

THE CHOICE OF THE BASE FOR THE CREATION OF RECTAL SUPPOSITORIES FOR THE TREATMENT OF HEMORRHOID

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Introduction. One of the important problems of modern medicine is the diagnosis, treatment and prevention of proctologic diseases. Recently, rectal diseases, in particular proctitis, proctosigmoiditis, hemorrhoids, are becoming more common and do not tend to decrease. The reason for this is a sedentary lifestyle, poor diet, bad habits such as alcohol abuse, stress. More than 10 % of the adult population of the planet suffers from hemorrhoids, and the proportion of the total number of coloproctological diseases is 40%.

Suppositories can be used as a medicine for local therapy of chronic and acute hemorrhoids and other diseases of the anal canal. It can reduce allergic reactions, prolong the therapeutic effect, especially in inflammation, increase the rate of drug absorption, reduce the dose (in some cases).

The search for active pharmaceutical ingredients in order to expand the range of drugs for topical treatment of hemorrhoids is an urgent task of modern pharmacy.

In this aspect, arnica (*Arnica montana* L.) is a promising active pharmaceutical ingredient for the creation of extemporaneous medicine, in particular suppositories for the treatment of hemorrhoids.

Purpose of the research. The choice of the base for the creation of rectal suppositories with homeopathic arnica tincture for the treatment of hemorrhoids.

Materials and methods. Arnica tincture was prepared from dried flowers in accordance with maceration method. As suppository base were used: Witepsol H15, solid fat, cocoa butter, as well as a mixture of cocoa butter and beeswax. Indicators of melting temperature of suppository samples and time of complete deformation were determined according to the methods of the State Pharmacopoeia of Ukraine.

Obtained results. The choice of the suppository base was carried out on the basis of appearance and structural and mechanical properties. Throughout the entire period of the study, no change in color, odor, homogeneity, significant fluctuations in the values of the time of complete deformation, as well as the melting temperature of suppositories made on the basis of Witepsol H15, was noted. The freezing temperature was lower than the melting point, which allows to obtain suppositories by pouring method at a favorable temperature.

Conclusions. Based on the obtained results, the suppository base - Witepsol H15 was selected for a further researches of biopharmaceutical indicators.

SELECTING A BASE FOR CREATING A GEL BASED ON HARPAGOPHYTUM PROCUMBENS ROOT DRY EXTRACT

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Introduction. The Ukrainian pharmaceutical market assortment of herbal medicines that are used to treat diseases of the musculoskeletal system is quite diverse. However, the analysis of the data indicates

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the need to develop the Ukrainian sector of the market for this group of drugs for the local therapy of these diseases. So, develop and introduce new Ukrainian and highly effective medicines into medical practice. Soft dosage forms have a local and resorptive effect, due to which they provide a longer concentration of active substances directly at the site of drug application. The gel form is easy to use, promotes the penetration of the active substance through the skin, additionally causing a cooling effect.

Purpose of the research. Development of the composition of the basis for the creation of anesthetic gel in the treatment of diseases of the musculoskeletal system.

Materials and methods. In scientific research we used standardized according to the requirements monograph «Harpagophyti extractum siccum» SPhU 2.2. harpagophytum procumbens root dry extract. Gelling agents: carbomer Ultrez-27, Ultrez-940, xanthan gum. The technology for obtaining experimental samples consisted in obtaining a gel base according to the procedure recommended for a given gelling agent, introducing harpagophytum procumbens root dry extract into the finished base and thoroughly mixing. The studied samples of gels with carbopol were prepared according to the following scheme: the gelling agent was carefully poured into a thin layer on the surface of purified water (to prevent the formation of lumps) and left at rest for several minutes. Then, in several steps, a solution of triethanolamine was added to a certain pH value and slowly stirred until a gel was formed. Samples of gels with xanthan gum were prepared as follows: the calculated amount of xanthan gum was moistened with a non-aqueous solvent, propylene glycol, and purified water was added, the mixture was stirred at medium speed of the stirrer (10–15 min), and a transparent gel base of light yellow color with a pH value of 6.6 was obtained. 6.8. For gel compositions, indicators were studied, such as: appearance, color, uniformity, odor, spreadability, colloidal stability, thermal stability and pH.

Obtained results. Studies on the compatibility of dry recumbent harpagophytum extract with various gelling agents: Ultrez–27, 940 carbomer, xanthan gum in various concentrations. The compositions of the model samples of the bases are given in table 1.

Table 1
Compositions of model gel bases samples

Substance	Substance concentration, % / sample number								
	1	2	3	4	5	6	7	8	9
Carbomer Ultrez-27	0.5	1.0	1.5						
Carbomer - 940				0.5	1.0	1.5			
Xanthan gum							1.0	2.0	3.0
Harpagophytum procumbens root dry extract	1 %								
Purified water	up to 100 %								

Samples No. 1 and No. 4 had a slightly viscous gel-like consistency and did not pass the thermal stability test according to the results of the studies. Samples using xanthan gum No. 7, 8 were not uniform in consistency, and sample No. 9 formed a sticky film when applied to the skin. Therefore, these samples were excluded from further studies.

Samples of gels No. 2, 3, 5, 6 using carbomers of the presented brands had good consumer characteristics – they spread well and easily, were not sticky.

Conclusions. The optimal gelling agents for creating a gel base with Harpagophytum procumbens root dry extract are Carbomer Ultrez–27 and Carbomer–940. The next stage of the study is to study the rheological properties of the developed gel samples.