

ANTIULCER ACTIVITY OF A NEW DERIVATIVE OF GLYCYRRHIZIC ACID

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The search for new sources of highly active drugs based on local raw materials is an urgent task of modern science, it is known that licorice root is widely used in various sectors of the economy, the main component of it is glycyrrhizic acid. The presence of anti-inflammatory activity, low toxicity and lack of serious side effects make new synthetic derivative of glycyrrhizic acid promising for medicine compounds. **The purpose of the study.** To study the antiulcer activity of glycyrrhizate on an experimental model of neurogenic ulcers caused by 24-hour immobilization of animals and to identify the mechanism of antiulcer activity.

Materials and methods. Experimental model of neurogenic ulcers caused by 24-hour immobilization of animals were performed in rats. In the experimental groups daily for a week to stress, was orally given glycyrrhizate at a dose of 100 mg/kg in the control group in the corresponding volume of distilled water. The effect of the drug was compared with Cimetidine, which was administered in the dose of 400 mg/kg. After 24 hours all animals were macroscopically inspected and watched the gastric mucosa and evaluated the effect of antiulcer drugs. Studied the effect of glycyrrhizate on the secretory function of the stomach and gastric acidity in rats. The drug was administered orally during the week, 20 min after the last injection, the procedure was performed under ether anesthesia. Then after 2-3 hours the animals are sacrificed and measured the volume of gastric juice was titrated with 0.1 N NaOH solution until pink staining. In the blood serum of rats was determined by the activity of the enzyme superoxide dismutase (SOD) and catalase.

The results of the study. The experiments showed that in the control group of rats the average number of ulcers 5.66 ± 0.54 , and the average total area of the ulcers of 6.33 ± 0.54 mm². Under the influence of the drug glycyrrhizate the average number of ulcers and average total area of the ulcers was reduced by 2.33 ± 0.18 and 2.0 ± 0.18 (58% and 68%). Under the influence of Cimetidine, the average number of ulcers and average total area was decreased by 4.66 ± 0.36 and 3.33 ± 0.54 (18% and 48%), respectively, compared with the control group. To understand the mechanism of antiulcer action studied the effect of glycyrrhizate on the secretory function of the stomach and gastric acidity in rats. The results of the experiments showed that in the control group of rats volume of gastric juice made up 2.05 ml, pH = 1.33, total acidity 0.5 ml, titratable unit was 100 TU. Under the influence of the drug volume of gastric juice was reduced to 39%, pH 3.25, total acidity -0.37, titratable unit -74 TU. The development of ulcerative process proceeded on the background of reducing the activity of antioxidant enzymes superoxide dismutase [of $1.07(1.0 \pm 1.14)$] and catalase [$1.41(0.94 \pm 1.88)$]. Glycyrrhizate increased the activity of catalase compared with control 3.3-times [$4.76(1.96 \pm 7.6)$], superoxide dismutase [$1.24(1.14 \pm 1.34)$]. Thus, under the action of the drug the pH shifted to the alkaline side 1.4-times, reduced total acidity by 26%.

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