

## Obesity and Bone Mineral Density in Patients with Large Joint Osteoarthritis

**Authors :** Vladyslav Povoroznyuk, Anna Musiienko, Nataliia Zaverukha, Roksolana Povoroznyuk

**Abstract :** Along with the global aging of population, the number of people with somatic diseases is increasing, including such interrelated pathologies as obesity, osteoarthritis (OA) and osteoporosis (OP). The objective of the study is to examine the connection between body mass index (BMI), OA and bone mineral density (BMD) of lumbar spine, femoral neck and trabecular bone score (TBS) in postmenopausal women with OA. We have observed 359 postmenopausal women (50-89 years old) and divided them into four groups by age: 50-59 yrs, 60-69 yrs, 70-79 yrs and over 80 years old. In addition, according to the American College of Rheumatology (ACR) Clinical classification criteria for knee and hip OA, we divided them into 2 groups: group I – 117 females with symptomatic OA (including 89 patients with knee OA, 28 patients with hip OA) and group II – 242 women with a normal functional activity of large joints. Analysis of data was performed taking into account their BMI, classified by World Health Organization (WHO). Diagnosis of obesity was established when BMI was above  $30 \text{ kg/m}^2$ . In woman with obesity, a symptomatic OA was detected in 44 postmenopausal women (41.1%), a normal functional activity of large joints - in 63 women (58.9%). However, in women with normal BMI – 73 women, who account for 29.0% of cases, a symptomatic OA was detected. According to a chi-squared ( $\chi^2$ ) test, a significantly higher level of BMI was detected in postmenopausal women with OA ( $\chi^2 = 5.05$ ,  $p = 0.02$ ). Women with a symptomatic OA had a significantly higher BMD of lumbar spine compared with women who had a normal functional activity of large joints. No significant differences of BMD of femoral necks or TBS were detected in either the group with OA or with a normal functional activity of large joints.

**Keywords :** bone mineral density, body mass index, obesity, overweight, postmenopausal women, osteoarthritis

**Conference Title :** ICO 2020 : International Conference on Obesity

**Conference Location :** London, United Kingdom

**Conference Dates :** May 21-22, 2020