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ACETYLCYSTEINE PERIODONTOPROTECTIVE AGENT IN CHRONIC GENERALIZED PERIODONTITIS.

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Acetylcysteine is the N-acetyl derivative of the amino acid L-cysteine, and is a precursor in the formation of the antioxidant glutathione in the body. The thiol (sulfhydryl) group confers antioxidant effects and is able to reduce free radicals.

In vivo protective effects N-acetylcysteine (NAC) against acetaminophen-induced hepatotoxicity in mice was studied. NAC at 1 g/L is added into drinking water for four weeks and followed by acetaminophen treatment. Acetaminophen treatment significantly depleted glutathione content, increased oxidation stress and elevated alanine (ALT) and aspartate (AST) activities; however, the intake of NAC significantly alleviated glutathione depletion and the elevation of ALT and AST activities. N-acetylcysteine is also used for preventing alcoholic liver damage; for protecting against environmental pollutants including carbon monoxide, chloroform, urethanes and certain herbicides. Oral acetylcysteine is used as a nephroprotective agent for the prevention of radiocontrast-induced nephropathy, a form of acute renal failure.

The target of our work - to prove the periodontoprotective properties of acetylcysteine in experimental chronic generalized periodontitis.

The thesis devoted to experimental substantiation of prophylactic treatment expediency by acetylcysteine in chronic generalized periodontitis. In the basis of the acetylcysteine periodontoprotective effects lies in its ability to prevent membrane destruction by the significant reduction of generation and accumulation of free radicals and by effective regulation of prooxidant-antioxidant homeostasis in serum and rat gums tissues with inflammatory–dystrophic periodontal disease. In addition, the efficiency of acetylcysteine periodontoprotective ability implemented by the stabilization performance of energy and carbohydrate metabolisms, prevention of separation processes of oxidation and phosphorylation, preservation of functional detoxicationsystem under chronic generalized periodontitis condition.

In conclusion, N-acetylcysteine pharmacotherapeutic efficacy also consists of its ability to prevent and/or reduce the expression of aggressive chronic generalized periodontitis symptoms among other effects, which have been proved earlier.