

inversely proportional to the number of components of frailty presented by the elderly: the lower the score on the test, greater the number of components present ( $p <0.001$ ). The reduction in walking speed, low physical activity and the reduction of the force components were more prevalent among older adults with cognitive impairment. Conclusions: Cognitive decline was associated with frailty, and the coexistence of these conditions is worrying, since it increases the risk of adverse outcomes, which requires the establishment of preventive interventions for this population.

**P123- FRAILTY AS A CONSEQUENCE OF THE METABOLIC SYNDROME (CASE STUDY OF THE DIABETES MELLITUS TYPE 2).** K.I. Prashchayev<sup>1</sup>, A.N. Ilnitski<sup>1,3</sup>, N.M. Pozdnyakova<sup>1,2</sup>, T.V. Pavlova<sup>2</sup>, V.V. Bashuk<sup>2</sup> (*1. Moscow, Russia; 2. Belgorod, Russia; 3. Belarus*)

Background. In the 21st century, the problem of diabetes mellitus (DM) has acquired a global epidemic related to the population of all countries, nationalities and ages, due to its rapid spread among the population of the world. The information appears about the frailty senile more recently. Russia is one of the most troubled countries in the incidence of the frailty, this syndrome occurs in 84% of elderly and senile age. Therefore, the aim of our study was to examine frailty in association with the metabolic syndrome. Methods. Review of current scientific literature for 2000-2013 years. 68 patients from 28 to 77 years old. Light microscopy, scanning electron microscopy, scanning probe microscopy. Results. DM accelerates the aging process and may give rise to the processes leading to the prefrailty first, and then to the frailty. Elderly patients with diabetes are at risk of malnutrition is much higher compared with healthy elderly. In addition, weight loss is associated with an increased risk of muscle atrophy and decreased muscle strength in the presence of concomitant diseases. Malnutrition is widespread in patients with diabetic nephropathy due to a diet with restriction of protein in combination with vitamin D. This has been established in various studies that in elderly patients with diabetes to reduce the risk of walking speed of 1.87 times higher than in patients without diabetes. In addition, exercise tolerance and physical activity significantly lower in people with diabetes than in people without diabetes. This has been shown by electron microscopy of red blood cells that increase in changed forms of red blood cells occurred with the rise of gravity and severity of polymorbidity, especially in the presence of type 2 diabetes. It must be assumed that these changes may indicate the beginning of the frailty as well. Conclusion. Frailty can be seen as a consequence of the metabolic syndrome on the basis of the above written. Timely diagnosis and proper treatment of the metabolic syndrome will prevent the development of the frailty and prolong the period of active aging and improve the quality of life of elderly patients. Funding. The present study is supported by Belarusian Association of Gerontology and Geriatrics, Belarus and Researching Medical Centre, Moscow, Russia

**P124- HEART RATE COMPLEXITY DOES NOT CHANGE IN FRAILTY SYNDROME.** A.C.M. Takahashi<sup>1</sup>, L.A. Bonjorni<sup>1</sup>, M.S.S. Buto<sup>1</sup>, V.V.B. Carmelo<sup>1</sup>, S.M.A. Rocha<sup>1</sup>, F.H.M. Ribeiro<sup>2</sup>, A. Porta<sup>3</sup>, A.M. Catai<sup>1</sup> (*1. São Carlos, Brazil; 2. Araraquara, Brazil; 3. Milan, Italy*)

Background: Frailty is a distinct geriatric syndrome; it has been described as a clinical state of vulnerability to stress, a result of declining resilience and physiologic reserve associated with aging. Additionally, in the frailty process occurs a critical loss of physiological complexity. Thus, measures for assessing the complexity could contribute to better understanding this syndrome. The aim of this study was evaluate de heart rate variability complexity in 3 groups: frail, pre-frail and non-frail. Methods: one hundred older people (60-94 years old) were divided into three groups (frail, pre-frail and nonfrail) according to the phenotype of frailty. It was analyzed the normalized complexity index (conditional entropy) during short heart period series (256 cardiac beats) derived from ECG recordings, during 10 minutes of rest in supine position. The ANCOVA, adjusted for age and betablocker use, was used in the statistical analysis. Results: Frail group ( $n = 10$ , media age 76 years), pre-frail ( $n=59$ , media age 70 years) and non-frail group ( $n=31$ , media age 68 years) were significantly different in age and betablocker use. The normalized complexity index did not show statistical difference between the frail, pre-frail e non-frail groups (0.81, 0.74, 0.74, respectively) ( $p=0.06$ ). Conclusions: The conditional entropy was not a feasible technique to detect alteration in autonomic control of heart rate in frailty syndrome. Keywords: frailty, aging, homeostasis, complexity, conditional entropy. Funding: The present study is supported by São Paulo Research Foundation (FAPESP) grant 2012/04146-7.

**P125- ANTHROPOMETRIC DESCRIPTION AND ITS CORRELATION WITH HANDGRIP STRENGTH IN OLDER PEOPLE BRAZILIANS.** G.M.S. Tavares<sup>1,2</sup>, V. Manfredini<sup>1</sup>, A.A.C. Gullich<sup>1</sup>, R.N. Fao<sup>1</sup>, J.C.E. Piccoli<sup>1,2</sup>, P.P. Schopf<sup>1</sup>, J. Mezzomo<sup>1</sup>, M.G.V. Gottlieb (*1. Uruguaiana, Brazil; 2. Porto Alegre, Brazil*)

Background: the changes in body composition, for example, increase fat mass and reduced lean body mass during the process of aging, is regarded as a normal event. However, when the loss of lean mass is marked and is associated with decreased muscle strength, causing functional dependency and interfering negatively on quality of life of the elderly, called sarcopenia. Thus, the objective of the study was a description associated with anthropometric and handgrip strength in the elderly. Methods: cross-sectional study. We selected 89 elderly people (31 men and 58 women) of the Public Health Care in Uruguaiana- Rio Grande do Sul, Brazil. The variables evaluated were: body mass index (BMI), circumferences and skinfold thickness, muscle mass (MM), muscle mass index (MMI) and handgrip strength (HGS). For the measurement of MM and IMM we used the

following formulas: MM= height<sup>2</sup> x (0,00744xarm circumference<sup>2</sup> +0,00088 x thigh circumference<sup>2</sup> +0,00441 x calf circumference) 2+2,4x sex-0,048x age+race+78) and MMI= (kg)/height(m)<sup>2</sup>. We performed a correction for subtraction of subcutaneous fat using the formula Cm = Climb  $\pi$ S. Results : The average age of the sample was 67,90  $\pm$  5,90 years. Averages were highlighted BMI (28,68 $\pm$ 5,91 kg), waist (97,24 $\pm$ 12,62 cm), hip (101,45 $\pm$ 10,88 cm), thigh circumference (47,36 $\pm$ 5,36 cm), brachial (30,65 $\pm$ 3,03cm) and calf (30,16 $\pm$ 3,8). The average of MM was 22,95  $\pm$  4,32 and IMM was 9,32 $\pm$ 1,46. The average HGS of the right hand (HGSR) was (22,30  $\pm$  9,44 Kg) and left hand (H GSL) was (22,55  $\pm$  8,65Kg). Correlations were found between MMI and HGSR ( $r = 0,305$ ,  $p = 0,004$ ), calf circumference, HGSR ( $r = 0,266$ ,  $p = 0,012$ ) and H GSL ( $r = 0,338$ ,  $p = 0,001$ ), arm circumference with HGSR ( $r = 0,448$ ,  $p <0,001$ ) and H GSL ( $r = 0,514$ ,  $p <0,0001$ ). Conclusion : The results show that older people are overweight and anthropometric variables are positively correlated with HGS. Funding: The present study is supported by Public notice of the University extension Program (PROEXT MEC 2012) TAVARES GMS; MANFREDINI V; PICCOLI JCE; SCHOPF PP. (PBDA 2013) FÁO RN; SCHOPF PP.

**P126- OCCURRENCE OF SARCOPENIA IN OLDER ADULTS LIVING IN RETIREMENT COMMUNITY.** K.I. Prashchayev<sup>1</sup>, A.N. Ilnitski<sup>1,3</sup>, S.V. Bogat<sup>2</sup>, A.N. Krvitsunov<sup>1</sup>, D.V. Volkov<sup>2</sup>, S.S. Sultanova<sup>1</sup> (*1. Moscow, Russia; 2. Belgorod, Russia; 3. Belarus; 4. St. Petersburg, Russia*)

Background. Sarcopenia is known as general loosing of skeletal muscle mass during of aging. The result of it are developing of health disorders, accompanied by movement function, leading to increase risk of falls, fractures, limiting each person's ability to perform daily self-care activities, disability, loosing of independence and highly risk of death. That is why sarcopenia problem needs scientific evidence and thorough investigation. Methods. Study included 107 old and senile age persons, living in retirement community at Belgorod city, Russian Federation and 56 patients going outpatient treatment at Belgorod city hospital N1. Respondents were aged between 60 and 89, 97 (59,51%) women and 66 (40,49%) men. There were 92 (56,44%) old and 71 (43,56%) senile age patients. Median age was 71,0  $\pm$  2,3. We used EWGSOP (2009) criteries that includes: walking speed definition, dynamometry and muscle mass measurement. Results. In case studies walking speed definition results were divide in following order: 12 (13,04%) old and 19 (26,76%) senile age patients with walking speed below 0.8 meters per sec. Except that walking speed of major patients was normally, dynamometry measures of some elderly persons in relation of all patients in each category, were decreased - 14 (15,22%) - 23 (32,39%) accordingly. Results of muscle mass measurement, finally stage of research, showed total muscle mass decreasing in 11 (78,57%) of old and 21 (91,30%) of senile age patients. In respondents, living in retirement community, sarcopenia were find out in 28 (26,17%) cases against of 12 (21,43%) outpatient once. Finally 15 (22,1%) of old and 25 (35,21%) of senile age patients suffered from sarcopenia. Conclusion. Therefore, our study shows that sarcopenia is common condition among the older adults, especially specific to retirement communities, increasing accordingly to aging. For better results in researching of methods sarcopenia prophylactics and treatment it is necessary to create step-by-step diagnostic algorithm for it immediately and early on identification not only in retirement communities, but also in general population. Funding. The present study is supported by Belarusian Association of Gerontology and Geriatrics, Belarus and Researching Medical Centre, Moscow, Russia

**P127- SARCOPENIC OBESITY IN BRAZILIAN OLDER ADULTS OF DIFFERENT COHORT: SABE SURVEY- HEALTH, WELL-BEING AND AGING.** L.S. Ferreira<sup>1</sup>, M.F.A. Roediger<sup>2</sup>, D. Bueno<sup>2</sup>, L.A. Gobbo<sup>2</sup>, Y.A.O. Duarte<sup>2</sup>, M.L. Lebrão<sup>2</sup>, M.F.N. Marucci<sup>2</sup> (*Rio de Janeiro, Brazil; 2. São Paulo, Brazil*)

Background and objective: It is clinically relevant to know the magnitude of sarcopenic obesity (SO) in the "new" generation of older adults of the developing countries that experience fast population aging and the obesity epidemic to support the planning of preventive actions. The aim of this study was to estimate the prevalence of SO in Brazilian older adults of different cohort, participants of the SABE Survey. Methods: SABE Survey: Health, Well-Being and Aging is a longitudinal, epidemiological and household survey held in the city of São Paulo, Brazil, with older adults ( $\geq 60$ ), selected by probabilistic sample. Individuals that completed 60-65y in the years 2000, 2006 e 2011 (born in 1935/1940, 1941/1946 and 1947/1951, respectively) were included in this study. Sarcopenia was identified according to the adapted version of The European Working Group on Sarcopenia in Older People (EWGSOP), which considers three components, according to sex: chair rising capacity (time  $\geq 75$  percentile), handgrip strength ( $\leq 25$  percentile, according to body mass index) and muscle mass index ( $\leq 20$ th percentile), considering the percentile of this study population. The obesity was diagnosed by waist circumference ( $\geq 80$ cm for women and  $\geq 94$ cm for men). We calculated prevalence rates of SO for each generation of older adults. Results: Considering the sample as representative of the city of São Paulo, Brazil, the prevalence of SO 0.3% in older adults born in 1935/1940, being all women, increased to 4.2% (all women) and 4.7% (men = 2.7%; women = 2.0%) in older adults born in 1941/1946 and 1947/1951, respectively. Conclusion: The prevalence of SO was different between the Brazilian older adults of different cohort. Although the prevalence of SO was low, it increased with each new generation of older adults, suggesting a growing trend of this syndrome in Brazil. Funding: The present study is supported by FAPESP - Foundation for Research Support of the State of São Paulo.