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RELATIONSHIP BETWEEN THE LEVELS OF BONE TURNOVERS AND 25(OH)D AMONG WOMEN POSTMENOPAUSAL OSTEOPOROSIS WITH AND WITHOUT NEPHROLITHIASIS

K. Vasilenko¹, E.V. Rudnka²

¹Minsk City Center of Osteoporosis, Minsk, Belarus, ²City Centre of Osteoporosis, Minsk, Belarus

Objective: An important regulator of calcium-phosphorus metabolism, including kidney, is vitamin D. Defection in calcium-phosphorus metabolism can cause nephrolithiasis, since most forms of kidney stones form with calcium. Also vitamin D is necessary for building bone. The aim of this study was to examine the serum levels of 25(OH)D and bone turnovers (osteocalcin and β -crosslaps) with and without presence of nephrolithiasis among women with postmenopausal osteoporosis.

Material and Methods: 92 women with postmenopausal osteoporosis were examined. Median age and BMI were 62.1 ± 5.39 years and 24.9 ± 3.67 kg/m², respectively. Exclusion criteria were the histories of any kind of proved endocrine or rheumatologic diseases, blood creatinine level of >100 mmol/L, intake of active vitD metabolites within 1 month prior the blood test. All the examined were divided into 2 groups according to presence of nephrolithiasis. Group I ($n=53$) had kidney stones, group II ($n=39$) did not have a history of nephrolithiasis. Measurement of BMD at lumbar spine and femurs was performed by the method of DXA (Lunar Prodigy, GE, USA). Serum levels of 25(OH)D, osteocalcin and β -crosslaps were determined using the chemiluminescent assay (analyzer - Cobas e 411). Statistical analysis was performed using the program Statistica 8.

Results: Group II showed a significantly higher serum level of 25(OH)D $26.16 [25.02;27.81]$ ng/ml, than group I, where serum level of 25(OH)D was $21.45 [20.31;22.53]$ ng/ml ($p=0.036$). There were no statistical differences between the groups for serum levels of osteocalcin and β -crosslaps ($p>0.05$).

Conclusion: Postmenopausal women with osteoporosis without nephrolithiasis showed significantly higher serum levels of vitamin D, than women with kidney stones. In both groups among women with postmenopausal osteoporosis vitamin D insufficiency was identified. Require more in-depth study of the community of these states for their prevention and treatment.