**AB0008**

**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 standard deviation (SD). Osteopenia was defined as T-score between -1 SD and -2.5 SDs and osteoporosis was defined as T-score ≤ -2.5 SDs.

**Results:** The mean age of the women was 57 years (± 11 years, range 41 yrs. – 80 yrs.). Subjects had mean weight of 75 kg (± 12kg) and mean height of 156 cm ± 9 cm (range 151 cm – 172 cm). 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 (58.47 kg) and the mean lean mass of the women with osteopenia and osteoporosis decreased as follow: 47.56 kg for women with osteopenia and 36.22 kg for women with osteoporosis.

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

**References:**


**Disclosure of Interests:** None declared

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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 doses for disease management 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 ± 6.3 years) were enrolled in this study. Duration of RA was 10.5 ± 3.2 years. All patients received prednisone 15.3±10.25mg/day with gradually escalating dose of for ≥12 months. As DAMARD therapy patients received metformate dose in average 15-20mg/kg/week (75%), letrozol 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 was -1.95 ± 1.36 and in total hip -1.64±0.94 with high major osteoporosis 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 patients.

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