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Background: In our population the prevalence of hypovitaminosis D is high. A recent cross-sectional observational study conducted in Spain shows that 63% of postmenopausal women who receive osteoporosis (OP) therapy and 76% who do not receive treatment had 25 (OH) D levels below 30 ng / mL.

The latest studies show a relationship between hypovitaminosis D and the development of systemic inflammatory and tumor diseases, determined by the presence of receptors in various tissues, including breast.

Objectives: To determine which levels of serum 25 (OH) D, and secondarily calcium, phosphorus, PTH and CTX, present 200 patients diagnosed with breast cancer and taking hormonal treatment, referred to a monographic OP consultation of a tertiary hospital for the assessment of their bone metabolism, and if these values differ from what is expected for the general population.

Methods: Retrospective cross-sectional study of 200 women diagnosed with breast cancer receiving treatment with aromatase inhibitors (AI), performed in a tertiary hospital. Blood levels of vitamin D, calcium, phosphorus, PTH and CTX have been collected, as well as other variables and risk factors.

Results: 200 patients with a mean age of 64.8 years and an ED of 9.5 were collected. The median is 64.5 (Q1 58 and Q3 72).

The vitamin D levels presented by the study patients were <10ng/mL in 13 patients (6.67%), 11-20ng/mL in 50 (25.64%), 21-30ng/mL in 68 (34.87%), 31-70ng/mL in 62 (31.79%), and > 70ng/mL in 2 (1.03%). This implies that in 67.18% of the patients they had values below the optimal range.

92.31% of patients (180) presented PTH values within the normal range and only 7.69% presented values above normal.

The serum calcium and phosphorus levels of the patients selected for the study had ranges within normal (99.49%) except 1 case that presented high values (0.51%) for both.

The values of CTX (carboxyterminal telopeptide used as a marker of bone resorption) were in the normal range in 81.96% of patients (159), low values in 0.52% (1) and values above the normal range by 17.53% (34).

Conclusion: The prevalence of insufficient levels of vitamin D in our study (Breast cancer + AI) is not greater than that estimated for the general population according to various studies.

Our study found that 67.18% of patients (2/3 of the selected population) had values below those considered optimal (<30 ng / mL) and 32% had values <20. Only 7.69% of the patients presented PTH values above the normal range.

In 82% of patients, CTX used as a marker of bone resorption had normal values.

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AB0907 BONE METABOLISM ASSESSMENT IN PATIENTS WITH RECENT DIAGNOSIS OF GIANT CELL ARTERITIS

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Background: There are several studies assessing bone mass and osteoporosis (OP) development of patients with giant cell arteritis (GCA) during glucocorticoid treatment, however data at time of diagnosis is scarce.

Objectives: To analyze bone metabolism, bone mineral density (BMD) and trabecular microarchitecture by measuring trabecular bone score (TBS) in patients with recent diagnosis of GCA.

Methods: Retrospective observational study in which we included all patients with GCA and bone metabolism assessment at diagnosis. We recorded: risk factors for OP (previous fractures and anti-OP treatments), bone metabolism (calcium, phosphate, PTH, 25-vitaminD [25-OHD]) and the DXA results (Lunar, DPX) at the time of diagnosis and during the follow-up. The statistic analysis was made with SPSS.

Results: 36 patients (27 W: 9M) with a mean age of 76±9 years were included. The clinical characteristics of the GCA at diagnoses were: headache (81%), constitutional syndrome (58%), allodynia (42%), visual loss (42%, binocular in 2 patients), jaw claudication (39%), polymyalgic syndrome (28%), amaurosis fugax (25%) and lingular necrosis (n=1, 3%). Additional diagnosis tests included: temporal biopsy (86%, being pathologic in 55%), temporal ultrasound (97%, pathologic 34%), extra-cranial arteries ultrasound (81%, pathologic 7%) and PET/CT (19%, pathologic 86%). Up to 61% received three methylprednisolone bolus (mean dose 1700mg). 7 patients (19%) had previous OP and 3 had already suffered a

fragility fracture (Colles, vertebral and femur). Only 4 patients were receiving anti-OP treatment (2 oral bisphosphonate, 2 zoledronate).

At time of diagnosis of GCA, the mean of 25OHD was 17±13ng/mL (88%, <30). BMD showed low bone mass in 80% of patients (47% with OP, 33% osteopenia). The mean TBS was 1.026±0.098 and up to 38% showed poor bone microarchitecture [values <1.23]. No significant differences were observed between patients with or without TBS <1.23. Up to 94% of patients received anti-OP treatment (26 zoledronate, 6 oral bisphosphonate, 1 denosumab, 1 teriparatide). 3 patients had incidental fractures during the follow-up, however no relation was found with BMD or TBS.

Conclusion: Low bone mass and vitamin D insufficiency are frequent in patients with recent diagnoses of GCA and up to 38% have poor bone microarchitecture at baseline. Thus, it's important to perform a bone mass assessment in all patients with recent diagnose of ACG and initiate therapeutic or preventive anti-OP treatment if required.

Disclosure of Interests: None declared

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AB0908 ASSESSMENT OF THE IMPACT OF THE LEAN MASS WITH BODY COMPOSITION BY DUAL-ENERGY X-RAY ABSORPTIOMETRY ON THE BONE MINERAL DENSITY

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Background: Lean mass, mainly composed of muscle, has been correlated to bone mineral density (BMD) [4]. Studies reported that lean mass has an important impact on BMD not only in young women but also in postmenopausal women [1]. High lean mass is more favorable for the BMD than low lean mass. Some studies suggested that genetic factors responsible for both lean mass and BMD are shared [3]. Low muscle mass and low BMD could impair the quality of the patient's life [2, 5].

Objectives: The aim of this study is to assess the impact of the lean mass with body composition by dual-energy X-ray absorptiometry on the bone mineral density.

Methods: 107 women underwent body composition analysis by dual-energy X-ray absorptiometry (DXA). Lean mass in kg and BMD in kg/cm² were analyzed. Normal BMD was defined as T-score > -1.0 standard deviation (SD). Osteopenia was defined as T-score between -1.0 SDs and -2.5 SDs and osteoporosis was defined as T-score ≤ -2.5 SDs.

Results: The mean age of the women was 57 years (yrs.) ± 11 yrs. (range 41 yrs. – 80 yrs.). Subjects had mean weight of 75kg ± 12kg (range 50kg – 110kg) and mean height of 156cm ± 9cm (range 151cm – 172cm). 73/107 women (68.2%) were with normal BMD, 24/107 women (22.4%) were with osteopenia and 10/107 women (9.4%) were with osteoporosis. Lean mass differed significantly between the groups (p = 0.000). Women with normal BMD had the highest mean lean mass (58.47kg) and the mean lean mass of the women with osteopenia and osteoporosis decreased as follow: 47.56kg for women with osteopenia and 36.22kg for women with osteoporosis.

Conclusion: Women with osteoporosis have the lowest lean mass compared to the women with osteopenia and osteoporosis.

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AB0909 TREATMENT WITH DENOSUMAB IN GLUCOCORTICOSTEROID-INDUCED OSTEOPOROSIS IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Glucocorticosteroids (GCS) are widely used in the treatment of rheumatoid arthritis (RA) as bridge-therapy. Though, according to last recommendations for the treatment of RA GCS should be considered in short-term and different dose regimens and routes of administration and should be tapered as rapidly as clinically feasible. But in some cases, patients received GCS for a long period in low doses (<7.5mg/day prednisone equivalent). It is well known, that long-term GCS use is associated with osteoporosis and increased risk of fracture, even at low daily doses. On the other hand, RA itself leads to the changes in the biomechanical properties of bones through the increased production of pro-inflammatory cytokines. Furthermore, immobilization due to pain from inflamed joints and impairment of physical activity are in response for osteoporosis formation. In addition, patients with RA are often co-prescribed a proton pump inhibitor, which have a reported effect on occurrence of osteoporosis. Taking into consideration all mentioned above patients with RA, receiving GCS therapy reveal high risk for osteoporosis and fracture formation and require corresponding treatment.

Objectives: The aim of this study is to evaluate the effect of 12 months treatment with denosumab (bone-modifying agent) in patients with RA, continuing to receive GCS.

Methods: 50 female patients with RA (mean age 54 ± 6.3 years) were enrolled in this study. Duration of RA was 10.5 ± 3.2 years. All patients received prednisone 15.3 ± 10.25 mg/day with gradually escalation of dose for ≥ 12 months. As DMARD therapy patients received methotrexate dose in average 15-20mg/week (75%), leflunomide 20mg/day (25%). Bone mineral density (BMD) is measured in all patients by Dual-energy X-ray absorptiometry (DEXA) at baseline and 12 months after treatment with denosumab. All patients received denosumab 60 mg subcutaneously once every 6 months.

Results: The measurement of BMD at baseline revealed the following results: T-score in lumbar spine was -1.95 ± 1.36 and in total hip -1.64 ± 0.94 with high major osteoporotic fracture risk. All patients completed the study. The BMD after 12 months significantly increased both in lumbar spine $+4.2\%$ ($p < 0.001$) and in total hip $+2.1\%$ ($p < 0.001$).

Conclusion: Denosumab should be considered as a drug of choice in RA patients, continuing to receive GCS. Further large investigations are needed to assess the BMD after discontinuation of denosumab and evaluate fracture risk in this population of patient.

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AB0910 SARCOPENIA AND BONE MINERAL DENSITY IN MEN WITH CORONARY HEART DISEASE

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Objectives: To examine bone mineral density (BMD) in men with coronary heart disease (CHD), depending on the state of the muscle mass, strength and function.

Methods: 79 men aged over 50 years with verified CHD were examined (mean age 63 (57; 66) years).

The BMD and T-criterion (standart deviation, SD) of the femoral neck and lumbar spine (L1-L4) were evaluated using dual-energy x-ray absorptiometry (DXA) on the Lunar Prodigy Primo bone densitometer (USA). The following reference intervals were used: normal BMD values (T-criterion ≥ -1), osteopenia (OPe) (T-criterion from -1 to -2.5), and osteoporosis (OP) (T-criterion < -2.5).

To assess muscle mass, the total area (cm^2) of the lumbar muscles of the axial section at the level of the 3rd lumbar vertebra (L3) was determined using multi-spiral computed tomography on a 64-slice computer tomograph "Somatom Sensation 64" (Siemens AG Medical Solution, Germany). The ratio of the obtained index of the area of skeletal muscle to the square of the patient's growth index determined the "skeletal muscular index L3" (SMI). The media considered the threshold value to be $52.4 \text{ cm}^2/\text{m}^2$.

Results: The femoral neck BMD in the examined patients was 0.96 (0.89 ; 1.03) g/cm^2 , which corresponds to -0.50 (-1.00 ; 0) SD according to the T-criterion, in the lumbar spine -1.23 (1.11 ; 1.32) g/cm^2 and 0.4 (-0.50 ; 1.20) SD according to the T-criterion.

In accordance with the recommendations of the European working group on sarcopenia in Older people (EWGSOP, 2010, 2018), the patients were divided

into 3 groups: 31 patients without sarcopenia (group 1), 21 patients with isolated muscle loss (presarcopenia) (group 2) and 27 patients with sarcopenia (group 3). BMD in the femoral neck in the group of patients without sarcopenia was 0.96 (0.72 ; 1.26) g/cm^2 , which corresponds to -0.50 (-0.8 ; 0.2) SD according to the T-criterion, in the lumbar spine -1.19 (1.10 ; 1.275) g/cm^2 and 0.1 (-0.6 ; 0.8) SD according to the T-criterion. BMD in the femoral neck in the group of patients with presarcopenia (group 2) -0.995 (0.94 ; 1.04) g/cm^2 and -0.3 (-0.70 ; 0) SD according to the T-criterion, in the lumbar spine -1.32 (1.24 ; 1.40) g/cm^2 and 1.20 (0.50 ; 1.90) SD according to the T-criterion. In patients with established sarcopenia (group 3), the following indicators of BMD and T-criterion were recorded: 0.95 (0.845 ; 0.98) g/cm^2 and -0.60 (-1.40 ; -0.40) SD and 1.23 (0.085 ; 1.31) g/cm^2 and 0.4 (-0.8 ; 1.1) SD in the femoral neck and lumbar spine, respectively.

A comparative analysis of the results of the DXA found that patients with sarcopenia had a significant decrease in the BMD and T-criterion in the femoral neck compared to patients with presarcopenia ($p=0.039$ and $p=0.040$, respectively). There were no differences between the groups of patients without sarcopenia and with sarcopenia and presarcopenia ($p>0.05$).

It was found that patients with sarcopenia had significantly lower BMD and T-criterion in the lumbar spine compared to patients with presarcopenia ($p=0.017$ and $p=0.0165$, respectively). The values of the BMD and T-criterion in the groups of patients without sarcopenia and with presarcopenia and sarcopenia in the lumbar spine were comparable ($p>0.05$).

Conclusion: The presence of sarcopenia is associated with loss of BMD in the femoral neck and in the lumbar spine. The results obtained confirm the high probability of common pathogenetic links between OP and sarcopenia.

Disclosure of Interests: None declared

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AB0911 PREVALENCE AND RISK FACTORS OF HIP FRACTURE ASSOCIATED WITH OSTEOPOROSIS IN A GERIATRIC POPULATION FROM COLOMBIAN NORTH EAST.

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Background: Hip fracture is a frequent cause of hospital admission in older adults.¹ The prevalence of hip fracture associated with osteoporosis in the elderly is 18% in women and 6% in men.² Likewise, the attention of this event requires an approximate value of 2,943 dollars, which represents an average of 18,95% of the per capita income of most countries.³ It is also established that appropriate and timely treatment of osteoporosis can prevent the appearance of fractures.⁴

Objectives: The aim of this study was to determine the prevalence of hip fracture associated with osteoporosis, as well as the associated factors to its presentation in a geriatric population in Colombia.

Methods: Cross-sectional study that included 130 patients over 65 years old, who consulted the University Hospital of Santander with hip fracture. The main variable of exposition was the medical history of osteoporosis. Descriptive analysis was performed with absolute and relative frequency measurements for the qualitative variables and central tendency measures and dispersion according to the distribution of the variables. Subsequently, the bivariate logistic regression analysis was performed to identify the associated risk variables. The analysis was performed with the Stata 12.0 Software.

Results: From the 130 patients included in the study, 33.85% corresponded to the male gender. The average age was 82.49 years with a DS of 8.35 years. The median length of hospital stay was 17.5 days with an interquartile range of 11 to 26 days. The most common comorbidity was hypertension in 65.38%, followed by diabetes and COPD in 21.54%, heart failure in 19.23% and chronic kidney disease in 17.69%. The median Charlson score was 5 with an interquartile range between 4 and 6 points. 13.85% of the patients admitted had concomitant osteoporosis, 77.7% of them were women and 8.46% of them had severe osteoporosis, with history of prior fracture, without treatment. In the bivariate analysis, an association was found between having COPD (OR: 4.89, 95% CI 1.71-13.95, $p = 0.003$), dementia (OR: 3.20, 95% CI 1.05-19.56, $p = 0.044$), malnutrition (OR: 3.42, IC95 % 1.10 - 10.60, $p = 0.032$), and osteoporosis associated with hip fracture at hospital admission. Likewise, a greater probability was found for the development of in-hospital pneumonia (OR: 2.48, 95% CI 1.14 - 7.98, $p = 0.04$) in patients with osteoporosis compared to those who did not have bone disease.

Conclusion: 13.85% of patients who entered due to hip fracture had osteoporosis as comorbidity, data comparable to that previously reported. Variables associated with the presence of osteoporosis at admission in patients with hip fracture were found like history of COPD, dementia, and malnutrition, which makes it likely that those patients with pathologies that decrease physical activity or food intake can impact in an important way the appearance of osteoporosis. One of the most important contributions of this study