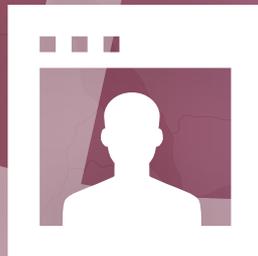


WORLD CONGRESS  
ON OSTEOPOROSIS,  
OSTEOARTHRITIS AND  
MUSCULOSKELETAL  
DISEASES

# VIRTUAL CONGRESS

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AbstractBook

fracture in group II was 34 and 48 y. The mean disease duration in patients with hip fracture-20.8 y. All patients with hip fracture had the IV radiological stage of RA.

**Conclusion:** Every fifth patient with YORA had low-energy nonvertebral fractures associated with long RA duration and probably long glucocorticoids use. More than a third of patients with fractures had low-energy refractures.

## P472

### BONE EFFECT OF WEIGHT LOSS AFTER GASTROPLASTY IN MORBID OBESITY

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**Objective:** Vertical band gastroplasty (VGB) and Roux-en Y gastric bypass (RYGB) are successful surgical interventions for management of morbid obesity, begetting a dramatic improvement in its complication such as type 2 diabetes mellitus (T2DM). However, bone metabolic changes can ensue.

**Methods:** BMD (by DXA) and biochemical markers of bone resorption (CTx) and formation (bone-specific alkaline phosphatase (BALP), iPTH and 25OHD) were measured at baseline, 12 months (mo) and 5-6 y after VGB in 12 women (baseline A, 23-55; weight (w) 115 (4.1) kg; BMI 43 (1.1), and in another woman (A45; w 107 kg; BMI 42) after RYGB.

**Results:** Mean w loss amounted to 29.4% in the VGB group and to 39.4% in the RYGB patient. The w assessed by DXA by the whole body (WB) body composition system were not statistically different from those measured on the balance scale. Fat mass loss amounted to 28.0 (2.7) and 30.3 kg, and total lean mass to 5.6 (1.0) and 4.9 kg, in the group and the patient, respectively. In the VGB group, WBBMD lessened 4% vs. 19.9% in the RYGB patient. BMD diminished 4.1 and 6.2% (VGB) vs. 17.9 and 19.7% (RYGB) at the total hip and femoral neck, respectively after 5-6 y, most of the decrease observed between 3 and 12 mo (VGB) vs. a more continuous loss in RYGB). L-BMD decreased 24.4% in the RYGB patient, but not significantly in the group. Bone loss was accompanied by an increased bone resorption (CTx 2-fold in VGB vs. 5-fold the upper limit of normal in RYGB). 25OHD levels dramatically decreased while iPTH increased only in the RYGB patient, difficult to manage in spite of vitamin D3, calcifediol and calcium supplementation. 5-6 y after VGB, WBBMD was no longer different from baseline values, but lower of 20% in the RYGB patient. A trend to augment with BMD values was observed in the RYGB patient after 2 y of annual IV zoledronic acid infusions (L-BMD +4.2; FN +7.4; TH +2.7, and WBBMD +2.7%). On the other hand, no spontaneous increase was observed before ZOL therapy.

**Conclusion:** VGB provoked after 12 mo a modest, but significant bone loss at the hip and WBBMD. RYGB begot a much larger BMD loss accompanied by a dramatic increase in iPTH and CTx and decrease in 25OHD, favoured by a malabsorption syndrome.

## P473

### USING ANGIOPOIETIN-LIKE PROTEIN TYPE 3 TO ASSESS THE LIKELIHOOD OF OSTEOPOROTIC FEMORAL NECK FRACTURES IN WOMEN WITH RHEUMATOID ARTHRITIS

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**Objective:** To study the role of angiotensin-like protein type 3 (ANGPTL3) in metabolic disorders associated with the risk of femoral neck fractures in women with rheumatoid arthritis (RA).

**Methods:** 88 women with a reliable diagnosis of RA were under observation (mean age – 54.19±11.97 years old, disease duration – 11.21-8.65 years old). The content of ANGPTL3 in blood serum was determined by enzyme immunoassay using a commercial test system Human Angiotensin-like Protein 3 ELISA (Bio Vendor). Osteodensitometry was performed on a bone X-ray densitometer Lunar DPX (GE, USA). In accordance with the WHO recommendations, the evaluation of the state of the bone tissue of the proximal femur was carried out according to the T-criterion. A decrease in the T-criterion from -1.0 to -2.4 was regarded as osteopenia, a value below -2.5 was considered as a diagnostic sign of osteoporosis.

**Results:** A reliable positive correlation was established between the level of ANGPTL3 and the presence of osteoporosis (r=0.36, p=0.039) (confirmed clinical diagnosis at the time of the study), as well as a negative relationship with the age of patients (r=-0.83, p=0.006). The study of BMD, showed a close relationship of ANGPTL3 and osteoporotic changes in the femoral neck (especially in the Wards zone): with BMD Total r=-0.33 (p=0.042), BMD Troch r=-0.36 (p=0.038) and BMD Wards r=-0.44 (p=0.009). No significant associations were found between the level of ANGPTL3 and a decrease in BMD in the spine (L1-L4) (p>0.05). The level of ANGPTL3 in patients with RA with a confirmed clinical diagnosis of osteoporosis (OP) at the time of the study (osteoporotic changes in the spine and femoral neck) (n=36) was 747±266.3 ng/ml, and without signs of OP (n=52) – 670.5±258.8 ng/ml (p=0.181). However, in patients with an increased level of ANGPTL3 (>445 ng/ml), osteoporotic fractures in the femoral neck occurred in 33.8% of cases, and at a low level (<248 ng/ml) in 5.9% (the difference is statistically significant,  $\chi^2=5.257$ , p=0.022). A patient with RA and ANGPTL3 values in the range of 248-445 ng/ml should be included in the biochemical monitoring group for further monitoring (at least once in 3 months) regarding the risk of femoral neck fractures.

**Conclusion:** The determination of the serum concentration of ANGPTL3 allows one to evaluate the activity of resorptive processes in bone tissue in women with a confirmed diagnosis of RA with high reliability without large-scale expensive densitometric studies.