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AbstractBook

## P699

### ROLE OF ANGIOPOIETIN-LIKE PROTEINS TYPES 3 AND 4 IN PREDICTING AXIAL FRACTURE RISK IN PATIENTS WITH RHEUMATOID ARTHRITIS

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**Objective:** Early detection of osteoporosis signs in rheumatoid arthritis (RA) patients at increased risk of osteoporotic fractures presents an opportunity for timely lifestyle adjustments or prescription of drug therapy, which positively affects both the cost effectiveness of treatment and the quality of life of patients. This study aimed to investigate the role of ANGPTL types 3 and 4 in predicting the risk of fractures on axial support areas (lumbar vertebrae and femoral neck) in patients with rheumatoid arthritis.

**Methods:** 88 patients with reliable RA (mean age, 54.19±11.97 y, and duration of disease, 11.21±8.65 y) were included in the study. To determine ANGPTL4 in serum, we used the RayBio Human ANGPTL4 ELISA Kit test system (RayBiotech, USA), for ANGPTL3 determination - test system Human Angiopoietin-like Protein 3 ELISA (Bio Vendor, Czech Republic). All RA patients underwent osteodensitometry (Lunar DPX, GE, USA) with estimation of BMD.

**Results:** Significant positive correlation was found between the level of ANGPTL3 and the presence of osteoporosis (r=0.36, p=0.039) and between ANGPTL4 and the presence of osteopenia (r=0.44, p=0.028). There was evidence of a close association between ANGPTL3 and osteoporotic changes in the femoral neck ($BMD_{Total}$, r=-0.33, p=0.042; $BMD_{Troch}$, r=-0.36, p=0.038; $BMD_{Wards}$, r=-0.44, p=0.009), and ANGPTL4 and osteoporotic changes in the spine ($BMD_{L1-L4}$, r=-0.37, p=0.025). It was found that patients with elevated levels of ANGPTL3 (more than 445 ng/mL) had osteoporotic fractures in the femoral neck in 33.8% of cases, while those with decreased levels (less than 248 ng/mL) had 5.9% ($\chi^2$=5.257, p=0.022). In the group of RA patients with elevated levels of APPB4 (>3 SD), osteoporotic fractures in the spine were also observed in a higher percentage of cases ($\chi^2$=4.93, p=0.04).

**Conclusion:** Presumably the determination of angiopoietin-like proteins types 3 and 4 can be used in isolation to diagnose osteoporosis in RA patients at an earlier stage, contributing to independent and accurate prediction of fracture risk by axial support areas.

## P700

### OSTEOPOROSIS AND CARDIOVASCULAR DISEASE RISK SCORES IN THE ELDERLY POPULATION: RESULTS FROM BUSHEHR ELDERLY HEALTH (BEH) PROGRAM

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**Objective:** Previous research suggests BMD might be an independent predictor of cardiovascular disease (CVD) risk. This study aimed to investigate the correlation between BMD and well known CVD risk scores in the elderly population.

**Methods:** We used the data from the 2nd phase of the BEH program. BMD was measured using DXA method. The CVD risks were estimated for all participants using the original coefficients and variables provided by the ACC/AHA Pooled Cohort Equations CV Risk. Considering the nonnormal distribution of CVD risks, nonparametric tests were used. Spearman rank test was applied to assess the correlation between CVD scores and BMD in different sites including femoral neck, and spine. The estimated risks were compared in participants with and without osteoporosis.

**Results:** A total of 2405 participants (1160 men) with a mean age of 69.3 (±6.4) y were included. ACC/AHA risk score showed a significant negative correlation with the femoral neck t-score in both men (Spearman's rho: -0.147, p-value: <0.001) and women (Spearman's rho: -0.269, p-value: <0.001). In women, a significant negative correlation was detected with the spinal t-score (Spearman's rho: -0.123, p-value: <0.001). The comparison of CVD risks in the osteoporotic and non-osteoporotic population are provided in Table. In all, individuals with both femoral neck and spinal osteoporosis showed a higher CVD risk than the non-osteoporotic population.

**Conclusion:** The results showed a significant correlation between the femoral neck and spinal t-scores with the ACC/AHA CVD risk score. The median risk scores of CVD were significantly higher in individuals with osteoporosis in different sites in both men and women.