

Disturbances in bone mineral metabolism in soldiers of the Armed Forces of Ukraine with pulmonary tuberculosis who were returned from Russian captivity

M.I. Lynnyk¹, Ye.A. Nastenko³, G.L. Gumeniuk², V.I. Ignatieva¹, A.I. Alforov³, V.A. Svyatnenko³

1. SI “National Scientific Center of Phthiisology, Pulmonology and Allergology named after F.G. Yanovsky of the NAMS of Ukraine”, Kyiv, Ukraine

2. Shupyk National Healthcare University of Ukraine, Kyiv, Ukraine

3. National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Kyiv, Ukraine

Conflict of interest: none

BACKGROUND. 39.5 % of civilians with drug-resistant tuberculosis (TB) of the lungs have decreased densitometric indicators of the vertebrae before the start of treatment. There is currently no data on impaired bone mineral density (BMD) in military patients with pulmonary TB who were in the Russian captivity for a long time (2-3 years).

OBJECTIVE. To trace bone mineral metabolism disorders in soldiers of the Armed Forces of Ukraine (AFU) with pulmonary TB who were returned from Russian captivity, based on chest computed tomography (CT) data and compared with the data in civilians with pulmonary TB.

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MATERIALS AND METHODS. Densitometry was performed using the K-Pacs program. The results were compared with the results of osteoporosis diagnosis using a standardized 3D QCT program. CT of the chest organs of 37 patients – civilians and military patients with pulmonary TB, in whom monitoring of the vertebrae structure (Th_{12}, L_1-L_2) was carried out for the lowest densitometric values indicators (average, minimum and maximum BMD) on axial CT sections were analyzed in dynamics.

The first group consisted of 23 civilian men with pulmonary TB. The second group consisted of 14 military men with pulmonary TB who had been returned from Russian captivity. All patients were being treated at the State Institution “National Scientific Center for Phthisiology, Pulmonology and Allergology named after F.G. Yanovsky of the National Academy of Medical Sciences of Ukraine”.

RESULTS. In military patients with pulmonary TB who were returned from Russian captivity, the mean BMD value was statistically significantly lower than in civilians with the same pathology (109.4 ± 7.9 vs 155.5 ± 11.2 ; $p < 0.01$).

CONCLUSIONS. 92.9 % of AFU soldiers with pulmonary TB who were returned from Russian captivity have bone pathology: 42.9 % have osteopenia and 50.0 % have osteoporosis. The decrease in BMD in these patients does not depend on the prevalence of the pathological process in the lungs.

KEY WORDS: mineral metabolism, osteoporosis, osteopenia, tuberculosis, densitometry, computed tomography.
