

Evaluation of the of lipid peroxidation reactions and regional blood flow of periodontal tissues in adolescents with arterial hypertension and periodontal diseases

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Objective. To study lipid peroxidation and periodontal tissues regional blood flow parameters in adolescents with arterial hypertension and periodontal diseases.

Methods. 94 adolescents' group with arterial hypertension (AH) and periodontal disease ($n = 57$, mean age of 14.7 ± 1.89 years) and a group without AH and with periodontal disease ($n = 37$, mean age of 14.57 ± 2.01 years) (comparison group) were examined. The intensity of lipid peroxidation (LPO) processes was assessed by spectrophotometric and fluorometric methods. The method of Doppler ultrasound was used for the assessment of periodontium hemodynamic and microvascularization.

Results. The group of adolescents with AH and periodontal diseases characterized by the statistically significant differences with the comparison group in primary products of LPO — diene conjugates (1.53 times lower, $p = 0.0002$), thiobarbituric acid reactive products (TBA-active prod-

ucts) increase (by 1.4 times, $p = 0.0018$), decrease of α -tocopherol level (by 1.3 times, $p = 0.0013$) and retinol level increase (by 1.25 times, $p = 0.014$). The group with AH and with periodontal disease had an increased values of the blood flow velocity in the systole (1.12 time, $p = 0.010$) and index of peripheral resistance (1.19 times, $p < 0.0001$) compared with the data of the comparison group. In the group of adolescents with AH with periodontal disease the appearance of pathological dependencies between toxic metabolites of the lipid peroxidation process and indices of vascular blood flow was noted.

Conclusion. Imbalance in the LPO-AOD system as well as the appearance of pathological relationships between the parameters of lipid peroxidation and the parameters characterizing reduction of vascular blood flow in adolescents with hypertension and periodontal disease was proved and it can be the new comorbid association.