

COMPARISON OF INFORMATIVITY OF THE STUDY ON MAXILLARY BONE DENSITY AND STANDARD OSTEOPOROSIS INDICATORS IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Abstract. Patients with chronic obstructive pulmonary disease (COPD) develop generalized periodontitis (GP) and secondary systemic osteoporosis earlier than those without somatic pathology. Therefore, it is advisable to study the connection between osteoporosis indicators and density of spongy substance of the alveolar process in this category of patients. *The aim* of the study is to investigate the connection between the osteoporosis criteria and the density of spongy substance of the alveolar process and maxillary tubercle in patients with COPD. *Object of the study.* The study included 93 people. The experimental group (I) included 63 patients with COPD (41 men and 22 women (63.8 ± 1.1 years on average)). Control group (II) — included 30 people without somatic pathology, (18 men and 12 women), (59.6 ± 1.3 years on average). The groups of patients didn't differ in gender, age, height, weight, and body mass index (BMI). *Materials and methods:* questionnaire, clinical, periodontal examination, pulmonary function test (PFT), quantitative computed densitometry "QST Pro" and computed tomography (CT) of the maxillofacial area on the CT scanner Aquilion TSX-101A "Tochiba" (Japan), statistical. *Results and discussion.* Based on data from periodontal examination and CT, GP was diagnosed in all patients with COPD: among: in 29 (46.0 %) patients - I degree, in 17 (27.0 %) — II degree and in 17 (27.0 %) — total secondary adentia. GP signs were also diagnosed in all persons without somatic diseases, but they were mostly primary and first degree of severity. A large percentage (47.0 %) among the patients with COPD with complete secondary adentia were patients of clinical group D. The height loss of the alveolar process in COPD patients was (3.6 ± 0.1) mm compared with people without somatic pathology (2.2 ± 0.1) mm, $p < 0.001$. According to the Z-, T-criteria, and the average value of the mineral density (MD) of the lumbar vertebrae (L1 — L3), the experimental and control groups differed significantly. Thus, the Z-criterion in group I was (-1.03 ± 0.13), and in group II — (0.59 ± 0.23), $p < 0.001$. The T-test in group I was (-3.19 ± 0.14), in group II it was (-1.29 ± 0.17), $p < 0.001$. The mean of MD of lumbar vertebrae (L1-L3) in group I was (87.7 ± 3.8) mg/cm³ and in group II it was (139.1 ± 4.7) mg/cm³, $p < 0.001$. The maximum values of the spongy substance of the alveolar process density at specified were significantly different from each other in patients of groups I and II and were higher in patients of group II, which indicated more pronounced resorptive-destructive processes of bone tissue in patients with COPD. The correlation between Z-, T-criteria average values of MD of lumbar vertebrae (L1-L3) and average and maximum value of spongy substance of the alveolar process and maxillary tubercle density were investigated in patients of I and II groups. *Conclusions.* Systemic disorders of mineral metabolism occur in parallel with the resorptive-destructive processes of the alveolar bone, which is accompanied by the development of generalized periodontitis and leads to the loss of a large number of teeth or complete secondary adentia. All patients with COPD and generalized periodontitis should be assigned to osteoporosis check-ups

Key words: chronic obstructive pulmonary disease, mineral metabolism, osteoporosis, pathological processes of the periodontium.

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