

ANTIULCEROGENIC EFFECT OF L-ARGININE OF MUCOUS MEMBRANE OF STOMACH IN EXPERIMENTAL ULCER

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In pathogenesis of ulcerous violations the main role belongs to ischemia of the mucous membrane of stomach (MMS) and weakening of the protective function of the mucous membrane barrier. To prove the role of hemocirculatory violations in the mechanism of stomach ulcers formation it is interesting to study the character of vasodilator influence on the development of destructive MMS changes in experimental stomach ulcer.

The aim of this work was to investigate the influence of nitrogen oxide L-arginine donor on ulcerogenesis mechanisms. The experiments were carried out on 32 mature Wistar male-rats. The animals were distributed into 4 groups: the first-intact ones, the second-experimental ulcer-on the basis of classic model of experimentally painful stress according to O.Desiderato et al. (1974) in combination with peroral introducing of bile in a dose 1 mg/100 gr for 30 minutes before stress factor influence as well as by restriction of nutritional ration to 1/3 of the normal consumption during 12 days, the third group- L-arginine hydrochloride (100 mg/kg – perorally), the fourth group – introducing L-arginine in the same dose for 3 days until experimental stomach ulcer is appeared. It was determined that in the experimental ulcer proteolytic MMS activity increases on 11% in comparison with the control group. Simultaneously there was the expressed inhibition of α_1 -antitrypsin in blood serum ($1,5 \pm 0,1$ g/l against $2,4 \pm 0,1$ g/l in intact animals, $P < 0,05$). MMS ($67,3 \pm 4,9$ g/l against $86,7 \pm 5,7$ g/l in control, $P < 0,05$) and pancreas ($19,8 \pm 2,8$ g/l against $30,4 \pm 3,7$ g/l, $P < 0,05$). The previous introducing of L-arginine promotes the normalization of the increased, in case of an ulcer, proteolytic activity of the MMS tissue and removes stress factor inhibition of activity of the main proteinase inhibitor – α_1 -antitrypsin. Side by side with normalization of the proteolytic processes there was revealed the antiulcerous effect of oxide nitrogen L-arginine donor in tissues (the rate of ulcers lowered in 3,4 times pluracy and gravity – in 2,8 and 2,4 times). The obtained data allow us to determine that in ulcerogenic mechanism the essential role play hemocirculatory violations and connected with them proteolysis activation in MMS. Possible role in antistress factor influence of L-arginine may be played by analgetic effect (I.Savelyeva, 1997) and adaptive influence on regulative systems (Y.Malenyuk et al., 1998).

Thus, donor of nitrogen oxide L-arginine has the expressed antiulcerogenic action that gives proof of the role of ischemia in pathogenesis of destructive violations of the stomach and the expediency of its investigation in clinical practice.