severe bilateral alveolar-interstitial pneumonia. In the suspicion of reinfection by a genetic variant, viral replication of the swab was occurred, and it was so low to exclude the hypothesis of reinfection. In the following days of hospitalization, there was a rapid worsening of respiratory failure and he died on April 2<sup>th</sup>.

**DISCUSSION:** In this clinical case, the respiratory symptoms manifested very late respect to the incubation period reported in the literature [1]; the first hypothesis was that of a reinfection, as in the literature the cases of severe respiratory syndrome are due to a high viral load, therefore to an acute infection in progress [3].

**CONCLUSIONS:** We recognize the limitations of this single clinical case and that further studies are needed, to better define the real incidence of respiratory symptoms, sometimes even severe, after more than 21 days after the first positive oropharyngeal swab.

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### N. 39

#### CLINICAL EFFICACY OF COGNITIVE STIMULATION IN AGED SUBJECTS WITH MILD AND MODERATE COGNITIVE IMPAIRMENT

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**INTRODUCTION:** Rehabilitative treatments, based on cognitive stimulation (CS), have been recently proposed as useful approaches to improve or stabilize cognitive functions in patients with mild or moderate cognitive impairment. Unfortunately the generalization of clinical results to activities of daily living isn't proven yet and frequently most of patients living at home don't receive adequate rehabilitation thus leading to functional deterioration. To face these difficulties telerehabilitation could supply

homebound subjects with treatments, without displacement of therapist or patient. Therefore the aim of this study is to verify if, in chronic post-stroke patients with mild to moderate cognitive impairment, CS delivered from a distance by a telerehabilitation system, may improve cognitive performances and/or activities of daily living.

**AIMS:** After a treatment with CS delivered from a distance by a telerehabilitation system to chronic post-stroke patients with mild to moderate cognitive impairment, we expect an improvement or stabilization of performances on cognitive tasks and on activities of daily living.

**MATERIALS AND METHODS:** Pilot study on post-stroke patients. A population of consecutive outpatients were enrolled for examination at the Neurorehabilitation Unit of Institute Sant'Anna of Crotona (ISA), were evaluated for enrolment, according to the following criteria. Inclusion: previous stroke more than 8 months before the evaluation, in the territories of middle or anterior cerebral artery; presence of mild motor impairment and persistence of cognitive deficits still requiring rehabilitation; mild or moderate cognitive impairment (Mini Mental State examination between 24 and 18). Exclusion: presence of other non vascular brain lesions, ascertained with brain imaging studies; neurodegenerative diseases; depression history preceding the stroke; severe systemic diseases; severe behavioural symptoms; communications deficits that may interfere with the rehabilitation. The enrolled patients were randomized in two groups, according to a pc-generated random assignment. The telerehabilitation group (TRG) has received a session of specific CS treatment delivered at home, from a distance by a Telerehabilitation system. The control group (CG) has received the usual outpatients care. Before (T1) and after (T2) treatment, a trained researcher will blindly has administered the clinical evaluations.

**PRELIMINARY RESULTS:** The mean MMSE score improved significantly after CS treatments, delivered from a distance by a telerehabilitation system.

## N. 40

### THE ROLE OF PROGNOSTIC STRATIFICATION ON THE ATTITUDE TO PRESCRIBE ANTICOAGULANTS IN OLDER PATIENTS WITH ATRIAL FIBRILLATION: A MULTICENTER, OBSERVATIONAL, PROSPECTIVE EUROPEAN STUDY (EUROSAF)

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**BACKGROUND:** Literature suggested that different risks of mortality may influence the attitude of physicians in prescribing anticoagulants in older patients affected by atrial fibrillation (AF). The Multidimensional Prognostic Index (MPI) can give reliable information regarding risk of mortality, but its role in AF is still poorly explored. The aim of this cross-sectional study was to evaluate whether a different attitude in prescribing oral anticoagulants exists, based on MPI values. Methods: Older hospitalized patients (age>65 years) with non-valvular AF were included across 22 European centers. MPI was calculated using validated and standardized tools derived from comprehensive geriatric assessment. Other functional and clinical information were collected to calculate indexes specific for AF.

**RESULTS:** Altogether, 2.021 participants affected by AF (mean age was 83.2±7.5, range: 65-104) years, with a higher

presence of women (=57.0%), were included. Overall, 440 took vitamin K antagonists VKAs (=22.0%), 667 (=33.4%) novel oral anticoagulants (NOACs), whilst 44.6% did not take any anticoagulant treatment. People in VKAs or NOACs did not differ in terms of age, compared to no anticoagulant treatment. The propensity of physicians for prescribing anticoagulants was significantly influenced by MPI, since people taking anticoagulants had lower MPI values (0.46±0.20 in NOACs and 0.48±0.21 in VKAs vs 0.54±0.20 in no treatment; P<0.0001 for both comparisons). Anticoagulant therapy was not prescribed in 53.1% of frailer people (MPI-3 group) compared to 32.3% of people with lower mortality risk (MPI-1 group). Finally, the attitude of physicians in prescribing anticoagulants was determined by HAS-BLED, but not CHA2DS2-VASC values.

**CONCLUSIONS:** These findings from the EUROpean study of Older Subjects with Atrial Fibrillation (EUROSAF) suggest that older people with AF are under-treated with anticoagulants; moreover the prognostic stratification, as assessed by the MPI, is an important determinant in driving the attitude of anticoagulant prescription in this population.

## N. 41

### MULTIPLAT AGE: A MULTICOMPONENT INTERVENTION PLATFORM FOR MANAGING COMMUNITY DWELLING OLDER SUBJECTS WITH MULTIMORBIDITY AND POLYPHARMACY

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**INTRODUCTION:** Multi-morbid and poly-treated older subjects represent an heterogeneous population at high risk for negative health outcomes; new technologies, including ICT, domotic and telerehabilitation technologies, may provide a useful component in the prevention and treatment of this population. AIM: The Network Program MULTIPLAT AGE is a co-funded projects by the Italian Ministry of Health that aims at developing and implementing an ICT multicomponent intervention platform of common strategies to improve the management of community-dwelling older people with multimorbidity and polypharmacy.

**METHODS:** The MULTIPLAT AGE Net-work Project is based on five work-packages, developing innovative researches, in five different hospital units in four Italian regions: i) at the Galliera Hospital (Genova) a pilot study is ongoing for testing a home-care protected area able to host subjects and their caregivers after discharge from the hospital. Wearable and non-invasive devices are experimented to monitor vital parameters and motor performances, with automatic and real-time analyses of the functional and clinical parameters; ii) the Federico II University (Napoli) implemented an ICT-based home-care program, through



a web-based platform, able to deliver care pathways to patients directly at their home, with the double objective to identify the determinants of hard events in high risk multimorbid patients and to research how ICT tools (smartphones, tablets) may support caregivers to assist patients and improve their adherence to therapy; iii) at the Maggiore della Carità Hospital (Novara), a study on appropriate pharmacological treatments in primary-care and in the Emergency Department of the Hospital (with special focus on anticoagulant therapy in older people) is ongoing; the project includes pharmaco-epidemiological data, an outcome research and active pharmacovigilance for clinical governance; iv) the San Martino Hospital (Genova) is carried a study on technology rehabilitation efficacy, based on action observation (AO) and exergame-based training, to influence motor ability both in older healthy subjects and neurological patients; v) at the Sant'Anna Hospital and the University "Magna Graecia" (Crotona-Catanzaro) a pilot study is ongoing on the use of cognitive stimulation in a telerehabilitation setting for Parkinson and post-stroke patients with mild cognitive impairments.

**EXPECTED RESULTS AND CONCLUSIONS:** Good clinical practices developed and validated in the five different studies are included in the comprehensive ICT platform, able to guarantee a tailored approach to the heterogeneous needs of the multimorbid older patients. The final expected result of the MULTIPLAT\_AGE project is to improve the overall level of independence of older adults living in the community. Specific outcomes include: i) the improvement of tailored solutions of care management and ii) the improvement in functional and mobility parameters as well as in cognitive functions of the study populations.

#### N. 42

### **MAPPING MULTIDIMENSIONAL FRAILITY IN COMMUNITY-DWELLING PEOPLE OVER 80 YEARS VACCINATED AGAINST COVID-19: FOCUS ON FUNCTIONAL AND CLINICAL DIFFERENCES BETWEEN WOMEN AND MEN**

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**INTRODUCTION:** The start of the COVID-19 vaccination campaigns has required identifying priority groups in order to protect the most vulnerable first. In Italy the Health Ministry has released a list of priority groups in which the top priority are people over 80 years old. Aging and frailty are two conditions that can exacerbate the negative effects of the COVID-19 infection, for this reason is very important mapping the elderly population that was involved in the vaccination program promoted by the Italian National Health System.

**AIMS:** The aim of this study was to describe the multidimensional frailty condition of community-dwelling older people vaccinated against COVID-19 in an Italian Hospital.

**METHODS:** The Self-Administered version of the Multidimensional Prognostic Index Short-Form (SELFY-MPI-SF) was the tool used to assess the multidimensional frailty condition by exploring eight domains: mobility, basal and instrumental activities of daily living (Barthel mobility, ADL, IADL), cognition (Test Your Memory – TYM Test), nutrition (Mini Nutritional Assessment-Short Form – MNA-SF), comorbidity,

number of drugs and co-habitation. **RESULTS.** 790 elderly people vaccinated at our hospital's Vax-center agreed to fill in the SELFY-MPI-SF (mean age 84.95±4.2 years; women 58.9%); valid questionnaires were 682 (86, 3%). 497 subjects (72, 9%) were at low risk of frailty (SELFY-MPI class 1), 173 subjects (25, 4%) were in the intermediate risk category (SELFY-MPI class 2), and 12 subjects (1.8%) were assessed as frail subjects (SELFY-MPI class 3). The SELFY-MPI score was significantly correlated with the age of participants (Pearson's coefficient: 0.22, P<0.001). Women were significantly older (85.4±4.4 vs 84.4±3.9, P=0.025) and frailer than men (SELFY-MPI 0.29±0.16 vs 0.24±0.15, P=0.005); moreover women showed a significant higher impairment in mobility (Barthel-MOB, 3.9±7.8 vs 1.7±5.5, P=0.002) and malnutrition (MNA 11.9±2.1 vs 12.9±1.5, P<0.001) than men.

**CONCLUSIONS:** Functional and clinical differences have been observed between women and men aged 80 years and older who underwent the anti-COVID-19 vaccination. These findings suggest that health strategies to prevent frailty and promote active and healthy aging need sex-targeted and personalized interventions that take into account gender characteristics of the older population.

#### N. 43

### **ONE-YEAR MORTALITY AFTER HIP FRACTURE SURGERY IN ELDERLY PATIENTS: PRELIMINARY ANALYSIS**

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**INTRODUCTION:** Hip fracture is a significant cause of mortality worldwide for elderly people [1,2], with a one-year mortality of 23, 6% in Italy in 2018 [3]. Orthogeriatrics is the discipline dedicated to older patients with fragility fractures, especially those with hip fractures. It showed significant advantages in terms of outcomes on fractured elderly patients and on health organizations [4-6]. Identifying and quantifying the impact of pre-operative and intra-operative predictors of mortality allow clinicians to better recognize those patients with a high risk of mortality after a surgical hip fracture, who may most benefit from comprehensive assessment and appropriate management consequent to the peri-operative time. Therefore, the aim of this study was to identify independent risk factors for one-year mortality in a population of elderly hospitalized for proximal hip fracture.

**MATERIALS AND METHODS:** We recruited 746 patients diagnosed with hip fracture who were admitted to the Orthopaedic Ward of Maggiore Hospital in Bologna from January to December 2018. Among them, 734 (97%) underwent surgical treatment. One-year mortality was considered as the outcome variable, while six individual patients' features (age, gender, hemoglobine, comorbidities, cognitive and functional status) were used as predictors. A Shapiro-Wilk test was conducted to check for normality. Mean and standard deviation were used for normally distributed variables, while median and interquartile range (IQR) for non-normally distributed ones. A logistic regression was performed to identify the main determinants of one-year mortality.

**RESULTS:** Mean age was 85.7 years (SD=7.01), 570 (76.4%) were females. Median of pathologies per patient was 5 (IQR=3). 372 (49.8%) patients presented cognitive impairment. 410 (55.7%) were autonomous in almost all activities of daily living (ADL 4-6), while 314 (42.6%) were totally or partially dependent (ADL 0-3). 19 patients (2.5%) died during the stay. One-year mortality accounted for 183 patients (24.5%). Multivariate logis-

tic regression showed that one-year mortality was statistically significantly associated with age ( $P=0.051$ ), male gender ( $P<0.001$ ), comorbidities ( $P=0.001$ ), and disability (ADL dependency) ( $P<0.001$ ). In particular, each additional ADL point decreased one-year mortality by 20%, while the probability of death increased by 13% for each additional comorbidity. Probability of death within a year was nearly triple for males. Hemoglobine (Hb) also showed a weak protective effect ( $P=0.086$ ).

**CONCLUSIONS:** Our analysis confirmed that one-year mortality in older patients with hip fracture is associated with age, male gender, functional dependence and the coexistence of multiple pathologies. Due to their complexity, these patients require greater assistance and clinical monitoring. Further research is needed to explore practical solutions for their management.

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#### N. 44

### CLINICAL AND PROGNOSTIC FEATURES OF ANEMIA IN A HOSPITALIZED ELDERLY POPULATION

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**INTRODUCTION:** Anemia in the elderly is associated with an increased risk of falls, dementia, morbidity, functional impairment, prolonged hospitalization, re-hospitalization and mortality.

**MATERIALS AND METHODS:** Our aim was to evaluate these characteristics in a sample of 652 patients (432 with anemia and 139 without) aged  $\geq 80$  years. Features included: demographic, clinical, pharmacological, laboratory and Multidimensional Geriatric Assessment data. Anemics were divided into subgroups: severe ( $Hb \leq 7.9$  g/dL-41), moderate ( $Hb$  9.9-8 g/dL-97) and mild anemia ( $Hb > 10$  g/dL-294 subjects).

**RESULTS:** Anemics had a higher number of comorbidities and 60% of them took more than 5 drugs/day ( $P$ -value=0.031). No statistical differences between groups were found in the use of PPI, DOAC and antiplatelet agents, but PPI were under prescribed at home in subjects with moderate and severe anemia ( $P$ -value=0.030). The mean score of Mini Nutritional Assessment (MNA) and ADL (Activities of Daily Living), was lower in anemics ( $P$ -value 0.004 and 0.045). The diagnosis of severe or moderate dementia (MMSE  $< 19$  or SPMSQ  $> 4$ ) was similar. Mild anemia was often not described at discharge (81.6%). Anemia of unknown cause accounted for 35% of all causes, followed by vitamin B12 deficiency (16%), chronic renal failure (16%), chronic inflammation (16%) and iron deficiency (10%). Fortyfour percent of the subjects with severe anemia had two or more causes. There was no difference between the two groups in re-hospitalization and survival at 24 months.

**CONCLUSIONS:** In our hospitalized elderly patients, multiple cause anemia and idiopathic anemia make up the majority of all forms.

#### N. 45

### ALZHEIMER CENTERS OF THE MUNICIPALITY OF ROME DURING COVID-19: EXPERIENCE OF THE 'PIOPPO' DAY CENTER

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Day centers for Alzheimer's disease have become a consolidated reality in the health and social offer of the Municipality of Rome thanks to the contribution of the local ASL and the third sector. It is well-known that the course of this disease is slow and on average patients can live beyond 10 years after the diagnosis. Initially the disease manifests itself with slight memory problems and can cause more serious behavioral and organizational problems, which mostly burden the family. Unfortunately, today there is no cure to stop the disease and all the pharmacological treatments available aim to contain the worsening of a patient's state and any behavioral disorders. These therapies are often accompanied by various non-drug therapies. Amongst these we can mention the reality orientation therapy (ROT), which has greater evidence of efficacy (although relatively moderate) and is aimed at orienting a patient in his personal life, environment and space that surround him, using continuous verbal, visual, written and musical stimuli. This is one of the therapies that is applied at the Pioppo day center, ASL ROMA 3. The peculiarity of this center is the fact that it welcomes people with medium-mild symptoms and its scope is to improve the quality of life of such guests by offering activities which maintain their remaining abilities favoring recovery of psycho-physical abilities and also providing relief to family members. The Center offers such activities as: occupational therapy, art therapy, music therapy and other socialization activities. There are thirteen day centers in Rome nowadays. In this article we will analyze the cognitive course experienced by the guests of the Alzheimer day center "Pioppo from January 2020 (pre-SARS-CoV-2 pandemic period), April 2020 (lockdown) to March 2021. The center is located on the territory of the XI Municipality of Rome and managed by the Health District of Municipality XI of Rome and Municipalities XI and XII. In January 2020 the number of Center Guests amounted to 45, who were attending it on alternate days in groups of maximum 23 people. In March 2020 due to the start of the pandemic and the advent of the lockdown, the service was initially suspended and then reshaped in order to avoid the total isolation of users and probable acceleration of the disease. The Day Center has therefore transformed their usual services into services that can be provided through home assistance and/or remote assistance. After this change 22 guests out of 45 chose the home assistance service: an operator of the Center carried out some of the activities at the patient's home for about 6 hours a week. 16 patients chose remote assistance, on a regular basis and on alternate days, when the operators in force at the Day Center did a telephone or video call monitoring carrying out activities suitable for the situation for about 4 hours a week. 7 patients did not sign up for any service. To date, 31 patients are still being followed, 21 – in the form of home assistance and 10 - in remote assistance. From the beginning of the lockdown up to the nowadays it has been found out that the absence of constant cognitive and motor stimulation and deconstruction of the daily routine have led to a more rapid cognitive decline of patients. 9 patients out of the 45 initial patients with mild to moderate Alzheimer's dementia, have been permanently hospitalized in RSA in the absence of non-pharmacological treatments and due to clinical worsening of physical and mental conditions, which did not allow the person to stay at home. 2 patients have been hospitalized in extensive facilities for people with Alzheimer's dementia on a temporary basis and 15 people with a medium-severe level of dementia are no longer suitable for Day Center treatments. 3 patients died. Only 16

patients experienced a mild impact on their health condition. According to the statistics presented, it is possible to highlight how the absence of a non-pharmacological therapeutic path has aggravated the health situation of 45 patients.

#### N. 46

### PREVALENCE OF SARCOPENIA AND DINAMOPENIA AFTER DISCHARGE FROM AN ACUTE GERIATRIC COVID UNIT (AGCU)

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**INTRODUCTION:** It is well known that older patients are at risk of sarcopenia, and this risk increases in survivors of COVID-19. This is due to bedrest, inactivity, anorexia, low protein-intake, cytokine response/inflammation and corticosteroid therapy. Although sarcopenia is associated with increased risk of adverse events, muscle strength or muscle quantity are not measured in clinical routine. The aim of the study is to identify the prevalence of sarcopenia and/or dinamopenia in patients discharged from the AGCU E.O. Ospedali Galliera in Genova and to verify the need of a specific nutritional intervention.

**PATIENTS AND METHODS:** From March 2021, 20 patients (mean age 75±2years old±SD, 12 women and 8 men), discharged from AGCU were examined, 20 days from discharge. Patients underwent clinical examination, Comprehensive Geriatric Assessment/Multidimensional evaluation, including the following aspects: functional, cognitive, nutritional, risk of pressure sores, comorbidity, polypharmacy and cohabitation status, so as to calculate the Multidimensional Prognostic Index (MPI). This index provides information about prognostic mortality and other negative outcomes (institutionalization, duration of hospital stay) and it is widely validated in the elderly and identifies three classes (low MPI-1, moderate MPI-2, high MPI-3). Patients with MPI score 1 were included. Muscle strength was measured using a dynamometer (Hand-gripTest). Muscle quantity was measured by Bioelectrical Impedance Analysis (BIA). Routine blood samples were collected including Vitamin D, folates and total protein with albumin.

**RESULTS:** The body mass index (BMI) at visit time was 19±2±SD Kg/m<sup>2</sup> in males and 21±2±SD Kg/m<sup>2</sup> in females. All patients presented low levels of Vitamin D (range 4-17ng/mL) and low folates (range: 2.4-3.1 ng/mL). Albumin was: 3.1±0.2±SD g/dL. The nutritional evaluation revealed a low-intake of proteins. MPI was 0.30±0.02±SD at visit time and 0.28±0.04±SD at discharge (P=ns). The hand-grip Test revealed a medium muscle strength of 10±2 kg in women and 20±2 kg in men. BIA revealed a medium SMI in men of 10.1±0.1±SD kg/m<sup>2</sup> and 7.3±0.4±SD kg/m<sup>2</sup> in women. Vitamin D integration was prescribed. A supplementation with whey proteins was suggested.

**CONCLUSIONS:** Clinicians need to be aware of a new entity called: “acute sarcopenia”, that might occur within 6 months from COVID-19 infection. Measurement of muscle strength and mass permits an earlier identification of sarcopenia or pre-sarcopenia condition and may lead to a better clinical care and a major impact of interventions even in low risk older patients (MPI 1). The correction of the nutritional deficits by the encouragement of a balanced nutrition or the intake of vitamins and essential aminoacids, and the creation of an individual exercise therapy may prevent or reverse disability. Geriatric patients, even with a low risk MPI, must be strictly monitored in order to prevent sarcopenia.

#### N. 47

### VACCINATION CAMPAIGN FOR ELDERLY IN RURAL COMMUNITY CARE: REPORT OF THE AZIENDA SOCIO SANITARIA FIGURE 2

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<sup>1</sup>Azienda Sociosanitaria Figure 2, Savona, Italy

**INTRODUCTION:** The COVID-19 infection, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has spread worldwide and Italy has been one of the most affected countries, with more than 3 million infections and over a hundred deaths. The SARS-CoV-2 infection affects all age groups and those over 60 years old are affected more severely. According to the National Health System guidelines, since the 12<sup>th</sup> February 2021, a large vaccination campaign started all over the country for elders, first the over-80s and then those between 60 and 80 years. Several differences in terms of socioeconomic status, demographic structure, time of arrival of the pandemic, and rural as opposite to urban settings is present among Italian regions representing a further difficulty in the vaccination campaign. In the province of Savona, in the northwest of Italy, more than 29% of the population are aged over 65 years, resulting in one of the oldest provinces of the country. The province is divided into 69 districts distributed over an area of 1.500 km<sup>2</sup>. Most of the territory is covered by mountains and forest areas, with a high prevalence of rural communities accounting for less than a thousand inhabitants each. Of these communities, 27 districts are actually localized in mountain regions and the resident population is mostly constituted by elder people. The simultaneous presence of these factors represents the main difficulty for an appropriate vaccine distribution among the elder population. In order to ensure equitable deployment of the vaccine, the Azienda Sociosanitaria Figure 2 has come up with an approach for the vaccination campaign with a particular focus on rural communities. The aim of this article is to highlight the vaccination campaign management provided by Azienda Sociosanitaria Figure 2 to improve COVID-19 vaccine delivery in elders living in rural communities.

**METHODS:** The vaccination campaign was managed at a central level by the Azienda Sociosanitaria Figure 2. Three main facilities were identified in the most closely populated urban areas of the province (Savona, Finale Ligure, Albenga). Due to the dispersed territorial distribution of the elder population, in addition to these three centres, it was decided to identify additional hubs and territorial cares specifically to meet the needs of people resident in rural communities. A thorough analysis of the available facilities was performed by the Azienda Sociosanitaria Figure 2 in accordance with majors of rural districts with less than 5, 000 inhabitants. Population density, territorial layout, accessibility, and suitability of facilities were the main criteria analysed to identify these hubs. Six additional facilities were finally identified in the districts of Arnasco, Balestrino, Calizzano, Cairo Montenotte, Millesimo and Sassello. Moreover, mobile health units were deployed to reach the people in their houses who were physically impeded to reach the vaccination points. In each hub, a pharmacy room was set up to allow the storage of vaccines and the preparation and dilution manoeuvres. In order to ensure adequate social distancing and timely intervention regarding the possible onset of signs and symptoms of adverse reactions, a specific path comprehensive of reception, user registration, administration of the vaccine, and surveillance after inoculation was set up. To guarantee the cold chain, vaccines were daily delivered to each hub with special transports.



Since a wider engagement has been requested to the Azienda Sociosanitaria Ligure 2 to pursue the COVID-19 vaccination campaign, specific healthcare worker teams were identified. Medical doctors, nurses, pharmacists, physiotherapists as well, as other healthcare workers of the Azienda Sociosanitaria Ligure 2 were recruited in the vaccination teams. To all the healthcare workers involved, it was requested to share knowledge, methods, abilities, and competencies in order to ensure reliability and safety of the vaccination process. Furthermore, the educational training provided by the National Institute of Health<sup>4</sup> (ISS) about dilution and mixing processes and maintenance of the cool chain of the vaccines was delivered to all healthcare workers employed in the campaign. About twenty healthcare workers were engaged in each hub per day. COVID-19 Comirnaty vaccine and Moderna COVID-19 vaccine were the two main vaccines employed in the rural areas. Since immunity is considered fully acquired starting two weeks after the second administration, in accordance with the vaccination schedules provided by the Italian Medicines Agency (AIFA), the second rounds of vaccinations were automatically planned 28 days apart for the Moderna COVID-19 vaccine and 21 days aside for the COVID-19 Comirnaty vaccine. All data were registered on the vaccine computerised register of the Azienda Sociosanitaria Ligure 2.

**RESULTS:** The vaccination campaign among rural communities for elders in the province of Savona started on 22nd February 2021. To date, on April 23rd, a total of 7.536 elder people (aged  $\geq 60$  years old) was vaccinated. In the elders over 80s, a total of 5.757 individuals was vaccinated, 2.665 of which completed the vaccination cycle. Among those 60 and 80 years, to 1.734 individuals were administered the first dose and to 434 the second dose.

**CONCLUSIONS:** The vaccine campaign plays an important role in limiting the diffusion of COVID-19 worldwide. A wider engagement requests to the National Healthcare System to pursue immunization of the population, among in the frailer population. Elders represent a large majority among frailer populations, especially in the province of Savona where they are mostly distributed in rural communities. To ensure equitable deployment of the vaccine among elders, the Azienda Sociosanitaria Ligure 2 has come up with an approach for the vaccination campaign with a particular focus on rural communities. To date, results seem promising in meeting the needs of elders living in rural communities as greater participation was observed. For the above-mentioned reasons, the Azienda Sociosanitaria Ligure 2 will continue and intensify his commitment to the vaccination campaign in order to achieve the immunization process of the elderly living in rural communities.

#### N. 48

### OLDER PERSON DURING COVID-19: IMPORTANCE OF SOCIAL ISOLATION AS PROTECTIVE MEASURE AND POTENTIAL RISK FACTOR

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The 2020 year show us a world we never would like to see, a year of global pandemic, with a devastating impact on National Health service and on the country's economy. It put a strain on us during the lockdown, forced us to base movements according to red, orange or yellow zones; it limited our personal freedom. COVID-19 can affect everyone but it has more serious consequences on the older people. The consequences on the elderly are not limited only to the very high mortality, but have revealed in this period a high risk of functional, cognitive and psychosocial disabilities. The vulnerable elder have to struggle with a new enemy, the isolation, and with the impossibility of having contacts with his loved ones during periods of lockdown. All this exacerbate the condition of discomfort and illness until to the point of establishing serious cases of depression, which are often

associated with a state of anorexia; the elderly suffer a clear sense of difficulty, eat less or do not eat at all and this leads to a worsening of his state of health.

#### N. 49

### PERI-OPERATIVE BLEEDING RISK IN ELDERLY PATIENTS WITH HIP FRACTURE IN THERAPY WITH ANTIPLATELET AND ANTICOAGULANT DRUGS: THE ORTHO-GER-DOAC STUDY

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**INTRODUCTION:** It is well known that early surgery in elderly patients with hip fracture is essential in decreasing complications and mortality. Administration of antiplatelet and anticoagulant drugs (VKA and DOAC) generally increases the risk of bleeding and sometimes leads to surgical delay. However, it is not completely known the real blood loss caused by these drugs both in terms of overall bleeding and incidence of major hemorrhagic complications. In particular some doubts still exist about the best timing of surgery in patients taking DOAC and whether 48 hours delay of surgery may decrease the hemorrhagic risk. The aim of our study is to evaluate the different impact of antiplatelet and anticoagulant drugs on the overall bleeding and on the risk of major hemorrhage correlated to surgical timing in the Orthogeriatric setting.

**MATERIALS AND METHODS:** Retrospective multicentric study on 500 patients admitted for proximal hip fracture at Ospedale Civile Baggiovara (Modena – 100 cases) and Policlinico S. Orsola- Malpighi (Bologna- 400 cases) in 2019 and 2020. Patients were recruited randomly from the total accesses in the Orthogeriatric ward, using randomized matrix ([www.randomization.org](http://www.randomization.org)). Four groups were created based on the therapy administrated (1. None 2. Antiplatelets 3. VKA 4. DOAC). Total extravasation of red cells during perioperative time (mL) was calculated from the Lisander's erythrocyte balance formula. Major hemorrhagic events were recorded in accordance with the International Society of Thrombosis and Haemostasis criteria.

**RESULTS:** Our data confirm that patients assuming DOAC are exposed in the perioperative period to major bleeding (1522 mL of blood+777.8) than patients not receiving drugs (1105 mL+627.5;  $P=0.000$ ), those in therapy with antiplatelets (1312 mL+650, 4;  $P=0.043$ ) and those with VKA (1294 mL+585, 3;  $P=n.s.$ ), independently on the timing of surgery. The overall incidence of major hemorrhagic events resulted of 3.6%, higher in DOAC group, even if not statistically significant (DOAC=7.4%; VKA=3.2%, antiplatelets=3.8%, no drug=2.5%,  $P=n.s.$ ). The major hemorrhagic events recorded in the DOAC group were mainly related to the urinary (2 cases) and the gastrointestinal (1 case) tracts. Only one case was directly attributable to orthopedic surgery (thigh hematoma with active bleeding). Surgical delay (>48 hours) does not decrease the overall bleeding and major hemorrhagic events in any group.

**CONCLUSIONS:** Elderly patients with hip fracture in DOAC treatment are susceptible to increased bleeding loss. Patients in DOAC group show a non significant increase in major hemorrhagic events, which are not associated with timing and surgery location. Therefore, patients assuming DOAC do not need surgery delay and can be operated safely with special attention to the need for blood transfusions.

## N. 50

**SPONTANEOUS ILIO-PSOAS HEMATOMA IN ELDERLY HOSPITALIZED WITH COVID-19 INTERSTITIAL PNEUMONIA**

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**INTRODUCTION:** Bleeding and thrombotic events are frequently involved in COVID-19 coagulopathy [1]. There are reports in literature of apparently spontaneous muscle hematoma during interstitial pneumonia in COVID-19, involving iliopsoas and other abdominal muscles, whose the prevalence and causes are not well defined.

**MATERIALS AND METHODS:** We reviewed the medical records of 108 consecutive elderly patients (53 males, 55 females) over 65 years old (average 81.2 years, range 65-100), hospitalized for COVID-19 interstitial pneumonia, during January-March 2021. COVID-19 infection was confirmed by positive real-time reverse-transcription PCR assay on naso-pharyngeal swab and positive serology for SARS-CoV-2. Interstitial bilateral pneumonia was diagnosed by clinical and chest Computed Tomography (CT) features.

**RESULTS:** Two women had apparently spontaneous iliopsoas hematoma (IPH), diagnosed by abdominal angio-CT performed for sudden anemia and lower back pain (Figure 1). Both were obese (BMI>38), treated with LMWH and steroids. Table 1 summarizes the main clinical, laboratory and CT characteristics of patients, evaluated at admission and at onset of clinical suspicion of hemorrhage. Clinical onset of IPH was with sudden and severe anemization on 7th or 15th day, followed by lower back pain after 8 or 12 hours, respectively. Case 1 was treated conservatively, according to clinical assessment and several blood count checks. LMWH was suspended. CT showed limited hematoma size (about 7 cm). The patient was discharged. Case 2 became hemodynamically unstable, treated with intravenous fluid, norepinephrine, LMWH suspension, red blood cells transfusions. The patient underwent arterial embolization, but she died of cardiac arrest after a second intra-arterial embolization session, necessary due to a gluteal branch bleeding. Both patients had severe constipation in the days before the bleeding event.

**DISCUSSION E CONCLUSIONS:** Our study among elderly with interstitial pneumonia shows a prevalence of spontaneous IPH of 1.8%, higher than that reported in the literature among patients undergoing anticoagulation therapy (0.1 to 0.7%) [2]. Despite the small number of our cases, this could indicate a myopathic effect of COVID-19 infection which, added to LMWH therapy, could further favor IPH. Indeed, myalgia is described among the common symptoms of COVID-19, while a few patients have elevated creatine kinase and myoglobin, related to severe respiratory complications [3]. Moreover, before the IPH our patients presented constipation, such as to require evacuative enema; so, like coughing, it is possible to hypothesize that muscular effort for defecation could cause muscle microtrauma, triggering the bleeding. Treatment may be medical or interventional (radiology or surgery), depending on the size of IPH and patient's clinical condition. Our experience confirms the unfavorable prognostic role of obesity [4] and indicates the clinical suspicion of IPH in presence of anemia, lower back pain and hypotension in the most severe forms, to be confirmed with diagnostic imaging. Among elderly patients hospitalized for COVID-19 pneumonia, the onset of spontaneous IPH should be considered, particularly in obese, constipated subjects receiving LMWH therapy.

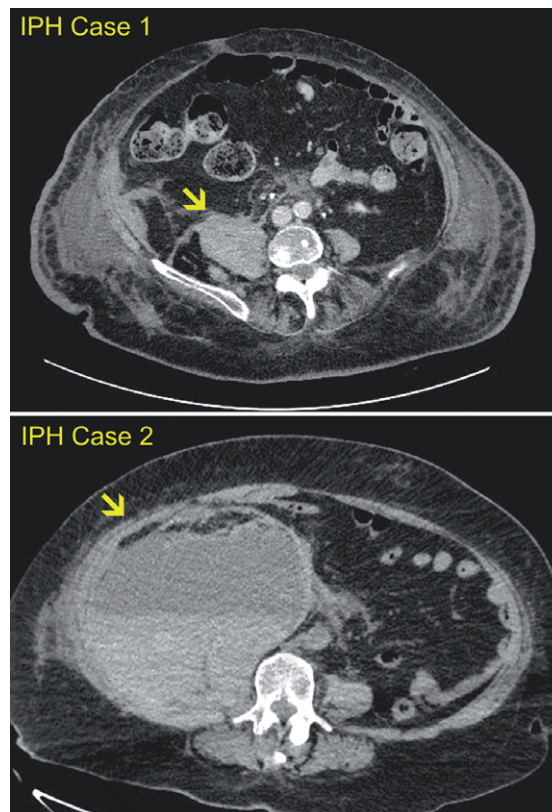


Figure 1.

Table 1.

CLINICAL AND LABORATORY PARAMETERS	CASE 1		CASE 2	
	ENTRANCE	ONSET	ENTRANCE	ONSET
Day of hospitalization	0	fifteenth	0	seventh
Age	83		67	
Gender	Female		Female	
Clinical symptoms	Cough, dyspnea	Pain referred, stypsis	Dyspnea	Pain referred, stypsis
HB, g/dL (NV: 14.0 to 18.0 g/dL)	13.30	9.33	12.84	7.01
WBC, 10 <sup>9</sup> /mL (NV: 4.0 to 10.8 10 <sup>9</sup> /mL)	7.39	10.38	4.02	11.53
Red blood cell count, 10 <sup>9</sup> /mL (NV: 4.0 to 6.0 10 <sup>9</sup> /mL)	4.51	3.1	4.21	2.38
Platelet count, 10 <sup>9</sup> /mL (NV: 130 to 400 10 <sup>9</sup> /mL)	184	138	235	338
D-dimer, ng/mL (NV: <232 ng/mL)	1429	1216	964	764
Myoglobin (NV: 25-58 ng/mL)	NA	75	72	NA
INR (NV: 0.95 to 1.15)	1.02	1.37	1.11	NA
C-reactive protein, mg/L (NV: <5.0 mg/L)	101.39.00	1.17	125.67	13.99
Lactate dehydrogenase, U/L (NV: 135 to 225 U/L)	313	NA	377	288
Antithrombin III	NA	120%	132%	NA
TC*	37	36.5	36	37
LMWH (U.I./ day)	4000 U.I.		4000 U.I. x2	
Comorbidities	PAH, BMI >30, COPD		PAH, BMI >30, dyslipidemia, hypothyroidism	
Hematoma size (TC)	7.3 cm		22 cm	

HB, hemoglobin; LMWH, low molecular weight heparin; PAH, pulmonary arterial hypertension; COPD, chronic obstructive pulmonary disease; NA, not available; WBC, white blood cell count.

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**N. 51**

**A FAVORABLE EFFECT ON NUTRITIONAL STATUS OF 12-WEEK TAILORED TEXTURE-MODIFIED SOUS-VIDE COOKING MEALS IN INSTITUTIONALIZED ELDERLY WOMEN WITH OROPHARYNGEAL DYSPHAGIA: AN INTERVENTION STUDY**

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**INTRODUCTION:** Dysphagic patients are not always able to meet their energy, micro and macronutrients needs for various causes and therefore are at high risk of malnutrition. The aim of the present study is to evaluate the effectiveness on satisfaction of the meal (by a 10-cm visual-analytical scale), food intake (by visual estimation of food waste), nutritional status (anthropometric measures, Mini Nutritional Assessment (MNA), vitamin D, B12, folic acid), functional (handgrip) and blood chemistry metabolic parameters of a tailored texture-modified sous-vide cooking meals (TTMSVC), well balanced in macro and micronutrients, in elderly women suffering from oropharyngeal dysphagia at long-term care facilities.

**METHODS:** A 12-week intervention study was conducted on female elderly subjects affected by oropharyngeal dysphagia of level 3-5. The treated group received TTMSVC (produced by Sovite, Giussago, Pavia Italy) with the consistencies standardized using viscosimeter (5000–10000mP/s). The control group maintained pureed hospital diet.

**RESULTS:** 50 subjects, 25 in treatment group and 25 in control group, with mean±SD age 89. 12±4.18 and Mini Mental State Examination (MMSE) 20.58±1.63 were enrolled. The treatment and control groups were similar at baseline. The changes over time between the two groups showed significant differences for food intake, meal appreciation, Body Mass Index (BMI), calf circumference, arm circumference, MNA, prealbumin, albumin, folic acid, vitamin D, ionized calcium, C-Reactive Protein (CRP), (Tumor Necrosis Factor) TNF alpha, handgrip. Significant positive correlations were observed in the treatment group between the meal appreciation and prealbumin and vitamin D. This study demonstrated that elderly dysphagic women at long-term care facilities can eat better and increase nutritional status by eating 12-week tailored appealing TTMSVC.

**N. 52**

**NEW ONSET ATRIAL FIBRILLATION AFTER HIP FRACTURE IN THE ELDERLY, A REVIEW AT THE SAN MARTINO POLICLINICAL HOSPITAL IN GENOA**

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**BACKGROUND:** Atrial fibrillation is a supraventricular tachyarrhythmia with uncoordinated atrial electrical activation and consequently ineffective atrial contraction, it can occur as symptomatic or asymptomatic, and it needs an ECG to be diagnosed. AF is the most common tachyarrhythmia in the adults, more frequent in men than women. The currently estimated prevalence of AF in adults is between 2% and 4%; while the incidence is estimated around 4.1%; increased by age [1,2]. Hip Fracture is an important and debilitating condition in older people, particularly affecting women. It constitutes a leading cause of hospital admission and length of stay among the elderly. The epidemiological data varies between countries, but it is globally estimated that hip fractures will affect around 18% of women and 6% of men; this disease is associated with the development of lots of negative consequences: disability, depression, and cardiovascular diseases [3,7]. Atrial fibrillation and hip fracture are both prevalent events in the elderly population, and frequently coexist. The evidence in literature suggests that AF is associated with increased readmission and mortality rates in hip fracture patients [4]. It is also known that new postoperative atrial fibrillation (POAF) is the most common perioperative arrhythmia and its reported incidence ranges from 0.4%–26% in patients undergoing non-cardiac non-thoracic surgery. Furthermore it's acknowledged that POAF in undergoing hip fracture surgery is associated with a longer hospital stay if compared to patients who maintain sinus rhythm. [5; 6]. On the other hand, some studies have demonstrated that there are no differences in the rehabilitation outcomes between patients with atrial fibrillation if compared with the ones in sinus rhythm, despite the frequent association of AF with hypertension, ischemic heart disease, congestive heart failure and strokes [7]. Even though, in literature it's easy to find information about the association between hip fracture and AF, (in particular the implication of anticoagulant therapy (warfarin *versus* DOAC) in the risk of osteoporotic fracture [8,9]), we couldn't find any data about the association between hip fracture and new onset atrial fibrillation, that is an atrial fibrillation never diagnosed before the hospital admission due to the hip fracture itself. The aim of our study is to evaluate if the incidence of new onset AF between patients with hip fracture compared with the incidence of AF in general population, and try to understand if the hip fracture itself could be a trigger to the insorgence of atrial fibrillation. Hip fracture indeed is an acute event and in the perioperative period it leads to lots of outcomes like adrenergic stimulation, autonomic activation due to pain, hypotension after the loss of volumes, anemia, systemic inflammation, electrolyte abnormalities, possible infections etc. that could end to atrial fibrillation development especially in frail patients like the elderly indeed.

**METHODS:** Our data were collected from 2015 to March 2021 in the Orthopedic and Traumatologic Unit in Policlinical Hospital of San Martino in Genoa; from January 2021 we added also patients from Orthopedic Clinic of the same Hospital. Our group has been working in this unit since 2015 as Orthogeriatricians, we have taken in charge patients with age above 65 years with hip fracture, from the access to the ER to the discharge. Every single patient has been registered in a database from which we could find information about sex, age and complications occurred during the recovery period. From January 2015 to March 2021, 1165 patients above 65 years old (797 women 368 men) were recovered for hip fracture. We exclude from our analysis the ones who already had a diagnosed and undertreatment AF; putting our attention to the cases of atrial fibrillation occurred during the recovery period (from the access to the ER to the discharge). 62 patients (24 men 38 women) developed a new onset atrial fibrillation; the age of this patients was included between 75 and 99 years old. Between these 62 patients, 43 of them also developed anemia during the recovery period, 23 of them developed delirium; nobody had stroke events; 8 of them died during the recovery. From the analysis of our data it occurs that 62 patients of 1165 developed a new onset atrial fibrillation that could be considered as a consequence of the hip frac-



ture itself. In our unit the cumulative incidence in six years of new onset atrial fibrillation has been 5.3%.

**CONCLUSIONS:** In conclusion we can say that in the last six years in the Orthopaedic and Traumatologic Unit and in Orthopaedic Clinic in Policlinical Hospital of San Martino in Genoa the incidence of new onset atrial fibrillation between elderly patients with hip fracture has been higher than in general population. Our hypothesis is based on the role of the hip fracture itself as a trigger to acute consequences like bleed loss that cause hypovolemia, anemia and electrolytes alterations; all these events could cause the developing of new onset atrial fibrillation. Even though, due to the lack of information in literature, we can conclude that more studies should be carried on in the near future.

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#### N. 53

### ISCHEMIC STROKE AND VENOUS THROMBOSIS AS POSSIBLE COVID-19 RELATED LONG-TERM COMPLICATION

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**AIM:** We describe the case of an 80 years-old woman affected by stroke and venous thrombosis occurring seven months after the diagnosis of COVID-19 infection. A possible correlation of the two cardiovascular events with Coronavirus disease was posited.

**METHODS:** An 80 years-old woman was admitted to the emergency department (ED) in October 2020 with new onset pulsating supraorbital headache, unresponsive to analgesics, associated with nausea and photophobia. She complained fatigue, postural instability and mental foginess. The patient was hospitalized in March

2020 with the diagnosis of interstitial COVID pneumonia confirmed by positive RT-PCR test. She was treated with hydroxychloroquine, antivirals (darunavir/cobicistat), antithrombotic prophylaxis with LMWH and low-flow oxygen therapy. Her nasopharyngeal swab tested negative on May 2020. She was again admitted to the ED in August 2020 with right upper limb pain and D-Dimer elevation (9.06 mg/L) at blood tests with the diagnosis of cephalic vein thrombosis. Her past medical history was significant for arterial hypertension, dyslipidemia, hypothyroidism, rheumatic polymyalgia, depressive syndrome, previous lower limbs deep vein thrombosis. Before admission, she was independent in both basic and instrumental Activities of Daily Living. On physical exam she was alert and oriented in time, space, and person. The results of her neurological examination were unremarkable, as well as the cardiopulmonary assessment. Laboratory findings were suggestive of a hypercoagulable state (D-Dimer 5, 93mg/L) and elevation of inflammatory markers (VES 39mm/h). Computed tomography (CT) of the head showed right parietal subacute ischemic stroke. CT angiography of the head did not demonstrate intracranial arterial stenosis. A two-dimensional echocardiogram didn't show any evidence of thrombus, and 24 hours Holter-ECG did not reveal any arrhythmias. US of supra-aortic trunks excluded extracranial carotid atherosclerotic disease.

**RESULTS:** Clinical and instrumental investigations orient towards a right parietal ischemic stroke in recent SARS-CoV-2 infection. The patient did not qualify for tPA administration and lifelong antiplatelet agent were prescribed.

**CONCLUSIONS:** Systematic reviews and meta-analysis revealed an increased incidence of stroke and thromboembolic complications in hospitalized COVID-19 patients, associated with older age and comorbidities. SARS-CoV-2 infection is linked to a prothrombotic and proinflammatory state caused by an important release of cytokines, endothelial cells activation and coagulation leading to thrombosis. The presentation time of thromboembolic complications varies in different published case reports. In De Lorenzo A. report, an 80-year-old male developed ischemic stroke of cerebellar vermis 30 days after the diagnosis of moderate SARS-CoV-2 infections. A report by Garg A. presented a case of a middle-aged woman with subacute ischemic stroke 2 months after infection with SARS-CoV-2. The patient was then retested for SARS-CoV-2 and found to be positive. Long-term health consequences of COVID-19 disease remain largely unclear. In a cohort study with 6 months follow-up, assessing the health consequences of adults recovering from COVID-19, most patients presented at least one symptom, particularly fatigue, as in the present clinical case. Among long-term extrapulmonary manifestations, thromboembolic diseases (including cerebrovascular ones) were described. In our clinical case a possible correlation between thromboembolic events and SARS-CoV-2 infection is assumed, even though the atherosclerotic etiology of the stroke cannot be excluded, since several risk factors (age, hypertension, dyslipidemia) were present. Moreover, the patient's past medical history was positive for deep vein thrombosis. Our case emphasizes on the importance of early identification of patients at risk of thromboembolic complications, as well as the necessity of neurological assessment in long-term COVID-19 survivors.

#### N. 54

### NEED FOR URGENCY AND EMERGENCY CARE OF ELDERLY PATIENTS IN AN EMERGENCY DEPARTMENT DURING THE COVID-19 PANDEMIC

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**BACKGROUND:** The 2019 coronavirus epidemic (COVID-19) of Italy originated from Codogno, an Italian municipality of 15, 978 inhabitants in the province of Lodi, in the south-west of Lombardy, on February 21, 2020. Codogno is about 50 km from Pavia, home of one of the largest educational hospitals in the region, the IRCCS Policlinico San Matteo Foundation. The hospital has been involved in the management of the outbreak since its beginning. The elderly is a fragile subject and represents the population with the highest mortality within the pandemic. Due to its fragile condition and the coexistence of chronic diseases, it is also one of the populations with the highest access to emergency departments (ED). During the COVID period, the elderly had to turn to EDs not only for COVID cases but also for the exacerbation of their underlying diseases.

**PURPOSE:** To assess the impact of the COVID pandemic concerning the access motives of the elderly population (>75 years) who went to the Emergency Room during the COVID pandemic period from 23 February to 1 May 2020, compared to the population accessing our Emergency Room during the same period of the previous year.

**MATERIALS AND METHODS:** We evaluated all patients over 75 years of age who needed access to our emergency room from February 23 to May 1, 2020. We then compared this population with the population over 75 years of age who were accessing our emergency room during the same period of the previous year.

**RESULTS AND DISCUSSION:** We enrolled 4891 patients. There has been a severe reduction in the total number of elderly accesses: 1910 in the COVID period and 2981 in the previous year. However, this decrease (-36%) was lower than the one concerning the general population (about -50%). The causes for access are shown in the Table 1:

**Table 1.**

ACCESS CAUSES	2019 (%)	2020 (%)
Dyspnea	13.59	18.90
Fever-sepsis protocol	3.19	14.19
Minor trauma	9.19	6.28
Neurological disorders	9.29	12.46
Trauma	9.26	8.64
Syncope	3.66	3.09
Psychic disorders	0.27	0.47
Headache	0.70	0.21
Thoracic pain	8.55	7.43
Lumbar or dorsal pain	0.97	0.42
Abdominal pain	9.33	6.02
Injuries/Burns	1.20	0.47
Minor symptoms	15.13	10.58
Alteration vital parameters	3.25	2.09
Specialistic	3.49	2.25
Palpitation	3.42	2.62
Bleeding	4.83	3.82
Intoxication	0.20	0.05

The vital parameters were superimposable without statistically significant difference. The main cause of access during the pandemic was the dyspneic symptomatology followed by fever.

The period of comparison coincides with the flu peak of 2019. The reasons for access that have suffered the greatest reduction were those for minor medical symptoms and specialist visits. The other reasons for access showed a modest and less marked reduction than that suffered by other age groups.

**CONCLUSIONS:** The epidemic has led to a reduction in access for elderly patients, although less than the general population. The most frequent reasons for access were compatible with COVID symptoms in more than a third of the accesses. However, the elderly still had to access EDs frequently due to the exacerbation of their chronic pathologies.

**ACKNOWLEDGEMENTS:** We would like to thank all employees of the Fondazione IRCCS Policlinico San Matteo for their extraordinary commitment during the pandemic.

## N. 55

### IMPACT OF THE COVID-19 PANDEMIC ON NEUROLOGICAL DISORDERS IN AN EMERGENCY DEPARTMENT OF LOMBARDY

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**BACKGROUND:** The coronavirus 2019 (COVID-19) epidemic in Italy originated in the south-west of Lombardy, on February 21, 2020. The Fondazione IRCCS Policlinico San Matteo di Pavia has been involved in the management of the outbreak since its beginning. Crowding has been defined as a worldwide problem and is a cause of reduced quality of care and patient satisfaction. It is due and identified through three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the ED (output). The latter are considered the main responsible for Crowding.

**PURPOSE:** As part of a study that wanted to assess the impact of the COVID pandemic on time-dependent diseases in geriatric patients we evaluated the geriatric population that went to the ER for neurological disorders.

**MATERIALS AND METHODS:** We evaluated all patients aged 75 years and older who were accessing our emergency room for neurological disorders from February 22 to May 1, 2020 and during the same period of the previous year.

**RESULTS AND DISCUSSION:** We enrolled 530 patients. There was only a slight reduction in the total number of accesses for acute neurological disorders: 243 in the COVID period and 287 in the previous year. The vital parameters were overlapping without statistically significant differences. Patients in the COVID pandemic tend to be more frequently carried by ambulance and 118 compared to the reference period (90% vs 64%, the remaining half autonomous). Patients in the COVID pandemic have higher priority to medical examination and severity to discharge codes (yellow and red) more frequently than in the reference period (79% vs 65% respectively) and more frequently need hospitalization (67% vs 54%). The Crowding input factors are slightly lower in the pandemic period: the patients are slightly reduced (243 vs 287) as the average waiting times (52 min vs 86 min) accesses. The percentage of patients who exceeded the waiting time target by code of priority to the medical visit is also reduced (19% vs 30%). Crowding



throughput factors worsened: LOS (766 vs 563 min). Crowding output factors also worsened: the percentage of access block is higher during the pandemic (21% vs 13%). The Total Access Block Time is significantly higher in the COVID period both for the Visiting Rooms (53, 117 vs 27.688 min) and for the Holding Area (14.401 vs 3.350 min).

**CONCLUSIONS:** The epidemic has led only to a slight reduction in access for acute neurological disorders; we must therefore think that this disease does not suffer major deflections in the pandemic period for the geriatric population. Patients are more frequently in need of hospitalization and more severe exit codes. The pandemic period has presented a worsened crowding for these patients due to the Exit Block, resulting in a greater workload for emergency room workers.

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## N. 56

### DIFFERENCES BETWEEN THE FIRST AND SECOND WAVE OF THE COVID-19 PANDEMIC ON NEUROLOGICAL DISORDERS IN GERIATRIC POPULATION

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**BACKGROUND:** During the first wave of the COVID-19 pandemic, we witnessed a drastic reduction in the total number of accesses, in the face of more serious cases and a exorbitant increase in crowding, especially linked to the access block. Crowding has been defined as a worldwide problem and is a cause of reduced quality of care and patient satisfaction. It is due and identified by three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the PS (output). The latter are considered the main responsible for Crowding.

**PURPOSE:** We evaluated the geriatric population who went to the ER for neurological disorders between the first and second wave of the coronavirus pandemic.

**MATERIALS AND METHODS:** We evaluated all the geriatric patients (>75) who were accessing our emergency room for neurological disorders from May 1 to October 20, 2020 and during the same period of the previous year.

**RESULTS AND DISCUSSION:** We have enrolled 1458 patients: 726 in the COVID period and 732 in the previous year. The vital parameters, age and sex were overlapping without statistically significant differences. Patients in the COVID pandemic have slightly but not statistically significant higher (yellow and red) priority time to doc and exit severity codes more frequently than in the reference period (70% vs 61% and 43% vs 38% respectively) and need of hospitalization (53% vs 49%). Crowding input factors are stackable: number of patients and average waiting times (83 min vs 76 min) are overlapping. Crowding throughput factors worsened: LOS (730 vs 587 min). Crowding output factors worsened: the percentage of access block is higher during the pandemic (18% vs 13%). The Total Access Block Time is significantly higher in the COVID period both for the examination rooms (83.650 vs 48.915 min) and for the holding area (50.718 vs 27.665 min).

**CONCLUSIONS:** In the period between the two pandemic peaks ED accesses for acute neurological disorders were stackable. Patients were found to have comparable severity, need for hospitalization, and need for high-intensity care. The pandemic period however, it has changed the way the whole hospital works for the necessary execution of swabs on entry and exit. In the period between the two waves the exit block phenomenon persisted with a consequent serious workload on EDs.

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## N. 57

### SECOND WAVE OF THE COVID-19 PANDEMIC: SEVERITY OF DISPNEA IN AN ITALIAN GERIATRIC POPULATION

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**BACKGROUND:** During the pandemic it is expected to have an increase in the number of dyspnea-Attenders and also an increase in ED overcrowding. Crowding is due and identified by three orders of factors: those at the access (input); those related to the patient's process (throughput); and those at the exit from the PS (output). The latter are considered the main responsible for Crowding. The latter are held to be the main culprits of Crowding. Crowding negatively affects both the quality of care and outcomes, the elderly as a fragile population can have further harm from this phenomenon.

**PURPOSE:** Assess the geriatric population (>75) who went to the emergency room for dispnea during the second wave of the coronavirus pandemic.

**MATERIALS AND METHODS:** We evaluated all the patients who were accessing our emergency room for dispnea from October 20 to November 30, 2020 and during the same period of the previous year.

**RESULTS AND DISCUSSION:** We have enrolled 491 patients: 260 in the COVID period and 231 in the previous year. During the pandemic period the male attenders were greater (53% M), while the previous year female attenders were more frequent (63% F). The average age, on the other hand, is comparable (about 85 years). Patients arrived with autonomous means are reduced to a third (9% vs 30%). The higher (yellow and red) priority time to doc are overlapping (about 75%) but exit codes are worse in pandemic period (64% vs 49%), also the rate of hospitalization is worse (78% vs 56%). For the greater number of ED attenders the absolute number of hospitalized patients was even greater. Crowding input factors have little worsened during the pandemic period as for the number of patients (260 vs 231) but the average waiting times have decreased (47 min vs 81 min). Crowding throughput factors have almost doubled: ED-Length Of Stay (1308 vs 807 min). As crowding output factors: The exit block is much greater (51% vs 21%) and The Total Time Access Block has increased fivefold (139.520 vs 28.993 min).

**CONCLUSIONS:** During the pandemic period geriatric ED-Attenders for dispnea have increased, are more serious and have



worse outcomes. All crowding indices have worsened considerably, especially throughputs and output factors, due to the exit block phenomenon and to the change imposed by the pandemic on the way of working (need for tampons, more complex treatments, more frequent checks) with a consequent workload on EDs. The reduction in waiting times in spite of the priority codes for the medical examination is probably due to the differentiation of flows for patients with fever/dyspnea and those without.

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## N. 58

### MINOR TRAUMA DURING THE COVID-19 PANDEMIC

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BACKGROUND: All the hospitals involved in the second wave coronavirus 2019 (COVID-19) epidemic in Italy have experienced a huge increase in crowding, while witnessing a reduction in the presentation of minor emergencies. These had been pointed out by some authors as one of the causes of crowding and included in the crowding input factors. Crowding negatively affects both the quality of care and outcomes, the elderly as a fragile population can have further harm from this phenomenon.

PURPOSE: Assess the geriatric population (>75) who went to the emergency room for minor trauma.

MATERIALS AND METHODS: We evaluated all geriatric patients who were accessing our emergency room for minor trauma from October 20 to November, 2020 and during the same period of the previous year.

RESULTS AND DISCUSSION: We enrolled 255 patients. There was a severe reduction in the total number of accesses for minor trauma: 79 in the COVID period and 176 in the previous year. Vital parameters, age and gender overlapped. Patients in the COVID pandemic tend to be more frequently accompanied by ambulance compared to the reference period (66% vs 54%, the remaining half by independent means). The priority codes for the medical examination were not different. During the pandemic, they had high discharge severity codes (yellow and red) with a higher frequency compared to the reference period (11% vs 5%) and more frequently needed hospitalization (22% vs 11%). Rarely this category of patients presents altered crowding indexes. Crowding input factors are however lower in the pandemic period: reduced patients (79 vs 176) and reduced average waiting times (56 min vs 80 min). Crowding throughput factors worsened only slightly: LOS (457 vs 256 min). Crowding output factors also slightly worsened: the percentage of access block is higher during the pandemic (13% vs 2%). The Total Access Block Time is significantly higher during the COVID period (13.999 vs 990 min).

CONCLUSIONS: The epidemic led to a drastic reduction in access for minor trauma, with consequent overcrowding. The burden on overcrowding is well highlighted by the percentage of exit block and the total time access block, which highlight how much more time is dedicated to the care of these patients. Patients have more frequent need for hospitalization and more severe exit codes.

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## N. 59

### GERIATRIC PATIENT PRESENTATION AND CROWDING IN AN EMERGENCY DEPARTMENT DURING THE COVID-19 PANDEMIC

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BACKGROUND: Epidemics see different behaviors of patients depending on the degree of mortality and the emotional impact of the epidemic on the population. On one hand, a high mortality epidemic may reduce the demands on the health care system, but it brings more serious patients to its attention, and vice versa. We can therefore highlight how epidemics always weigh heavily on the health care system and E. D., in particular leading to overcrowding.

PURPOSE: To assess the impact of the second wave COVID pandemic on the crowding of the geriatric population of an Italian ED.

MATERIALS AND METHODS: We evaluated all geriatric patients accessing our PS for chest pain from October 20 to November 30, 2020 and during the same period of the previous year.

RESULTS AND DISCUSSION: We enrolled 2.952 patients. There was a clear reduction in the total number of accesses: 1.243 in the COVID period and 1.709 in 2019. The vital parameters were overlapping without statistically significant differences. In both periods there was confirmed a slight non statistically significant male prevalence (about 53%). Patients in the COVID pandemic tend to be more frequently accompanied by ambulance compared to the reference period (78% vs 63%, the remaining half by independent means). Patients in the COVID pandemic have more frequently high codes (yellow and red) of priority to medical examination (50% vs 42%) and severity to discharge (39% vs 24%) compared to the previous period and more frequently need hospitalization (52% vs 35%; P<0.05). Respiratory symptoms and fever increased from 10% to 23%, making it the main cause of access to the pandemic. Crowding input factors are lower during the pandemic period: reduced attenders (1.243 vs 1.709) and reduced average waiting times (59 min vs 96 min) accesses. The percentage of patients who exceeded the waiting time target set for the priority code for the medical examination also decreased (10% vs 18%). Crowding throughput factors have worsened: LOS (818 vs 525 min). Crowding output factors have also worsened: the percentage of access blocks is higher during the pandemic (51% vs 32%; P<0.05). The Total Access Block Time is significantly higher in the COVID period (330.528 vs 110.538 min; P<0.05).

CONCLUSIONS: The epidemic has led to a reduction in ED access, especially self-reported access. COVID-19-compatible symptoms accounted for the majority of ED accesses. Patients presented more frequently the need of hospitalization and more severe exit codes. The period of the pandemic presented a worse crowding for these patients due to exit block the change imposed by the pandemic on the way of working (need for tampons, more complex treatments, more frequent checks) with a consequent workload on ED's operator.

ACKNOWLEDGEMENTS: We would like to thank all employees of the IRCCS Policlinico San Matteo Foundation for their extraordinary commitment during the pandemic.

## N. 60

### THE ENGINEERED GLOVE HAND TEST SYSTEM AS A PART OF A NEW DIGITAL MULTIDIMENSIONAL FRAILTY INDEX

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**BACKGROUND:** The correct stratification of older people in relation to their functional intrinsic capacity and the presence of frailty risk factors is the basis of the proactive medicine and the active and healthy aging programs.

**AIM:** The aim of the present study was to establish the current or potential state of cognitive and physical frailty at a very early stage, by using a technological procedure, *i.e.* the engineered glove Hand Test System (HTS), as a part of the project DIGIFRAIL4P - "Development and validation of a multidimensional Digital Frailty Index", co-funded by the Regione Liguria 4P Health (Predictive, Personalized, Preventive, Participatory).

**METHODS:** This pilot study was carried-out in ambulatory older subjects who underwent a Comprehensive Geriatric Assessment (CGA)-based Multidimensional Prognostic Index (MPI) to assess risk of multidimensional frailty. Age, comorbidities, psychosocial problems, previous or predicted healthcare utilization, change in living situation and specific geriatric conditions were also recorded. Moreover, functional and clinical dimensions were also explored including: i) pain's presence with Visual Analogical Scale-VAS (mean VAS 2.8±2.2); ii) cognitive function with Mini Mental State Examination-MMSE; iii) physical performance and motor activity through the Speed Gait (mean 8.2 sec±3.2) and Hand Grip Strength (mean HP 28.3 lb±7.8) tested by a dynamometer. All subjects underwent the glove HTS, which measures the hand dexterity by specific sequences performed at spontaneous and maximum speed. HTS is able to explore the hand functions, *i.e.* a complex system which requires important motor skills. Data were analysed with Logic Learning Machine (LLM), a machine learning method able to automatically retrieve IF-THEN rules starting from labelled data. A classification approach was adopted by dividing subjects according to the value of the considered dimensions. Obtained intelligible rules allow a better comprehension of the model with respect to standard machine learning approaches (*e.g.* Neural Networks) and, moreover, automatically generates a ranking of the most important parameters for classification, thus highlighting the key factors that influences the onset of frailty signals.

**RESULTS:** Twenty-five consecutive ambulatory older subjects (mean age 74.9±6, 0 years; females 68%), with a low risk of multidimensional frailty (MPI-1) and with normal cognitive functions (MMSE>26, mean value MMSE=28.2±0.8), were included in the study. Selected HTS parameters correlate with every functional parameters studied. At dominant hand, Hand Rate (HR) parameter measured during the self-paced IMRL (index-medium-ring-little) task showed a correlation with

MMSE≤28, while Touch Duration (TD) correlated with MMSE≥28 and Inter Tapping Interval (ITI) parameter correlated with VAS≤2. During the finger tapping task at maximum velocity ITI correlated with Speed Gait.

**CONCLUSIONS:** These findings confirm data of previous cross-sectional studies indicating an association between hand dexterity and cognitive performances. Moreover, the results of this study suggest that engineered glove HTS is a simple to use digital tool, able to identify early impairment of functional parameters of multidimensional frailty in older people. Further studies are needed to evaluate whether the glove HTS may be useful to identifying older subjects at risk of cognitive or physical frailty in order to personalize training programs of active and healthy aging.

## N. 61

### COVID-19 VACCINE HESITANCY IN THE FRAIL POPULATION AND THEIR CAREGIVERS

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**BACKGROUND:** At present April 30th 2021 in Italy 5, 7 billion people have completed COVID-19 vaccine (the two scheduled doses). Vaccine hesitancy, classified by WHO in 2019 among the "ten global health threats", has increased in Western countries, despite the high social perception of the pandemic risk. Frail subjects, affected by cognitive impairment (CI) or Down syndrome (DS), have a different perception of pandemic risk and acceptance of preventive measures.

**AIM:** The aim of the study is to identify the factors that affect vaccination hesitancy in outpatient frail population with or without cognitive impairment, compared to general population, during coronavirus vaccine campaign.

**METHODS:** From January 2021, 231 frail outpatients (mean age 61±19 years, 61.5% females) were included and stratified into three groups. Group A: 117 frail older subjects (mean age 73±15 years, 65, 8% females) with CI and their caregivers afferent to the geriatric Cognitive Disorders and Dementia Center; Group B: 50 frail adult subjects with DS and their caregivers (mean age 53±19 years, 56% females); Group C: 64 adult frail subjects (mean age 47±12 years, 57.8% females), afferent to the ambulatory of microcitemia. Frailty was evaluated by means of the Comprehensive Geriatric Assessment (CGA)-based Multidimensional Prognostic Index (MPI) that include information on functional, cognitive, nutrition, motility, co-morbidity, number of drugs, co-habitation status and stratify accordingly into three classes: MPI-1(low-), MPI-2 (moderate-), MPI-3 (severe-risk of frailty). Only subjects of classes MPI-2 and MPI-3 were included in the study. All participants underwent a specific survey in order to explore the COVID-19 vaccine decision, *i.e.* adherence vs refusal vs hesitancy. Moreover, anti-flu and anti-pneumococcus vaccine adherence in the years 2019 and 2020, presence of formal/informal care, education, and other psycho-



socio-cultural and demo-economic determinants of vaccine hesitancy were recorded.

**RESULTS:** 22% of the participants were undecided or refused COVID-19 vaccination, and 78% accepted COVID-19 vaccine. Reasons for vaccine hesitancy were the absence of enough clinical trials (52%) and fear of side effects of the vaccine (38%). We observed a higher hesitancy of COVID-19 vaccine among the older frail individuals (Group A) ( $P=0.026$ ) and a low acceptance in their formal caregiver ( $P=0.127$ ). In Group B we observed that vaccine hesitancy was significantly higher in older than younger subjects (66 vs 50 years,  $P=0.04$ ). Moreover, in Group A, 71% of patients who accepted COVID-19 vaccine, showed an increased adherence to anti-flu vaccine 2020 compared to anti-flu vaccine 2019 (67% vs 55%, respectively). The participants revealed a low mean level of concern for COVID-19 vaccines' function (31%).

**CONCLUSIONS:** Despite the COVID-19 pandemic, COVID-19 vaccine hesitancy is high among frail people with CI. COVID-19 vaccine acceptance is associated with anti-flu vaccination adherence during 2020 year. Formal caregivers' low vaccine acceptance suggest the need for tailored educational programs to promote the COVID-19 vaccination.

## N. 62

### PREVALENCE AND CLINICAL CORRELATES OF ANEMIA IN OLDER PATIENTS WITH HIP FRACTURE

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**AIM:** Anemia is common in older people and its prevalence increases with increasing age. In older patients, anemia has been associated with several negative outcomes, including physical disability, falls, cognitive decline, and mortality. Anemia is a well-known risk factors for falls but might be also the consequence of hip fracture itself and of the orthopedic surgery. The aim of this project was to estimate prevalence of anemia in a cohort of older patients admitted to an orthogeriatric unit with hip fracture and to investigate clinical correlates of anemia.

**METHODS:** Single-center, observational, longitudinal study of older patients admitted to the Orthogeriatric Unit of the Azienda Ospedaliero-Universitaria di Ferrara between January and May 2021. Patients enrolled in the study were evaluated by mean of comprehensive geriatric assessment. Hemoglobin levels were assessed the day of admission, the day after surgery, the third day after surgery and before hospital discharge. Anemia was defined according to gender specific WHO criteria.

**RESULTS:** Nineteen patients signed the informed consent and were enrolled in the study. The mean age was 83.2 years and (77.8%) were women. At hospital admission anemia prevalence was 58.9% with men (75%) having a greater likelihood as compared to women (54.3%),  $P=0.096$ . At hospital admission prevalence of anemia was associated with increasing age ( $P=0.061$ ), more BADL and IADL impairment ( $P=0.150$  and  $P=0.022$ , respectively), greater number of medications ( $P=0.009$ ), use of direct oral anticoagulants ( $P=0.054$ ) and antagonists of the P2Y<sub>12</sub> receptor ( $P=0.008$ ), prevalence of cardiovascular disease, chronic renal failure, cancer, and number of comorbidities. In multivariable logistic regression analysis adjusted for age and gender, prevalent cardiovascular disease, chronic renal failure, number of medications, and number of comorbidities were independently associated with the likelihood of having anemia at hospital admission.

**CONCLUSIONS:** In older patients with hip fracture prevalence of anemia is extremely high and is associated with comorbidities, polytherapy, cardiovascular disease, and renal failure. The relationship between anemia with peri and post-surgery outcomes should be investigated with longitudinal analyses.

## N. 63

### COULD ISCHEMIC COLITIS BE THE FIRST MANIFESTATION OF COVID-19? A CASE REPORT

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**INTRODUCTION:** Coronavirus disease (COVID-19) is caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and is responsible for the on-going 2019-2020 pandemic. The typical clinical manifestations were fever, cough, dyspnoea, and myalgia or fatigue. Less common symptoms included headache, diarrhoea, nausea and vomiting. However diarrhoea as the first symptom is rarely described.

**MATERIALS AND METHODS:** Here we reported a rare case of 2019 novel coronavirus-infected frailty patient with clinical, laboratory and histologic features that mimic ischemic colitis. Rectoscopy, CT abdomen and laboratory exams are carefully collected as well as detection of viral RNA in pharynx.

**RESULTS:** This case report provides preliminary evidence of intestinal mucosa involvement by inflammatory and ischemic processes, leading to clinical manifestations that mimic ischemic colitis early in a lethal COVID-19 infection. Diarrhea and rectal bleeding significantly anteceded respiratory symptoms with a positive faecal sample ten days in advance of positive oropharyngeal and nasopharyngeal swabs.

**CONCLUSIONS:** This case demonstrated that SARS-CoV-2 can compromise the microvascular blood flow in the intestinal wall with a parallel activation of an inflammatory cascade that can mask many of the characteristic features of COVID-19 and for this reason could be under-diagnosed. The diagnosis was made possible by the search of SARS-CoV-2 in a stool specimen collected on admission. Our experience may be useful to set up thorough microbiological characterization of uncertain cases.

## N. 64

### HOSPITAL-ACQUIRED DISABILITY IN THE ELDERLY WITH BACTERIAL INFECTIOUS DISEASES: ANALYSIS OF RISK FACTORS

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**INTRODUCTION:** Hospital-acquired disability (HAD) is defined as a functional impairment following hospitalization and acute illness. HAD is frequent among hospitalized older adults and has major negative consequences for patients.

**MATERIALS AND METHODS:** We collected data from a cohort of elderly patients hospitalized from September 2020 to January 2021 at Ospedale Civile di Baggiovara, in the Acute



Geriatric ward, diagnosed with bacterial infections and presented with fever, delirium or falls at admission. We excluded patients who died during hospital stay and individuals with a complete functional dependency at admission (Katz's ADL and IADL=0). We analyzed the delta between ADL and IADL at discharge, identifying HAD as a decrease <1 point in ADL or IADL compared to admission. We investigated the possible risk factors for functional impairment, both before admission and during hospital stay.

**RESULTS:** The initial size of the sample was 50 patients, of whom 7 died during hospital stay and 9 had a complete functional dependency in ADL and IADL at admission; the final size of the sample is 34 patients. 16 individuals (47.1%) developed HAD, in 12 cases involving both ADL and IADL domains. Patients in the HAD group were older (mean age 87.88±5.80 vs 86, 33±7.65; P=0.47 n. s.), faced longer hospital stay (mean LOS 15.63±9.67 vs 10, 78±6, 50, P=0.009), had higher comorbidity burden (mean CIRS severity 6, 63±2.58 vs 4.83±2.48; P=0.047 and mean corrected Charlson 8.25±1.91 vs 7.06±1.92; P=0.008), involving more frequently cardiologic conditions (93, 75% vs 55.56%, P=0.008), chronic kidney disease (87.50% vs 55.56%, P=0.007) and worse cognitive performance (mean MMSE 17.67±8.47 vs 23, 12±6, 94; P=0.047). 10 patients with HAD had fallen in the 3 months prior admission (62, 50% vs 38.89%, P=0.030). In patients who developed HAD, clinical presentation of infectious diseases was more severe, as they more frequently presented with fever, desaturation in ambient air, leukocytosis, anemia and hyperlactatemia and had more MDRO infections. The main focus of infection did not show a relevant correlation to HAD. Reinfections occurring during hospital stay were more frequently recorded in HAD patients (31, 25% vs 0%, P=0.004). Incident delirium was associated to HAD (60, 87% vs 39.13%, P=0.016), had a longer duration and was more severe in patients who subsequently developed HAD (mean duration 4.31±1.25 days vs 1.33±0.41, P=0.024; 31, 25% moderate and 18.75% severe forms vs 16, 67% moderate forms; P=0.007). In the HAD group, 3 patients were completely bedridden during hospital stay, while those undergoing exercise or mobilization were 13, on average later than the non-HAD group (mobilization day after admission: 3.92±2.63 vs 2.78±2.49; P=0.31 n. s.). Patients with HAD are less likely to be discharged at home and are more frequently admitted to long-term care facilities and post-acute care (12, 50% and 31, 25% vs 0%, P=0.002). HAD was associated to incident delirium (OR=7.00), frailty (OR=1.71), reinfections (OR=8.52), MDRO bacteria (OR=1.13), dysphagia (OR=2.02), falls (OR=2.62), pressure ulcers (OR=2.43), malnutrition (OR=1.40) dementia (OR=2.02), cardiologic conditions (OR=12.00), chronic kidney disease (OR=3.82). The limited size of the sample, however, implies that further investigations are needed to confirm these results.

**CONCLUSIONS:** Hospital admissions are a major contributor to disability in the elderly, despite resolution of the underlying acute illness. Recognizing risk factors for HAD is crucial to identify individuals at higher risk for developing disability and to define possible preventive actions. Our study suggests that the preservation of functional capacity, mobility, and mental capacities should be the focus of the clinical management of the elderly population during acute hospitalization.

## N. 65

### A TELEMEDICINE PROGRAM IN OLDER PATIENTS ADMITTED TO THE PALLIATIVE CARE UNIT

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**BACKGROUND:** The recent COVID-19 pandemic measures recommend to implement the use of telemedicine programs (TMP) in order to minimize the risk of infections especially in the most vulnerable population.

**AIM:** The aim of this project is to develop a TMP by ensuring continuity of care and, at the same time, reducing exposure to the risk of SARS-CoV-2 infection, in patients admitted to the Palliative Care Unit of the Galliera Hospital in Genova.

**METHODS:** This TMP was addressed to patients with a stabilized pain syndrome or symptomatic framework (Numeric Rating Scale of Pain - NRS >4). The TMP adopted both video systems and/or telephone depending of devices availability and the preferences of patients. The TMP had possibility to switch to "on-site" visit according the individual clinical needs and preferences of patients. All patients underwent a remote comprehensive geriatric assessment (CGA) in order to calculate the Multidimensional Prognostic Index (MPI) according to the previously validated digital-remote TELE-MPI; moreover, pain assessment according to the NRS, clinical interview and vaccination hesitancy were also investigated. TM visits took place according an time-table established according to the individual clinical needs. An evaluation of the degree's satisfaction of the TMP was valuated through a questionnaire using a 5-item Likert scale.

**RESULTS:** Out of a total of 43 patients followed-up by the Palliative Care Unit, 22 patients were included in the full TMP (46.8%); 6 patients were included in a partial TMP (16%) while 15 patients (39%) preferred to be followed-up in presence (39%). The 22 TMP patients included 12 females and 10 males, with a mean age of 73.9 years. 13 patients were affected by non-neoplastic diseases (59%) and 9 were neoplastic patients (41%). 27% patients were classified at low-risk of frailty (TELE-MPI 1 class), 59% of patients were in a moderate class of frailty (TELE-MPI 2 class) and 14% were high risk of frailty patients (TELE-MPI 3 class). All 22 patients had pain symptoms. An average of 6 visits/patient were carried-out. TMP was performed in 41% by video consulting and 59% by telephone call. Six patients concluded the TMP: two patients were in te TELE-MPI 3 class and four patients in the TELE-MPI 2 class. All patients were at least satisfied. 72.7% of patients (16/22) were very or very satisfied (95%CI=49. 8 – 89. 3). No significant differences are observed between patients with and without cancer (P=0.351). Adherence to the vaccination campaign was high (88%). Only one case of SARS-CoV-2 positive was observed in a patient who necessarily continued the visits in Hospital.

**CONCLUSIONS:** TMP seems to be a useful approach to older patients in the Palliative Care setting.

## N. 66

### MORTALITY ATTRIBUTABLE TO COVID-19 IN NURSING HOME RESIDENTS: A RETROSPECTIVE STUDY

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**AIM:** Coronavirus-19 disease (COVID-19) is a widespread condition in nursing home (NH). It is not known whether COVID-19 is associated with a higher risk of death than residents without COVID-19. The aim of this study was to assess whether COVID-19 is associated with a higher mortality rate in NH residents, considering frailty status assessed with the Multidimensional Prognostic Index (MPI).

**METHODS:** In this retrospective study, made in NHs in Venice, Italy, the presence of COVID-19 was ascertained with a nasopharyngeal swab. Frailty was evaluated using the MPI, modified according to the tools commonly used in our NHs. A Cox's regression analysis was used reporting the results as hazard ratios (HRs) with 95% confidence intervals (CIs), using COVID-19 as exposure and mortality as outcome and stratified by MPI tertiles. Similar analyses were run using MPI tertiles as exposure.

**RESULTS:** Overall, 3,946 NH residents (median age=87 years, females: 73.9%) were eligible, with 1,136 COVID-19+. During a median follow-up of 275 days, higher values of MPI, indicating frailer people, were associated with an increased risk of mortality. The incidence of mortality in COVID-19+ was more than doubled than COVID-19- either in MPI-1, MPI-2 and MPI-3 groups. The presence of COVID-19 increased the risk of death (HR=1.85; 95%CI: 1.59-2.15), also in the propensity score model using MPI as confounder (HR=2.48; 95%CI: 2.10-2.93).

**CONCLUSIONS:** In this retrospective study of nursing home residents COVID-19 was associated with a higher risk of all-cause mortality than those not affected by COVID-19 also considering the different grades of frailty.

## N. 67

### MULTIDIMENSIONAL PROGNOSTIC INDEX AND MORTALITY IN INTERMEDIATE CARE FACILITIES DURING PANDEMIC COVID-19: A RETROSPECTIVE STUDY

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**BACKGROUND:** Multidimensional prognostic index (MPI) is a frailty assessment tool widely used for stratifying prognosis in older hospitalized people, but data regarding older people admitted in the intermediate care facilities (ICFs) are lacking. The aim of this study is to evaluate whether MPI can predict mortality in older patients admitted to the ICFs.

**METHODS:** In this retrospective study, including six ICFs, we included older patients aged  $\geq 60$  years admitted for any reason. MPI was calculated using different domains typically explored by a standard comprehensive geriatric assessment (main diagnosis, nursing care needs, cognition, disability, pressure sores risk) and categorized in three groups (MPI-1  $< 0.20$ , MPI 2 0.20-0.34, MPI 3  $> 0.34$ ). A Cox's regression analysis, taking mortality as outcome, was used reporting the results as hazard ratios (HRs) with 95% confidence intervals (CIs).

**RESULTS:** Overall, 653 older patients were enrolled (mean age: 82 years, 59.1% females). Patients in MPI-2 (HR=3.66; 95%CI: 2.45-5.47) and MPI-3 (HR=6.22; 95%CI: 4.22-9.16) experienced a higher risk of mortality, compared to MPI-1. Similar results were present using MPI as increase in 0.10 points (HR=1.43; 95%CI: 1.34-1.52). The accuracy of MPI in predicting mortality was good (Area Under the Curve (AUC)=0.74, 95%CI: 0.70-0.78).

**CONCLUSIONS:** Our study showed that prognostic stratification, as assessed by the MPI, was associated with a significant different risk of mortality in older patients admitted to the ICFs indicating the necessity of using a CGA-based tool for better managing older people, also in this setting.

## N. 68

### FRAILITY AND RISK OF MORTALITY AND HOSPITALIZATION IN NURSING HOME RESIDENTS AFFECTED BY COVID-19

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**PURPOSE:** Coronavirus-19 disease (COVID-19) is a widespread condition in nursing homes (NHs). Frailty is a condition associated with mortality in hospitalized older patients, but no research was made regarding in NH residents during COVID-19 pandemic. The aim of this study was to assess whether frailty, as assessed by the Multidimensional Prognostic Index (MPI) based on a standardized Comprehensive Geriatric Assessment (CGA), can predict mortality and hospitalization in COVID-19 NH residents.

**METHODS:** In this retrospective study, the MPI-SVaMA was developed on information on nine different domains included in the SVaMA (Scheda Valutazione Multidimensionale Anziani), the official CGA tool adopted in Veneto Region, with a score ranging from 0 to 1. A Cox's regression analysis was used reporting the results as hazard ratios (HRs) with 95% confidence intervals (CIs).

**RESULTS:** Overall, 1,146 NH residents resulted affected by COVID-19 were included (mean age: 86 years; 75.4% females). During the follow-up period, we observed 286 deaths (lethality rate=25%) and 239 hospitalizations. Taking those with MPI-SVaMA  $< 0.41$  as reference, an MPI-SVaMA  $> 0.50$  was associated with a significant higher risk of death (HR=1.41; 95%CI: 1.07-1.85). Similar results were obtained by using the MPI-SVaMA score increase in 0.10 points (HR=1.12; 95%CI: 1.03-1.23). Using hospitalization as outcome, only MPI-SVaMA score as continuous variable was associated with this negative outcome (HR=1.08; 95%CI: 1.002-1.17).

**CONCLUSIONS:** Frailty, as assessed by the MPI-SVaMA, was associated with a significant higher risk of mortality and hospitalization in NH residents affected by COVID-19 infection further indicating the necessity of assessing frailty in this population.

## N. 69

### PALLIATIVE CARE IN HOSPITAL: NEEDS ANALYSIS, INTERVENTION PROPOSALS AND INTEGRATION WITH THE TERRITORIAL NETWORK

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**INTRODUCTION:** During their last 6-12 months of life a large number of patients suffering from cancer or non malignant disorders experience worsening of symptoms that causes repeated hospital admissions. In the acute setting the management of palliative care generally lacks appropriate medical decisions, effective communication, advanced care planning and strong link with home palliative care services or Hospice services. At the discharge, unanswered needs can cause inadequate symptom control and higher rate of hospital readmissions. For example during 2017, of the 1865 patients who died in the acute departments of the A. O. U. I. in Verona 24.9% had advanced cancer and 205 had been readmitted several times in their last 3 months of life.

**AIM:** According to the regional council deliberations of Veneto DGR 208/17 and 555/18, the aim of this project is to increase the awareness of palliative care beyond health workers in the acute hospital wards of the A. O. U. I. in Verona, in order to promote a holistic and efficient approach to the patient. Thus effective palliative care will be offered to hospitalised patients by a dedicated team and at the dismissal, patients will be carefully taken in charge by the territorial network with home care or Hospice services.



**STUDY DESIGN:** Starting from the review of the legislation and scientific evidence, the working group, 7 physicians and 2 nurses, will examine how to increase the awareness of the need for palliative care in hospital wards, by identifying critical needs. The project includes the subsequent testing of a Palliative Care Consultation Team (PCCT) composed by a larger group of specialists. The team will take care of two categories of patients: the hospitalised patients in the terminal phase and those with a neoplastic or chronic-degenerative disease who need palliative care and home care services. In the first case the team will support the personnel of the department with direct consultation in the phase of suspension of active treatments, definition of prognosis and treatment targets, analysis of advance directives (D. A. T.), interviews, transfer to a ward with dedicated beds, symptom control and palliative sedation. In the second case, the team will cooperate with other hospital specialists and home care services health workers in the analysis of the needs of the patient and his/her family. The choice of the adequate setting will improve an effective taking charge of the patient. Finally an observational study will be planned to verify the objectives and optimise the actual IT platform that connects the hospital with territorial network.

**OUTCOME INDICATORS:** The aim of the project is to enhance palliative care in order to better assist hospitalised patients experiencing physical and psychological symptoms during terminal phase. The indicators chosen for progress and quality are: the involvement of at least 5 clinic departments, the performance of at least 6 consultations per month by the PCCT, the creation of a computerised system to optimize PCCT intervention management. Compared to 2020, in the selected departments it is expected: an increase of at least 2% in the use of opioids and midazolam, an increase of at least 2% in the number of hospital discharge records coded as V66.7 (palliative care), an increase of at least 5% in the activation of home care palliative care services and a reduction of at least 2% in the 30 days rehospitalization rates. The last indicator is the formal recognition of the PCCT as an official hospital consultation team.

## N. 70

### MULTIDIMENSIONAL PROGNOSTIC INDEX AND THE RISK OF FRACTURES: AN 8-YEAR LONGITUDINAL COHORT STUDY IN THE OSTEOARTHRITIS INITIATIVE

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**BACKGROUND:** Fractures increase risk for disability and poor quality of life in older people. Frailty may be associated with higher fracture risk, but limited research has been carried out using a multidimensional approach to frailty assessment and diagnosis. The present research aimed to investigate whether the multidimensional prognostic index (MPI), based on comprehensive geriatric assessment (CGA), is associated with the risk of fractures in the Osteoarthritis Initiative (OAI) study.

**METHODS:** Community-dwellers affected by knee OA or at high risk for this condition were followed-up for 8 years. A standardized CGA including information on functional, nutritional, mood, comorbidities, medications, quality of life and co-habitation status was used to calculate the MPI. Fractures were diagnosed using self-reported information. Cox's regression analysis was carried out and results are reported as hazard ratios (HRs), with their 95% confidence intervals (CIs), adjusted for potential confounders.

**RESULTS:** The sample consisted of 4.024 individuals (mean age 61.0 years, females=59.0%). People with incident fractures had a significant higher MPI baseline value than those without

( $0.42 \pm 0.18$  vs  $0.40 \pm 0.17$ ). After adjusting for eight potential confounders, people with an MPI over 0.66 (HR=1.71; 95%CI: 1.29-2.28) experienced a higher risk of fractures. An increase in 0.10 point in MPI score corresponded to an increase in fracture risk of 6% (HR=1.06; 95%CI: 1.01-1.11). Higher MPI values were also associated with a higher risk of non-vertebral clinical fractures.

**CONCLUSIONS:** Higher MPI values at baseline were associated with an increased risk of fractures, reinforcing the importance of CGA in predicting fractures in older people.

## N. 71

### THE MAP OF FRAILITY IN OLDER PEOPLE IN DIFFERENT SETTINGS: A COMPARATIVE STUDY OF MULTICENTER STUDIES

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**INTRODUCTION:** Several studies explored the prevalence of frailty in different settings, such as in community dwellers older people or in the hospital; however, it seems difficult comparing the prevalences of frailty in different settings due to the different operationalization tools used in these studies. The comprehensive geriatric assessment (CGA)-based Multidimensional Prognostic Index (MPI) has been validated and successfully used for defining frailty in older people across different settings making this tool useful for mapping the prevalence of frailty in different settings. The aim of the present study is to explore the prevalence of frailty using the same tool, *i.e.*, the MPI and its versions in different settings and describing a frailty map in older adults.

**METHODS:** The CGA-based MPI and its different versions, *i.e.* the MPI-SVaMA, version based on the Multidimensional Evaluation Sheet for Older People to admit older people to nursing home and home care services and the SELFY-MPI (Self-administered version for community-dwelling and general practice older subjects) were applied in several different settings. Subjects have been included in three classes of multidimensional frailty according to previous validated cut-off limits: MPI-1, MPI-2 and MPI-3 grades.

**RESULTS:** Overall, 19.686 older participants, mainly females (=61%) and with a mean age of  $82.6 \pm 7.9$  years (range: 56-107 years) were included across six different settings: i) hospital (H), ii) intermediate care facility (ICF), iii) nursing home (NH), iv) primary care for admission to NH and home care services (PC-NH-HC), v) general practitioners' ambulatory (GP), vi) community-dwelling older people at population level (PL) in seven multicenter studies. The mean values of MPI and the prevalences of moderate/severe frailty, as defined by MPI-2 and MPI-3 groups, were: H= $0.58 \pm 0.2$ , 85.2%; ICF= $0.27 \pm 0.19$ , 70.4%; NH= $0.36 \pm 0.12$ , 70%; PC-NH-HC= $0.44 \pm 0.16$ , 70.2%; GP= $0.25 \pm 0.16$ , 25.6%, PL= $0.20 \pm 0.15$ , 15.7%.

**CONCLUSIONS:** In older people, the prevalence of frailty is significant different across different settings. For the first time we describe a map of prevalence of frailty of older people in different settings by using the MPI as common tool to assess frailty according to a multidimensional approach. These findings could be useful both in clinical and public health in order to adopt interventions of prevention and treatment of frailty across different settings.



**N. 72****PHYSICAL PERFORMANCE MEASURES AND HOSPITAL OUTCOMES AMONG ITALIAN OLDER ADULTS: RESULTS FROM THE CRIME PROJECT**

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**BACKGROUND:** Older adults are a complex population, at risk of adverse events during and after hospital stay. Aim: To investigate the association of walking speed (WS) and grip strength (GS) with adverse outcomes, during and after hospitalization, among older individuals admitted to acute care wards.

**METHODS:** Multicentre observational study including 1123 adults aged  $\geq 65$  years admitted to acute wards in Italy. WS and GS were measured at admission and discharge. Outcomes were length-of-stay, in-hospital mortality, 1-year mortality and rehospitalisation. Length-of-stay was defined as a number of days from admission to discharge/death.

**RESULTS:** Mean age was  $81 \pm 7$  years, 56% were women. Compared to patients with  $WS \geq 0.8$  m/sec, those unable to perform or with  $WS < 0.8$  m/sec had a higher likelihood of longer length-of-stay (OR 2.57; 95% CI 1.63-4.03 and 2.42; 95% CI 1.55-3.79) and 1-year mortality and rehospitalization (OR 1.47.95% CI 1.07-2.01; OR 1.57.95% CI 1.04-2.37); those unable to perform WS had a higher likelihood of in-hospital mortality (OR 9.59; 95% CI 1.23-14.57) and 1-year mortality (OR 2.60; 95% CI 1.37-4.93). Compared to good GS performers, those unable to perform had a higher likelihood of in-hospital mortality (OR 17.43; 95% CI 3.87-28.46), 1-year mortality (OR 3.14; 95% CI 1.37-4.93) and combination of 1-year mortality and rehospitalisation (OR 1.46; 95% CI 1.01-2.12); poor GS performers had a higher likelihood of 1-year mortality (OR 1.39; 95% CI 1.03-2.35); participants unable to perform GS had a lower likelihood of rehospitalisation (OR 0.59; 95% CI 0.39-0.89).

**CONCLUSIONS:** Walking speed (WS) and grip strength (GS) are easy-to-assess predictors of length-of-stay, in-hospital and post-discharge death and should be incorporated in the standard assessment of hospitalized patients.

**N. 73****EFFECT OF A MULTI-COMPONENT NUTRITIONAL SUPPLEMENTATION CONTAINING HMB AND PHYSICAL REHABILITATION IN NURSING HOME RESIDENTS PREVIOUSLY AFFECTED BY COVID-19: AN OBSERVATIONAL STUDY**

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**BACKGROUND:** COVID-19 is a widespread condition in nursing homes. The consequences of COVID-19 may include sarcopenia, bedridden syndrome, and mortality. However, studies

reporting data on the effect of rehabilitation and nutritional supplementation in nursing home residents previously affected by COVID-19 are still underrepresented. Therefore, the aim of this study is to report our experience in nursing home residents previously affected by COVID-19, using a rehabilitative and nutritional supplementation program.

**METHODS:** Nursing home residents in Villa Althea, Venice, Italy previously affected by COVID-19 were enrolled between November 2020 and January 2021 and followed-up for 30 days. To all the participants, a physical rehabilitation program, supervised by trained physiotherapists, and a multi-component nutritional supplementation with a 220 mL drink containing 1.5 g of calcium HMB (Beta-Hydroxy-Beta-Methylbutyrate) and 500 IU of vitamin D3, were administered. The differences between baseline and 30-days evaluation were calculated using a pairwise Student T-test.

**RESULTS:** 28 nursing home residents (mean age:  $87.8 \pm 7.3$  years, 85.7% females) were included. The mean Barthel Index, in terms of activities of daily living ( $53.7 \pm 6.0$  vs  $45.3 \pm 7.9$ ;  $P < 0.0001$ ), mobility ( $38.7 \pm 2.4$  vs  $34.8 \pm 5.3$ ;  $P < 0.0001$ ) and total score ( $92.4 \pm 7.6$  vs  $80.0 \pm 12.3$ ;  $P < 0.0001$ ) significantly improved between the 30-days and the basal evaluation. Similarly, the risk of pressure sores was significantly reduced between the two evaluations ( $9.7 \pm 1.5$  vs  $12.4 \pm 1.3$ ;  $P < 0.0001$ ).

**CONCLUSIONS:** A multi-component nutritional supplementation containing HMB and physical rehabilitation are able to significantly improve disability in very old nursing home residents previously affected by COVID-19, indicating the need to early intervene in these patients for reducing the risk of consequences due to disability and pressure sores.

**N. 74****IMPACT OF THE COVID-19 PANDEMIA ON THE PERCEIVED AGE DISCRIMINATION IN COMMUNITY-DWELLING OLDER PEOPLE: THE PRESTIGE STUDY**

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**INTRODUCTION:** Recent data suggest that the COVID-19 pandemic has exacerbated some forms of discrimination related to the age (ageism) in the older people. The purpose of the present study was to verify whether the COVID-19 pandemic was associated with a change in the perceived age discrimination (PAD), i.e. self-reported ageism, in a sample of community-dwelling older subjects enrolled during the Prestige project.

**METHODS:** At baseline (First phase: December 2019-January 2020), 1337 community-dwelling participants at the Prestige Study, aged 65 years and older, underwent a self-assessment of PAD, measured according to explicit criteria (yes/no), and of multidimensional frailty according to the CGA-based self-administered validated version of the Multidimensional Prognostic Index (SELFY-MPI). Twelve months after (Second phase: October 2020-January 2021) over 450 participants at the first phase of the Prestige Study were contacted by telephone, in

the frame of a tele-health program for older people in order to identify possible changes in the clinical and functional conditions during the COVID-19 pandemic period. During the structured tele-health intervention, information on clinical and functional parameters, drug use, and rate of institutionalization and/or hospitalization were collected. Moreover, information on PAD and multidimensional frailty, according to the telephone-administered validated version of the Multidimensional Prognostic Index (TELE-MPI) was recorded.

**RESULTS:** At baseline, 83 out of 1337 community-dwelling older people (6.2%) reported PAD. At multivariable analyses a significant association between PAD and self-reported frailty (SELFY-MPI) was also observed ( $P < 0.001$ ). After one-year, 217 out of 450 (48.2%) community-dwelling participants were included in the second phase of the study. Overall, 43 out of 217 (19.8%) participants reported PAD. In detail, 35 out of 105 (33.3%) participants classified as MPI 2-3 grades (“moderate and high risk of frailty”) reported PAD and 8 out of 112 (7.1%) participants classified as MPI-1 grade (“low risk of frailty”) declared PAD. Subjects who reported PAD after one-year of COVID-19 pandemic were older ( $P = 0.004$ ) and had a greater degree of frailty both at the baseline (rated by the SELFY-MPI,  $P < 0.001$ ) and at the follow-up (rated by the TELE-MPI,  $P < 0.001$ ). No gender differences were observed between the two groups.

**CONCLUSIONS:** The COVID-19 pandemic increased the self-reported ageism in community-dwelling older people. Higher levels of multidimensional frailty and more advanced age were significantly associated with the increase of self-reported ageism in this population.

## N. 75

### THE ‘ANZIANO E COVID-19’ WEBSITE FORUM: 12 MONTHS OF A SIGOT RESOURCE DEVELOPED TO IMPROVE INTERACTION AMONG PROFESSIONALS, OLDER PEOPLE AND THEIR CAREGIVERS DURING THE COVID-19 PANDEMIC

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**INTRODUCTION:** The “Anziano e COVID-19 Website Forum” was promoted and implemented during the COVID-19

pandemic by the Italian Society of Geriatrics Hospital and Territory (SIGOT) in order to collect and disseminate an appropriate and accurate scientific information to the scientific community, geriatricians, but also for older people, their family and formal and informal caregivers. The aim of the present study was to provide an update on the first year of the “Anziano e COVID-19” Website Forum regarding its contents and its use.

**METHODS:** The overall structure of the Forum was managed by the FORUM’s administrators and an operating staff of expert geriatricians designated by the SIGOT Scientific Director as responsible for the approval and publication process of all information proposed by SIGOT members. The Forum is organized in 10 topical sections regarding: i) scientific papers; ii) health continuing education; iii) institutional guidelines, communication and reports including topics on the COVID-19 vaccination campaign and “Old lives matter” initiative; iv) ongoing studies; v) local organizational and clinical experiences that includes “Telemedicine program for elderly people”; vi) health for older people and their caregivers, vii) cultural and scientific entertainment for citizens, viii) nursing homes, ix) centers for cognitive diseases and dementia, x) interviews and articles by SIGOT members.

**RESULTS:** During its first year, from April 17, 2020 to 20 April 2021, a total of 91 post were published. The “Scientific papers” section was the most updated section (31 scientific articles with the link to the WEB page and its source) followed by “Institutional guidelines, communication and reports” (21 post) and the “interviews and articles by SIGOT members” (13 post) sections. The Forum received over 78.210 views: 28.200 scientific papers section, 12.099 interviews and articles by SIGOT members, 10.783 COVID-19 institutional guidelines area, 6.334 local organizational and clinical experiences, 6.067 centers for cognitive diseases and dementia, 4.908 ongoing studies, 4.642 health continuing education, 2.550 health for older people and their caregivers and 2198 residential care homes.

**CONCLUSIONS:** The “Anziano e COVID-19” Website Forum is keeping to collect and disseminate updated and reliable information for a wide audience: not only the scientific community but also for community dwelling older people and their caregivers involved in the COVID-19 pandemic.

## N. 76

### ‘AGEISM’ IS ASSOCIATED WITH MULTIDIMENSIONAL FRAILTY IN COMMUNITY-DWELLING OLDER SUBJECTS: A POPULATION-BASED STUDY

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**INTRODUCTION:** Ageism is stereotyping, prejudice and discrimination against people based on their age. Ageism may impact the quality of life of older people and the quality of care they receive, a problem that can be even greater if the older person is ‘frail’. However very few studies explored the role of frailty as a factor potentially related to ageism. The aim of this study was to assess the association between perceived age discrimination (PAD), *i.e.* ageism, and frailty in community-

dwelling older adults.

**METHODS:** 1337 community-dwelling subjects over-65 years were asked to fill out a structured questionnaire to collect psycho-socio-economic and behavioural information. Multidimensional frailty was assessed by the Selfy-Multidimensional Prognostic Index Short-Form (Selfy-MPI-SF). PAD over the past five years was assessed based on explicit criteria.

**RESULTS:** 83 out of 1337 participants (6.2%) reported PAD. These subjects were older, more frequently women, with greater economic difficulties, lower level of cultural fruition, social network and psychological well-being, and a greater degree of frailty compared to participants who did not report PAD. After adjustment for age and gender, high grades of multidimensional frailty (Selfy-MPI-SF score) and of negative affectivity (PANAS) were the two only factors significantly 'predictors' of PAD (Selfy-MPI-SF Odds Ratio: 1.19, 95%CI: 1.029-1.370; PANAS negative: Odds Ratio: 1.06, 95%CI: 1.033-1.099).

**CONCLUSIONS:** Frailty and negative affectivity are independently associated with PAD in community-dwelling older people. Interventions to prevent and cure frailty could be useful to reduce ageism and improve the well-being of the older people.

## N. 77

### IMPACT OF THE CHRONIC DISEASE SELF-MANAGEMENT PROGRAMME ON SELF-PERCEIVED FRAILTY CONDITION: THE EU-EFFICHRONIC PROJECT

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**INTRODUCTION:** The Chronic Disease Self-Management Programme (CDSMP) proved to increase self-efficacy and improve health outcomes in people with chronic diseases. In the context of the EFFICHRONIC project, a self-administered version of the Multidimensional Prognostic Index (SELFY-MPI) could help to easily assess frailty condition and to stratify community-dwelling people based on responsiveness to CDSMP intervention. We evaluated the usefulness of CDSMP in improving SELFY-MPI score over 6-month follow-up, identifying potential predictors of better response.

**METHODS:** The SELFY-MPI is a multidimensional tool that explores mobility, basal and instrumental activities of daily living, cognition, nutrition, comorbidities, medications, and socio-economic status. Participants were stratified in three groups according to the 6-month change of SELFY-MPI: those who improved after CDSMP ( $\Delta$ SELFY-MPI<0), those who remained unchanged ( $\Delta$ SELFY-MPI=0), and those who worsened ( $\Delta$ SELFY-MPI >0). Multivariable logistic regression was modeled to identify predictors of SELFY-MPI improvement.

**RESULTS:** We recruited 270 subjects from Italian and French cohort (mean age 61.45 years, females 78.1%). A benefit from CDSMP intervention, in terms of decrease in the SELFY-MPI score, was observed in the 32.6% of participants. Higher probability of experiencing an improvement of SELFY-MPI after CDSMP was found in participants with higher number of comorbidities (1-2 chronic diseases: adjusted odd ratio (aOR)=2.38, 95% confidence interval (CI)=1.01, 5.58;  $\geq 3$  chronic diseases: aOR=3.34, 95% CI=1.25, 8.90 vs no chronic disease), poorer cognitive performance (Test Your Memory (TYM)  $\leq 42$ : aOR=2.41, 95% CI=1.12, 5.19 vs TYM >42) or higher risk of malnutrition (Mini Nutritional Assessment-Short Form (MNA-SF)  $\leq 11$ : aOR=6.11, 95% CI=3.15, 11.83 vs MNA-SF >11).

**CONCLUSIONS:** This longitudinal cohort study supports the hypothesis that the CDSMP intervention contributes to decreasing the self-perceived severity of frailty condition (SELFY-MPI score) in more vulnerable and frail participants with several chronic diseases and lower cognitive performance and nutritional status.



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