

**SUBSTANTIATION OF THE RATIONAL COMPOSITION AND TECHNOLOGY OF  
EXTEMPORAL GEL WITH TANNINUM**

Alhzavi Yu. S., Oliinyk S. V.

Scientific supervisor: Yarnykh T. G.

National University of Pharmacy, Kharkiv, Ukraine

sveta\_oleinik@ukr.net

**Introduction.** In all developed countries of the world, extemporaneous drugs are used only on prescription and with a prescription.

Extemporaneous formulation fills the shortage of drugs, expands the freedom of choice of doctor and patient in treatment. Extemporaneous drugs should be manufactured when mass production of finished drugs is unprofitable, but they are vital for a certain contingent of patients.

Pharmacy production of medicines in Ukraine is regulated by the order of the Ministry of Health of Ukraine № 812 of 17.10.2012 "On approval of the rules of production and quality control of medicines in pharmacies",

HFC 2nd edition, contains improved pharmacopoeial articles on extemporaneous formulation:

- non-sterile drugs manufactured in pharmacies;
- calculations in the manufacture of drugs in pharmacies;
- soft medicines made in pharmacies;
- powders made in pharmacies;
- suppositories and pessaries made in pharmacies.

In addition, the order of the Ministry of Health of Ukraine № 398 from 01.07.2015 approved the Instruction ST-N of the Ministry of Health 42-4.5: 2015 "Requirements for the manufacture of non-sterile drugs in pharmacies", as well as guidelines Extemporaneous formulation (technology, analysis, application)».

The ointment base is a carrier of drugs and provides the volume and the desired properties of the ointment. The choice of base depends on the physicochemical properties of the injected substances and the nature of the ointment. The base, which provides the maximum therapeutic effect of the ointment, must meet the requirements of HFCs.

**Aim.** Scientific substantiation of rational composition and technology of extemporaneous gel with tanninum.

**Materials and methods.** The methods of system analysis, observation and generalization were used in the work.

**Results and discussion.** Until the middle of the XX century, only natural tannic acids were used, which were extracted mainly from ink nuts of oak bark. However, in 1950, thanks to the development of chemistry, a cheap way to obtain artificial tannin was found. Synthetic tannin, showing all the properties of natural tannic acids, at the same time surpasses them in a number of criteria:

- synthetic tannin can be obtained in pure form, while natural cannot get rid of impurities;
- due to the convenient consistency, it became possible to more accurately measure the dose;
- plants from which natural tannic acids are obtained are not subject to control, while the production of artificial tannin is controlled at all stages.

Another advantage of synthetic tannin is a longer shelf life. In addition, it is not a dye, unlike most natural compounds.

Today only one artificial tannin is known. It is used to make a number of extemporaneous drugs (ointments, creams, solutions). One of the most well-known industrial drugs is Delaskin (Derma-Pharm, Germany) – an effective astringent in the form of cream and powder (0.4%), as well as in the form of concentrated bath additives. In some European countries (Poland, Belgium, Slovakia, Italy, Hungary) tannin is better known as Tamol RR, which is available in the form of a lotion.

Mild drugs based on synthetic tannin are designed to relieve swelling, irritation and itching, help reduce pain and local inflammation. On healthy skin, it acts as an antiperspirant, reducing sweating and sebum.

In the production of therapeutic and prophylactic drugs (ointments, gels) are widespread: collagen gels, gels of polysaccharides, gels of clay minerals, gels of polyethylene acids, emulsion waxes, etc.

Among the great variety of polymeric materials used as carriers, there is some interest in polymers of acrylic acid, called Carbopol 934 P, 940 P, 941 P and their analogues – "Akmid", "Arespol". The high degree of swelling of polymers of acrylic acid in various solvents, extremely strong ability to thicken, the stability of viscosity properties in a wide range of temperatures and pH values determine the possibility of their use for the manufacture of ointments, gels and liniments.

A feature of soft dosage forms based on carbopol is the possibility of introducing into their base various substances, hydrophobic liquids and alcohol solutions. At the same time stable suspensions without additional introduction of emulsifiers are formed.

Gels with a concentration of polymers of acrylic acid in the range of 0,5-1,5 % have optimal structural and mechanical characteristics, good fluidity and viscosity, which allow to ensure the highest efficiency of the drug.

**Conclusions.** Thus, on the basis of data on the composition of the extemporaneous formulation of mild dosage forms, the hydrophobic basis of the extemporaneous ointment with tanninum was replaced by hydrogel.

Since, for extemporaneous manufacture, it is advisable to use a ready-made concentrated gel with well-defined values of viscosity and pH, the compositions were obtained using pre-prepared gels of polymers of acrylic acid (on based on 0,5 % and 1 % Arespol sodium gels). Manufacturing was carried out using standard pharmacy equipment (stirrer and mortar).

## THE RELEVANCE OF CREATIONS OF A SOFT DOSAGE FORM WITH EUCALYMINE

Harmash O. V., Herasymova I. V.

Scientific supervisor: Yarnykh T. G.

National University of Pharmacy, Kharkiv, Ukraine

iryna\_herasymova@ukr.net

**Introduction.** Modern medicine has in its arsenal a variety of drugs in nature and purpose for the treatment and prevention of purulent-inflammatory infections of the skin and mucous membranes. However, the need for highly effective, affordable domestic medicines is not fully satisfied. The most used drugs for the treatment of this pathology, namely antibiotics and some synthetic chemotherapy drugs, cause the development of drug resistance in microorganisms. The introduction of new generations of antibacterial drugs into clinical practice solves the problem only for a short time, since