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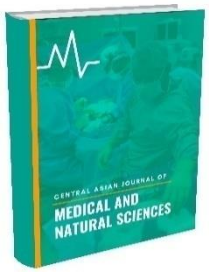

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Electrochemically Activated Solutions on the Condition of the Oral Cavity in Patients with Lichen Planus

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Abstract: Relevance. Clinical and experimental literature data indicating that in the genesis of inflammatory manifestations of the oral mucosa in patients with erosive and ulcerative form of CPL, the pathogenetic role is played by the processes of lipid peroxidation (POL) and a decrease in the activity of antioxidant defense enzymes (AOS) of cells (Samoilova O.P., 2007, 2008; Thomas P. Hebif., 2008; Kuwahara R.T., Skinner R.B., Rosenberg E.W., 2000).

Reactive oxygen species (ROS) and POL products with their excessive formation in cells can be damaging agents in conditions of a decrease in the activity of enzymes of the antioxidant system (AOS) of the body: superoxide dismutase (SOD), glutathione peroxidase, catalase, etc. These changes in the stationary equilibrium in the system play a role in the disorganization of the homeostatic mechanisms of the microvascular bed, the development of chronic hypoxia of periodontal tissues, changes in their permeability and the development of a pathological inflammatory reaction in many diseases of the oral cavity, including the erosive and ulcerative form of CPL [18].

The disease often affects the skin and mucous membranes, the frequency of which in patients with CPL is very contradictory and varies between 17-77%. Isolated lesion of the mucous membranes of the oral cavity, the inner surface of the cheeks, tongue, gums, palate, tonsils occurs in 3-26.5% of cases. Approximately half of the patients with skin rashes with CPL simultaneously have manifestations on the oral mucosa, and they long precede the appearance of skin manifestations or remain the only sign of the disease. Clinical signs of lichen planus on the mucous membrane of the oral cavity and lips are characterized by a variety of forms. Initially, small (miliary) papules of grayish-white color appear, clearly standing out against the pink background of the mucous membrane, then the papules form plaques. Due to the constant maceration in the oral cavity, the plaques do not acquire a waxy, but a whitish or grayish-white color [1.3.5.7.9.11.13.15.17].

The mucous membranes do not have a characteristic luster, the infiltration is expressed slightly and the elements almost do not rise above the surface of the mucosa. Microorganisms can also play a certain role in the pathogenesis of various diseases of the oral mucosa, including lichen planus (Korsunskaya I.M., Nevozinskaya Z.I., Zakharova A.B. et al., 2008). To explain the causes of lichen planus, there are several hypotheses: viral or infectious, neuroendocrine, immunoallergic, membrane destructive. The role of hereditary factors is not excluded. The inflammatory process in the oral cavity is accompanied by the activation of polymorphonuclear leukocytes, monocytes-macrophages, in which the formation

of reactive oxygen species (ROS) occurs, i.e. a "respiratory explosion" and the induction of POL. Developing lipoperoxidation, as one of the unique fundamental mechanisms, can cause damage to the cell membranes of epithelial cells. According to various authors, the frequency of damage to the oral mucosa in CPL is the cause of deterioration in the quality of life, reduced ability to work and the development of a number of somatic diseases.

Treatment of this disease includes the use of drug therapy, general and local, for erosive and ulcerative forms of CPL in the oral cavity. At the same time, the use of traditional therapy, preventive and hygienic measures does not allow to stop the inflammation process quickly enough. Each of the pharmacopreparations can affect a certain link of the pathological process, simultaneously have side effects and their effect is not always effective enough. Electrochemically activated aqueous solutions in combination with traditional therapy [2.4.6.8.10.12.14.16].

The basis for scientific interest in the use of ECAR in the form of aqueous solutions is the possibility of regulating the indicators of redox potential and pH of the internal environment, due to the formation of Oh^- and H+ ions. Moreover, the use of such activated solutions is a pharmacological stimulation of the body's antioxidant defense. This fact was established by us in studies on intact rabbits.

Conclusion

Erosive and ulcerative pathology of the oral mucosa in patients with lichen planus is characterized by the development of oxidative stress, an increase in the formation of reactive oxygen species by phagocytic cells, the content of malondialdehyde in erythrocytes and an imbalance in the AOS: a decrease in SOD activity and a compensatory increase in catalase activity and ceruloplasmin concentration.

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