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**Title:** The differences of bone metabolism in males with chronic obstructive pulmonary disease and postmenopausal females

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**Body:** It is proved that osteopenia and osteoporosis in postmenopausal (PM) females is a big social problem. It is also reported that bone disorders in males with chronic obstructive pulmonary disease (COPD) are more frequent than in population. But it is not completely clear whether frequency and degree of disorders in bone metabolism (BM) in males with COPD are so marked compared to PM females and what are the differences in their BM activity. The aim of the study was to compare BM activity in males with COPD and PM females. The prospective cohort study was conducted. 33 males with COPD over 55 years old and 33 females without respiratory diseases over 55 were included. General examination, clinical and biochemical blood analyses, densitometry of lumbar spine and proximal part of left femoral bone, respiratory function test, osteocalcin and C-telopeptids blood levels examination have been performed to the patients. The prevalence of osteopenia and osteoporosis had no significant difference in two groups. Males with COPD had lower T-score for the femoral neck than PM females without pulmonary disorders of the same age,  $-1,05 \pm 0,85$  SD and  $-0,36 \pm 1,24$  SD respectively,  $p < 0,05$ . Osteocalcin level in males with COPD was significantly higher and C-telopeptids level was significantly lower than in PM females,  $p < 0,05$ . Therefore males with COPD have the same high prevalence of BM disorders as PM females. Osteoclasts in COPD patients seem to be more activated than in PM females, on the contrary osteoblasts activity is significantly depressed. Consequently it is necessary to use another approach for prevention and treatment of osteoporosis in patients with COPD.