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 doses according to the indication and should be tapered as rapidly as clinically feasible. But in some cases, patients received GCS for a long period in low doses (<75mg/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 ± 3.6 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 meetoxetate 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 60mg subcutaneously once every 6 months.

Results: The measurement of BMD at baseline revealed the following results: T-score in lumbar spine -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.

References:

Disclosure of Interests: None declared

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AB09010

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 (standard deviation, SD) of the femoral neck and lumbar spine (L1-L4) were evaluated using dual-energy X-ray absorptiometry (DEXA) 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 (cm²) of the lumbar muscles of the axial section at the level of the 3rd lumbar vertebra (L3) was determined using multispectral 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 cm²/m².

Results: The femoral neck BMD in the examined patients was 0.96 (0.89; 1.03) g/cm², 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/cm² 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/cm², which corresponds to -0.50 (-0.8; 0.2) SD according to the T-criterion.

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 pathogenic links between OP and sarcopenia.

Disclosure of Interests: None declared

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is the identification of in-hospital complication (pneumonia), which should be actively monitored in these patients.

**References:**


**Discussion of Interests:** None declared

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**AB0912**

**CLINICAL UTILITY OF THE WARD TRIANGLE OF HIP BONE DENSITOMETRY: DATA FROM AN FLS UNIT**

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**Objectives:** To evaluate the clinical utility of Ward’s triangle (W) of bone densitometry (BMD) of the hip in a population of postmenopausal women referred to BMD from a FLS Unit coordinated by Rheumatology (FLS-REU).

**Methods:** Retrospective study, which includes, after informed consent, postmenopausal women referred by any department of specialized medicine or primary care medicine, of the health department, to the FLS-REU Unit of our center, during the period of February 2010 to October 2019. General patient data were collected (age, gender), and risk factors for OP. BMD of the lumbar spine (CL) and hip (femoral neck, total hip) and W was performed, except if there was lumbar surgery, severe scoliosis, or a bilateral hip prosthesis. The BMD outcome was distributed in normal (T index [Ts] to -1 SD), osteopenia of the lumbar spine (CL) and hip (femoral neck, total hip and W) was performed, of the univariate analysis are described in Table 1 below. The table shows the BMD results of W and CL, the correlation coefficient between them being 0.52 (0.50, P <0.001), although with a Kappa coefficient of mild-moderate OP and 967 (49%), severe OP.

**Results:** 5,740 postmenopausal women referred for BMD are included, with the W result available (Table 1). The result of the mean Ts (SD) was: in CL: -1.49 (1.48) SD, femoral neck: -1.33 (1.11) SD and in W: -2.05 (1.12) SD. In 947 (16%) women, the W was normal, with a mean Ts: -0.28 (1.12) SD; osteopenia in 2,606 (49%) SD, femoral neck: -1.33 (1.12) SD and in W: -2.05 (1.12) SD. In 947 (16%) women, the W was normal, with a mean Ts: -0.28 (1.12) SD; osteopenia in 2,606 (49%), severe OP.

The table shows the BMD results of W and CL, the correlation coefficient between them being 0.52 (0.50, P <0.001), although with a Kappa coefficient of 0.26 (0.24-0.28. P = 0). The probability that a result in W of normal BMD is normal, also in CL is 73% (70% -76%), in osteopenia in both: 47% (45% -49%) and for osteoporosis in CL is -1.85 SD (sensitivity: 0.648, specificity: 0.649, with AUC: 0.899, 0.912, 0.949, 0.928). The widely used FRAX tool uses femoral neck (FN) BMD, amongst other parameters, to predict fracture risk. In those with normal BMD, data is lacking on the weight these other parameters hold in predicting future risk. Indeed, FN BMD can be facultative in the estimation of risk when using FRAX.

**Conclusion:** To establish predictors of fragility fracture in a patient cohort referred for BMD estimation, subsequently found to have bilateral FN BMD of greater than 1.

**Methods:** A cohort of patients in the North West of England referred between 2004 and 2014 for BMD estimation, with both left and right FN BMD of greater than 1 were identified, and patient parameters identified and analysed included age at scan, gender, BMD at left hip, body mass index (BMI), fat mass, family history of fracture, alcohol history of 3 or more units per day, smoking status, rheumatoid arthritis (RA), and steroid exposure. Patients with fragility fracture were compared with those without fracture. Chi-square test and T test were applied to categorical and continuous data respectively. Further univariate and multivariate logistic regression models were fitted to determine parameters associated with future fracture risk.

**Results:** 619 patients with bilateral FN BMD of greater than 1 identified and included in analysis. Mean age at scan was 54 years (SD 11.82) and 542 (87.56%) were female. 92 (14.86%) patients had a fragility fracture. Mean left FN BMD was 1.91 (SD 0.71), and mean right FN BMD was 1.92 (SD 0.68). Results of the univariate analysis are described in Table 1 below.

**Table 1.** Logistic regression analysis of patient parameters with unadjusted and adjusted odds ratios for fracture fragility

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Unadjusted odds ratio (95% CI)</th>
<th>Odds ratio adjusted for age and gender (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at scan (years)</td>
<td>1.16 (0.47, 2.86)</td>
<td>1.15 (0.47, 2.87)</td>
</tr>
<tr>
<td>Gender</td>
<td>1.03 (0.32, 3.19)</td>
<td>1.02 (0.32, 3.20)</td>
</tr>
<tr>
<td>Steroid exposure</td>
<td>1.07 (0.32, 3.19)</td>
<td>1.06 (0.32, 3.20)</td>
</tr>
<tr>
<td>Rheumatoid arthritis</td>
<td>0.83 (0.32, 2.19)</td>
<td>0.83 (0.32, 2.22)</td>
</tr>
<tr>
<td>Current smoker</td>
<td>0.90 (0.30, 0.36)</td>
<td>0.90 (0.30, 0.38)</td>
</tr>
<tr>
<td>Alcohol (3 or more units/day)</td>
<td>1.14 (0.47, 2.86)</td>
<td>1.14 (0.47, 2.89)</td>
</tr>
</tbody>
</table>

**Conclusion:** Steroid exposure and body composition parameters influence fracture risk in this group of patients with normal BMD, further work will be done looking at the types of fractures and other parameters in this group of patients.

**Disclosure of Interests:** None declared.

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**AB0914**

**BONE LOSS AND NEW FRACTURES WITH DENOSUMAB TREATMENT**

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