

## **CORRECTION OF OXIDATIVE STRESS IN THE SALIVARY GLANDS TISSUES BY MELANIN IN CASE OF PROLONGED HYPOACIDITY**

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It is known, that long decrease in gastric secretion leads to the development of hypergastrinemia and to pathological changes in digestion organs (1). Very important there is a search of ways to correction of these undesirable consequences.

The aim of the study was to prove the feasibility of melanin using for prevention of oxidative stress development in salivary glands at long omeprazole- induced hypergastrinemia. Melanin is a ubiquitous natural pigment found in most organisms (spiders are one of the few groups in which it has not been detected). Human skin is repeatedly exposed to ultraviolet radiation (UVR) that influences the function and survival of many cell types and is regarded as the main causative factor in the induction of skin cancer, behaving like a sun umbrella for the our cells. It has been traditionally believed that skin pigmentation is the most important photon-protective factor, since melanin, besides functioning as a broadband UV absorbent, aids in the acquiescence of vitamin D from sunlight (2).

Under conditions of long omeprazole introduction pathological changes in salivary glands tissues are appeared: the intensification of free-radical oxidation. Most reactive oxygen species (ROS) in living organisms are produced as byproducts of many processes. Being highly active, ROS interact with virtually all cellular components particularly modifying their properties (3).

Experiments are executed on 23 rats-males of line Wistar, weight 180-250g. Animals within 28 days entered omeprazole (14 mg/kg of weight) and melanin (5 mg/kg of weight) together and separately. Development of the hypergastrinemia verified by the maintenance gastrin in blood plasma of rats ( $59,0 \pm 35,5$  pg/ml, in comparison with investigated animals –  $170,7 \pm 90,7$  pg/ml). In the homogenate of salivary glands defined activity of catalase, superoxide dismutase and the maintenance of TBA-reactants.

We determined, that activity of catalase under conditions of hypergastrinemia was 1,47 times ( $p < 0.05$ ) less, than intact rats, and the activity of superoxide dismutase – 1,66 times ( $p < 0.05$ ). Also the hypergastrinemia led to increase of the maintenance of TBA-reactants 1,39 times ( $p < 0.05$ ).

We determined, that activity of catalase under conditions of hypergastrinemia correction by melanin was 1,27 times ( $p < 0.05$ ) more, than without correction, and the activity of superoxide dismutase – 1,49 times ( $p < 0.05$ ). Also correction of the hypergastrinemia by melanin led to decrease of the maintenance of TBA-reactants 1,23 times ( $p < 0.05$ ) in salivary glands.

So, under conditions of long omeprazole introduction pathological changes in salivary glands tissues appear: the intensification of free-radical oxidation. Experimental correction by melanin promotes normalisation of pathological changes in salivary glands of rats during long introduction of proton pump inhibitor because of free-radical oxidation is oppressed.

### **References:**

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