Hospital, Rheumatology, Bilbao, Spain; ²Basurto University Hospital, Investigation, Bilbao, Spain

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.

References:

- [1] Quesada Gomez JM, Díaz Curiel M, Sosa Henríquez M, Malouf-Sierra J, Nogués-Solan X, Gómez-Alonso C, et al. Low calcium intake and insufficient serum vitamin D status in treated and non-treated postmenopausal osteoporotic women in Spain. *J Steroid Biochem Mol Biol.* 2013;136:175-7.
- [2] Jian Sun et al., Vitamin D receptor expression in peripheral blood mononuclear cells is inversely associated with disease activity and inflammation in lupus patients; *Clinical Rheumatology* (2019) 38:2509–2518

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.5595

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

A. Nack¹, I. Casafont-Solé¹, L. Mateo¹, S. Holgado Pérez¹, M. Martínez-Morillo¹, M. Aparicio Espinar¹, A. Riveros¹, C. Sanguesa¹, Á. Prior-Español¹, M. Aparicio Rovira¹, A. Olive¹, L. Gifre¹. ¹Hospital Germans Trias i Pujol, Badalona, Spain

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

DOI: 10.1136/annrheumdis-2020-eular.3047

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

M. Nikolov¹, N. Nikolov¹. ¹UMBAL Dr Georgi Stranski, Pleven, Bulgaria

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.

References:

- [1] Ilesanmi-Oyelere BL, Coad J, Roy N, Kruger MC. Lean Body Mass in the Prediction of Bone Mineral Density in Postmenopausal Women. *Biores Open Access.* 2018;7(1):150–158. Published 2018 Oct 10. doi:10.1089/biores.2018.0025.
- [2] Kirilov N., Vladeva SG, Kirilova E. Assessment on the Improvement of the Quality of Life after One Year of Regular Physical Activity and Treatment in Patients with Postmenopausal OsteoporosisCOR 2017: 19th International Conference on Orthopedics and Rheumatology Miami, USA March 9 - 10, 2017, WASET, Paper Code 17US030051.
- [3] Nguyen TV, Howard GM, Kelly PJ, Eisman JA. Bone mass, lean mass, and fat mass: same genes or same environments? *Am J Epidemiol.* 1998 Jan 1;147(1):3-16.
- [4] Patel HP, Dawson A, Westbury LD, et al. Muscle Mass, Muscle Morphology and Bone Health Among Community-Dwelling Older Men: Findings from the Hertfordshire Sarcopenia Study (HSS). *Calcif Tissue Int.* 2018;103(1):35–43. doi:10.1007/s00223-018-0388-2.
- [5] Kirilova E, Kirilov N, Vladeva S. A study on the physical activity in women with decreased bone mineral density. Abstract book 13th science conference MC, Pleven

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.4525

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

M. Osipyan¹, M. Efraimidou², S. Bazeyan², A. Antikyan², V. Vardanyan², K. Ginosyan¹. ¹Yerevan State Medical University, Rheumatology, Yerevan, Armenia; ²Yerevan State Medical University, Yerevan, Armenia