Conclusions. Thus, it seems relevant to research on the technological study of the field viola herb, obtaining from it in low-waste production conditions effective, convenient for use and standardized in quality medicines.

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Analysis of vascular permeability of the anorectal area of experimental animals during treatment with suppositories with diosmin and hesperidin

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Introduction. One of the important stages of pharmaceutical development of drugs is the confirmation of their pharmacological activity in the model of experimental pathology. Thus, in the development of rectal suppositories for the treatment of diseases of the anorectal area with the help of croton oil, the conditions of the acute pathological process of hemorrhoids are modeled. In such conditions, it is possible to test an important provocative factor for hemorrhoids - the permeability of the vascular wall.

Purpose of the research. The aim of this study is to conduct a pharmacological analysis of vascular permeability of the anorectal area in the therapeutic use of rectal suppositories with diosmin and hesperidin.

Materials and methods. The studies were performed with 48 outbred male rats (aged 3 months). Experimental animals were kept in a vivarium at the Educational and Scientific Institute of Applied Pharmacy of the National University of Pharmacy in accordance with sanitary and hygienic standards in the conditions recommended for this species of animals. The animals were housed in separate polypropylene cages in a room with natural light regime "day and night" at a temperature of 19-24 °C and a humidity of 50-60%. The animals had free access to water and food, were on a standard diet for this species.

Randomization by experimental groups was performed through minimizing the difference in animal weight. Experimental animals were divided into 6 experimental groups of 8 animals each: 1) Intact control; 2) Control pathology (modeling of experimental hemorrhoids); 3) Control pathology + sample of suppositories (daily dose of 50 mg/kg of animal weight); 4) Control pathology + sample of

suppositories (daily dose of 75 mg/kg of animal weight); 5) Control pathology + sample of suppositories (daily dose of 75 mg/kg of animal weight); 6) Control pathology + reference sample (Sea buckthorn suppositories).

Obtained results. According to the obtained results, it can be concluded that in rats during the induction of experimental hemorrhoids there was a significant increase in the permeability of the vascular wall of the tissues around the hemorrhoids (control pathology> referent sample by 270%; $p \leq 0.05$).

For experimental animals of the third group, there was a probable decrease in the extravasation of the dye into the intercellular space by 39.4% compared with control pathology ($p \leq 0.05$). In addition, the strength of the pharmacological effect was almost similar to the reference group ($p > 0.05$).

The relative-optimal indicator was confirmed in the sample from the fourth group. At this therapeutic dose, the suppositories significantly reduced the vascular permeability of the anorectal area of rats, which was expressed in a reduction in the dye content in the affected tissues by 62.0% ($p \leq 0.05$ control pathology).

The pharmacological activity of the test sample from the fifth group did not have a statistically significant difference with suppositories at a dose of 75 mg / kg. The variable decrease in the permeability of the vascular wall of the anorectal zone in these samples reached 59.9% ($p \leq 0.05$ control pathology). The obtained results can be substantiated by extremely limited properties of flavonoids to penetrate the intestine and vascular wall. It should be noted that the reference samples of suppositories also helped to reduce the extravasation of the dye into the tissue space of the rectoanal area (40.9%; $p \leq 0.05$ control pathology). However, this indicator is significantly inferior to the results of test samples from the fourth and fifth groups.

Conclusion. Summing up the results of the study, we can conclude that at this stage the most optimal dose is diosmin and hesperidin at a dose of 75 mg / kg body weight of the animal (or 300 mg in the form of suppositories). These samples showed significant pharmacological activity (reduced capillary permeability), which exceeded the values at lower doses and control samples.