AN INFLUENCE OF THE NANOEMULSION OF LIPOSOMES WITH GRAPE SEED POLYPHENOLS ON THE MOTOR-EVACUATION FUNCTION OF THE INTESTINE

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Motor- evacuation disorders of the stomach and duodenum play a significant role in the pathogenesis of many diseases of the gastrointestinal tract. They can act as a leading role in the pathogenetic factor (non-ulcer dyspepsia, duodenostasis, pylorospasm etc.), and as accompanying disorders, which may increase the effects of other aggressive factors (hydrochloric acid and bile acids, reducing the protective properties of the mucous membrane). Therefore, the search for effective means of normalizing the motor-evacuation function of the gastrointestinal tract continues at the present time.

In the National University of Pharmacy, at the Department of Biological Chemistry, a new liposomal nanomedicine with grape seed polyphenols has been created. In our previous experiments was showed a high gastroprotective activity in various models of ulcerative lesions of the stomach.

Purpose. Studying an influence of the nanoemulsion of the liposomes with grape seed polyphenols (NLGSP) for motor-evacuation function of the gastrointestinal tract.

Materials and methods. The experiment was conducted on 12 white mice of both sexes weighing 18±2 g, which were divided into 2 groups: Group 1 – intact control, Group 2 – animals, which were injected at a dose of the NLGSP 90 mg/kg.

Studying of an influence of the NLGSP on the motor-evacuation function of the gastrointestinal tract was performed by J. S. Stickney et al. Mice were kept for 24 hours on a starvation diet without restriction of drinking water. A dose of the NLGSP 90 mg/kg was administered to the experimental animals intragastric once. After 30 minutes, all animals were administered intragastric 0.5 ml of a contrast mass (10% suspension of activated charcoal in 1% starch paste). After 40 minutes the animals were taken out of the experiment by euthanasia.

Then the experimental and control animals was measured (in cm) absolute length of the intestine (Lia) and path (in cm) traversed by contrast mass on it (Ltcm). The integral indicator of gastrointestinal motility, percentage of the length of the intestine was traversed contrasting weight, relative to the absolute last (Ltcm`):

$$Ltcm`, \% = (Ltcm \times 100\%) / Lia$$

Results. The average in the length of the intestine, contrast material covered in the intact control group reached 33.5 cm, representing 60.7% of its length. However, in animals treated with NLGSP, contrast material passed 48.9 cm intestine, which corresponds to 89.2% of its total length. As a result, it was determined that the introduction of the NLGSP a relative measure of length of the intestine, traveled by contrast material, was 28.5% more compared with that of the intact control group.

Conclusion. Analyzing the above, we can conclude that NLPVN enhances motor-evacuation function of the intestine.