BIOPHARMACEUTICAL STUDIES IN DEVELOPMENT OF OINTMENT FOR PYODERMATOSES TREATMENT

Gomeniuk V. D.
Scientific supervisor: assoc. prof. Gerbina N. A.
National University of Pharmacy, Kharkiv, Ukraine
lerikgom@mail.ru

Introduction. Today, the problem of squamous skin diseases has not lost its relevance. The prevalence of pyoderma reaches a high level, accounting for 25-60% of the total number of applications with dermatoses. Pioderma leads to loss of work capacity, cosmetic and psychological problems, which is why they are one of the leaders among the diseases of the dermatovenereological profile.

In the treatment of pyoderma, a special place is taken by preparations of plant origin, which are easier to digest by the body, provide balance and complexity of action and minimize the number of allergic and adverse reactions.

Based on literary sources, we have substantiated the choice of natural active pharmaceutical ingredients - dry extracts of aloe vera and oak for the development of ointment for pyoderma treatment. The chosen combination of active substances will provide antimicrobial, antifungal, anti-inflammatory and drying properties, which will promote rapid skin cleansing and healing of purulent wounds.

The **aim** of the work is the choice of the optimal ointment composition for the creation of a semisolid dosage form based on dry extracts of aloe vera and oak for the treatment of pyoderma.

Materials and methods. To select the optimal ointment basis, 3 model samples were prepared using different carriers: hydrophilic, emulsion type o / w and w / o, which included 2 g of each of the dry extracts. The criterion for evaluating the samples was the speed and degree of release of active substances. The determination was carried out by direct diffusion in 2% agar gel containing a solution of iron (III) chloride as an indicator. The degree of release of the sum of active substances was estimated by the diameter of the colored zone.

Results and discussion. The results have shown that the most active substance release was provided by oil / water emulsion base (the coloring zone was 13 mm), a smaller coloring zone had the water / oil type emulsion base (8 mm) and the lowest release was observed from the hydrophilic base (5 mm).

Conclusions. Thus, on the basis of conducted biopharmaceutical studies, an optimal ointment composition of type oil / water was selected which contains: hydrophilic non-aqueous solvents (polyethylene oxide-400 -10,0 and propylene glycol-10.0), corn oil - 20,0, Emulsifier №1 - 8.0 and water purified to 100.0.

DEVELOPMENT OF COMPOSITION AND TECHNOLOGY OF TABLETS BASED ON MEDICINAL PLANTS FOR TREATMENT AND PREVENTION UROLITHIASIS

Gurova K. D.
Scientific supervisor: assoc. prof. Spiridonov S. V.
National University of Pharmacy, Kharkiv, Ukraine
ztl@nuph.edu.ua

Introduction. The problem of urolithiasis remains valid throughout the world. The problem of urolithiasis remains relevant worldwide, due to the high prevalence among the population, the severity and duration of the course of the disease and its complications, and the high rate of relapse of stone formation. The growth of the morbidity of the population is associated with changes in social and living conditions (stress, hypodynamia), environmental factors, quality of food, drinking water and other factors. The incidence of the disease has a tendency to increase, which makes the problem of urolithiasis even more relevant. There is a tendency to increase this morbidity of the population of Ukraine in all age groups.

Urolithiasis occupies the second place in the structure of the disease for kidney and urinary tract diseases, and the fourth one - among the causes of disability due to urological pathology. Urolithiasis occurs on all continents and in all countries with a frequency of 10-30 cases per 1000 adult population and is 30-40% of all urological diseases. There is currently no single concept for the etiopathogenesis of urolithiasis,

as its development is influenced by the state of many organs and systems of the organism, as well as poor socio-economic conditions, pollution of the environment, etc. In view of this, urolithiasis refers to the so-called diseases of civilization.

Among the risk factors for the formation of stones leading place is congenital enzymopathy (tubulopathy), defects of anatomical development of urinary tract, hereditary nephrotic and nephrite-like syndromes. The most common are the following enzymopathies: oxaluria, urateuria, generalized amination, cystinuria, galactosemia, fructoseemia.

At the heart of the formation of stones lie colloidal chemical and biochemical processes. Due to the inflammation of the bowl and the desquamation of the epithelium, the resulting organic material becomes the nucleus (matrix) of the formation of stones. According to the crystalloid theory, the supersaturation of urine with crystalloids in the amount passing through the limits of solubility, leads to their fall in the sediment and the formation of a stone.

Therefore neobhodimo povыsyt alkaline reaction of blood snyzyt Inflammation in the joints. It is possible to do this with the help of herbal remedies.

Aim. Development of composition and technology of tablets based of medicinal plant raw material for the treatment and prevention of urolithiasis**.**

Materials and methods. We used pharmacotechnological methods, which are given in Statement pharmacopoeia of Ukraine. Flowability, angle of repose, bulk density, tablet hardness to abrasion, crushing, disintegration of tablets were determined.

Results and discussion. We conducted a brief analysis of the domestic market of drugs used for nephrology, in which case urolithiasis. At present, preparations in the form of medicinal raw materials and assemblies produce the most - about 34%, somewhat less in the form of tablets - 23%, in the form of liquid LF (drops) -11%, further in the form of injectable solutions, and in soft medical forms. The smallest proportion is observed in oral solutions, in capsules, in the form of effervescent tablets, as well as in other forms of medicine.

Herbal preparations make up about 70%, synthetic drugs about 20%, the share of combined drugs is 10%. The foregoing suggests that herbal preparations are quite popular among doctors and the population in the treatment of nephrology.

Thus, the given data once again confirm the expediency of the production of tablet drugs on the basis of medicinal plant material for the treatment of nephrology diseases, including urolithiasis.

On the basis of the researches of literary sources and received information on the application of herbal remedies for the treatment of urolithiasis, we proposed the following composition of the medicinal composition, which include Rosmarinus officinalis, Equisetum arvense, Levisticum officinále.

The primary task in the development of the technological process is to study the basic technological properties of the components of the medicinal form, among which special attention was paid to such technological parameters as fractional composition, flowability, angle of repose, bulk density, humidity.

From the aforementioned raw materials, powders were prepared by grinding, sifting them, mixing them in the appropriate proportion, and studying the technological parameters of the resulting mixture.

The mixture was unacceptable technological properties, low flowability of the intermittent nature of the currents, confirming too high angle of repose. The reason for this is also a high humidity index. The low unacceptable properties of the mixture of powders required their correction, which was proposed by us to do with wet granulation.

In this regard, we needed to select the necessary excipients, which would provide such important technological indicators as strength, ductility and disintegration of tablets.

The first step in choosing auxiliary substances was the choice of a moisturizer. To this end, we wetted a mixture of powders with different moisturizers, such as potato and methyl cellulose starch solutions (at concentrations of 1, 3 and 5%), received a granulation mass, produced its tabletting and examined the technological characteristics of the resulting tablets.

Increasing the concentration of any moisturizer helps to increase the strength of the tablets for erosion. We also see that a solution of starch even at a concentration of 5% does not provide the necessary resistance to abrasion.

The methylcellulose solution from the concentration of 1% showed a better result than a 1% starch potato starch. A solution of 3% methylcellulose provided not quite the best, but rather high abrasion resistance, which was about 87%. And although the larger, but again not the best (89%) indicators of erosion (resistance to abrasion) had a solution of methylcellulose 5%, it was too thick for our mixture of powders, in addition to forming granulation mass that was difficult to granulate, we proposed the use of 3% solution of methyl cellulose. The granulate has pleasant technological properties (good flow, low angle of natural slope), but the tablets obtained from it, have not only low erosion, but also low crushing strength.

We adjusted these indices by adding such binder auxiliary substances as calcium phosphate dibasic and mannit. In both cases, the strength of these tablets is increased for erosion. But the greatest ability to increase resistance to abrasion has mannit. It provided a high level of abrasion resistance from a concentration of 0.8%. At the same time, calcium phosphate dibasic did not provide this resistance to abrasion, even at a concentration of one percent. At the same time, with a measure of erosion, we determined the strength of the tablets to be crushed. Were used the same substances.

The highest index of crushing strength was observed with the addition of mannitl, which also provided a high-strength tablet (greater than 50H) of a concentration of 0.8% (Calcium phosphate dibasic provides the required strength only from the concentration of 1%). That is why he (mannit) was proposed by us as a binder.

We also conducted a quality control of the tablets. According to indicators such as the flowability of the tablet mass, its angle of repose, the humidity, and the strength of the tablets against crushing, the strength of the tablets on the fate, the races of their decay, we see that the weight for tabletting has high (pleasant) technological parameters, and the tablets for the given indicators meet the pharmacopoeial requirements.

Conclusions. In result of conducted researches the composition and technology of tablets on the basis of medicinal raw material for prophylaxis and treatment urolithiasis has been obtained.

Was found, that technological properties of tabletting mass and tablets from it corresponds to the requirements of State pharmacopoeia of Ukraine.

DEVELOPMENT OF THE COMPOSITION AND TECHNOLOGY OF EFFERVESCENT TABLETS

Ismail Ajub Khaki,
Scientific supervisor: ass. prof. Yudina Yu.V.
National University of Pharmacy, Kharkov, Ukraine
eco3557@gmail.com

Introduction. One of the most important tasks of modern pharmaceutical technology is the creation of dosage forms that enhance the bioavailability of medicines. This is achieved in various ways, among which the use of special excipients (gas-forming mixtures, superdisintegrants, complexing agents, solubilizers) and technological methods (preparation of solid dispersions, ultrasound and cryomicroconisation) that increase the solubility or dispersibility of drug components can be distinguished. Among the group of rapidly dissolving dosage forms special place belongs to effervescent preparations in which the effect of rapid disintegration is achieved due to introduction of gas-forming components. The advantages of fast-dissolving dosage forms include high bioavailability, the possibility of reducing side reactions, combining mutually reactive components and correcting the unpleasant organoleptic properties of medicinal substances.

Aim. The aim of the present research was the development of technology and quality standards for dry granular effervescent beverages containing a complex of vitamins and adaptogens (with extracts of Eleutherococcus, Rhodiola rosea and tincture of ginseng supplemented with vitamins of groups C and B).

Materials and methods. In order to select the optimal beverage composition, 9 granules model (3 formulations for each type of beverage) are made, consisting of two fractions: carbonate and acidic. The ratio of carbonate and acid components was changed from 1.3: 1 to predominance of acidic (1: 1), creating a pH of 4.0-5.0. This allowed to ensure the completeness of gas formation and give a pleasant sour taste to the drinks. To provide an equal mass of both fractions, which was convenient in the technological aspect,