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Title: FRAX program as a method of assessing the risk of osteoporotic fractures in patients with chronic obstructive pulmonary disease

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Body: In patients with COPD have a high risk of osteoporosis. The most convenient tool to detect osteoporosis is a method of estimating the 10-year risk of osteoporotic fractures FRAX, proposed in 2008, JA Kanis. Objective: To explore the practical application of FRAX method to assess the 10-year risk of osteoporotic fractures in patients with COPD. Materials and methods: We examined 108 patients with COPD. The study group comprised men with long smoking history. Mean age $60,2 \pm 5,5$ years. The study of respiratory function was performed on a multi-type installation «Master-Lab/Jaeger». The study of bone mineral density (BMD) of lumbar spine and proximal femur was performed by X-ray absorptiometry on densitometer «Lunar DPX-NT». Evaluation of ten major osteoporotic fracture risk and the risk of hip fracture was calculated using the computer program FRAX. To calculate the risk methodology used FRAX T-score femoral neck. Results: In assessing the absolute risk of major common fractures associated with osteoporosis, using a computer program FRAX, revealed that the minimal risk of major fractures observed in patients with COPD 2 stage- 3,25, the maximum - in patients with COPD 4 stage -7,4. The maximum risk of hip fracture was observed in patients with COPD 4 stage- 4,5. Established reliable correlation values of ten osteoporotic fracture risk, estimated by the method of FRAX with BMI ($r -0,62, p <0,01$), with DLCO, ($r -0,46, p <0,05$), with BMD ($r -0,86, p <0,05$). Conclusion: Patients with COPD stage 3 and 4 have a significantly higher risk of fractures compared with patients with COPD stage 2.