

Materials and methods. For preparation of the ointment, it was suggested to use a sterile solution of nitroglycerine, benzocaine and an emulsion ointment base containing fish oil.

Results and discussion. Among the non-surgical methods for treating hemorrhoids and anal fissures, the most modern is the medication relaxation of the internal sphincter of the rectum by various pharmacological agents. A well-known method of pharmacological sphincterotomy based on the local application of isosorbide.

There are not ointments for the treatment of hemorrhoids that contain nitroglycerine In the Ukrainian pharmaceutical market virtually. Nitroglycerine acts directly on the smooth muscle of the predominantly venous and arterial vessels through a nitrate receptor located in the smooth muscle of the vessel wall. Nitroglycerine in the smooth muscle enzymatically converts to form nitric oxide, which stimulates the activity of guanylate cyclase. It is responsible for the formation of cyclic guanosine-3'5'-monophosphate, which is a relaxation mediator. Medicinal relaxation of the internal sphincter with nitroglycerine ointment does not lead to the development of anal incontinence. That is why it is expedient to use nitroglycerine in ointments from hemorrhoids.

For the preparation of anti-hemorrhoidal ointments for industrial and pharmacy production, the known fat base – vaseline, which prevents penetration of medicinal substances introduced into biological tissues – is a smooth muscle of the anal canal. This significantly reduces the effect of local treatment. Vaseline negatively affects the epithelium of the anal canal, clogging the pores of tissues, the concentration of the active substance when passing through the mucous membrane and submucosal layer drops sharply and decreases the rate of its penetration. In addition, on the surface of the tissues of the anal canal, the fixation of medicinal compositions on the basis of vaseline is difficult and there is a rapid removal of it from the affected surface, and the effectiveness of treatment depends on the creation of the necessary concentration of active substances in the muscle of the anal sphincter.

During development of the ointment composition with nitroglycerine, it was proposed to use an emulsion base, which does not exhibit such properties as vaseline. It is lighter, does not clog pores of the epithelium of the anal canal, it also releases the substance faster, which means that the pharmacological effect is faster.

Conclusions. On the basis of the conducted research it can be concluded that the using of nitroglycerine in the composition of ointments on an emulsion basis will expand the range of finished medicines for the treatment of hemorrhoids and anal fissures.

IMPROVEMENT OF OINTMENT COMPOSITION FOR THE TREATMENT OF ARTHRITIS

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Introduction. According to WHO, musculoskeletal diseases (rheumatoid arthritis, Bechterew's disease, deforming osteoarthritis, arthropathy, sprains) as the cause of disability and mortality are ranked 4th in the world after cardiovascular, cancer and diabetes. According to statistics, more than 30% of the population of the planet have certain disorders in the work of joints.

According to the protocol for the provision of medical care in the treatment of arthritis used mainly non-steroidal anti-inflammatory drugs, glucocorticosteroids, antibiotics.

Despite the wide range of medicines in pharmacies of Ukraine, many of them have a number of shortcomings and, in addition to the therapeutic effect, have a side effect on the body of the patient.

Undoubtedly, the medicines of individual extemporaneous preparing have advantages over the medicines of industrial production. When they are manufactured, a minimum amount of auxiliary substances is used, which reduces the probability of occurrence of side effects.

We conducted an analysis of the extemporaneous formulation used in the treatment of inflammatory diseases of the joints. The analysis was carried out during the practice on pharmacy technology, studying the

pharmaceutical activity of the pharmacy, sites pharmacies, which produce an extemporaneous drugs and information which are in the methodical recommendations «Extemporaneous formulation».

Among analyzed prescriptions, the largest share is taken by semi-solid drugs, namely, liniments. Among the active ingredients, the most common are: local anesthetics, irritating and anti-inflammatory substances. This is due to the clinical manifestations of arthritis and other diseases of the musculoskeletal system.

Aim. In this aspect, the aim of our research was to improve the composition of the extemporaneous ointment for local treatment of arthritis.

Materials and methods. As a research object, a multicomponent ointment was selected which, due to its composition, has antimicrobial, anti-inflammatory and analgesic effects. The carrier functions are performed by the lanolin-vaseline base, which has a number of disadvantages, namely, does not provide sufficient release of the active ingredient from the composition, does not contribute to the penetration of active ingredients into the tissues.

One of the main criteria for the effectiveness of ointment is the degree of release of the drug. Therefore, the strengthening of penetrating ability for external dosage forms, in our opinion, is very important.

In our opinion, for the intended enhancement of the penetration effect, it is advisable to introduce into the composition of the chosen composition dimethyl sulfoxide, which, along with anti-inflammatory activity, is a penetrator and does not have pronounced side effects in skin applications in a concentration of up to 40%.

In order to justify the type of basis and the expediency of introducing dimexid into the ointment, we conducted biopharmaceutical studies of model specimens of ointments by diffusion into agar gel method.

As penetrating components, propylene glycol and polyethylene oxide-400 were also used.

Taking into account the solubility of the active components, samples, which contain dimethyl sulfoxide, were injected in dissolved form, and in the other by the type of suspension.

Due to the fact that the selected penetrators do not mix with vaseline, emulsifiers were introduced into the model specimens.

Results and discussion. The degree of diffusion of salicylic acid from the samples studied was determined by the diameter of the colored zone formed during its interaction with the solution of iron oxide chloride introduced into the agar gel. The diameter of the painted area was measured every hour for 6 hours. and after 24 hours.

The obtained results indicate that the introduction of dimethyl sulfoxide into the ointment has led to a significant increase in the diameter of the colored zone, which makes it advisable to use it as a penetrator and activator of absorption of active substances. The highest rate of release is ensured by the use of the emulsifier # 1 to obtain the emulsion o/w.

In the development of ointment technology, we investigated the effect on the quality of the ointment of the following factors: the method of administration of active components; mixing sequence of ointment components; temperature regime.

Conclusions. Thus, the conducted studies have proven the feasibility of introducing into the ointment an absorption activator – dimethyl sulfoxide. This allowed to increase the release of active substances. The technology of the ointment of the improved composition in the conditions of the pharmacy is substantiated.

IMPROVING THE TECHNOLOGY OF EXTEMPORAL OIL SUSPENSION

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Introduction. One of the main advantages of thermal recipes is the ability to rationally combine drugs. Another advantage is that pharmacotherapy in terms of the bioavailability of medicinal substances from finished medicinal products is inferior to medicinal forms prepared in pharmacies (solutions, aqueous extracts, mixtures), suppositories.