

MINERAL DENSITY OF LUMBAR VERTEBRAE AND DENSITOMETRY INDICES OF SPONGIOUS SUBSTANCE OF ALVEOLAR PROCESS AND MAXILLARY TUBerosITY IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Abstract

The disturbances of mineral metabolism in patients with chronic obstructive pulmonary disease (COPD) significantly increase the bone resorption, especially in elderly patients and postmenopausal women. Meanwhile, the relation between systemic osteoporosis and bone resorption in COPD patients was not studied.

The aim was to study the density of lumbar vertebrae and spongy substance of alveolar process, and maxillary tuberosity in patients with chronic obstructive pulmonary disease.

Object of the study: 63 patients with COPD (group B — 12 patients (34,9 %), group C — 12 (19,1 %), group D — 29 patients (46 %). 30 apparently healthy subject were enrolled into the control group.

Methods: questionnaire, clinical and functional examination, quantitative computed densitometry (3D QCT) and multi-slice computed tomography (MSCT) of maxillofacial area, using TSX-101A "Toshiba" scanner; statistical methods.

Results. Systemic bone lesions were revealed in almost all COPD patients. Osteopenia was diagnosed in 18 (28,6 %) patients, osteoporosis — in 44 (63,8 %) patients of main group, which was 6 times higher than in the control group.

Structural disturbances in spongy tissue of alveolar process and higher prevalence of osteoporosis was observed in group D patients, characterized by more severe symptoms, low functional capacity and higher rate of complications.

A correlation between Z and T criteria of osteoporosis, mean mineral density of lumbar vertebrae (L1–L3) and mean and maximal density of alveolar process, maxillary tuberosity was established, suggesting the presence of bone resorption/destruction, caused by mineral metabolism disturbances in COPD patients. Clinical manifestation of these changes included the loss of teeth and complete secondary adentia.

Key words: mineral metabolism, osteoporosis, chronic obstructive pulmonary disease, densitometry, multi-slice computed tomography, alveolar process.

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