Фармак

Матеріали

VI НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ ШКОЛИ МОЛОДИХ НАУКОВЦІВ ПАТ «ФАРМАК»

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In present investigation, such disintegrants as Polyplasdone XL-10 crospovidone, sodium croscarmellose, SSG and MCC Sanaq ®burst were studied. The superdisintegrants provide instantaneous disintegration of a tablet after putting it on the tongue. Effective superdisintegrants provide improved compressibility and compatibility besides, they don't have any negative impact on the mechanical strength of formulations containing high-dose drugs.

The sugar based excipients display high aqueous solubility and sweetness, and hence impart taste masking property and provide pleasing mouth feel. The sugar based excipients such as lactose, mannitol, sucrose Compri O, Ludiflash were studied in this investigation.

Additionally, we studied diluents MCC Vivapur® 102, MCC Vivapur® 112, MCC Vivapur® 200, Prosolv® SMCC HD 90. Tablube MgSt grades Superior Vegetable, Premium Vegetable, Micronized Vegetable, calcium stearate were used as lubricants in quantity of 1 % in the formulations.

Before compression, the powder mixture from each formula was evaluated by several parameters such as flowability, bulk density, tapped density, compressibility index, and Hausner ratio. All the prepared tablets were evaluated for the following parameters: uniformity of weight, tablet hardness testing, the friability test, the disintegration time, wetting time test.

Results: Orally disintegrating tablets of metfomin were prepared by direct compression method. Based on the results of pre-compression parameter, it can be concluded that all formulas have good flowability. As the mixture for pressing was characterized by satisfactory flow velocity, the obtained tablets were uniform weight with acceptable variation (< 5 %). The harder tablets were obtained in formulas containing MCC Sanaq®Burst, as well as Polyplasdone XL-10 crospovidone. The higher value of hardness for metformin tablets was observed when using MCC Vivapur 200 or Prosolv SM HD 90 SMCC. The disintegration time less than 3 min observed in all formulations except #15, meets the requirements of the European Pharmacopoeia and State Pharmacopoeia of Ukraine for ODT. Wetting time test is not a standard test, but it is useful for quality control and provides a correlative evaluation of water absorbsion. The wetting test uses minimal quantity of water, which represents the amount of moisture available in the oral cavity. The wetting time for all formulations of tablets was less than 60 s, except #5-9, 13-15. The faster wetting time of the tablets produces better disintegration time.

Conclusion: Using Graeco-Latin squares design, the influence of four groups of excipients on technological characteristics of metfomin orodispersible tablets was evaluated.

JUSTIFICATION OF AUXILIARY SUBSTANCES COMPOSITION AT DEVELOPMENT OF VENOTONIC ACTION GEL

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Introduction. According to the International Union of Phlebologists, various forms of venous pathology occur in 60-75% of the planet's population. In Ukraine, varicose veins of the lower extremities are observed in 25-33% of women and in 10-20% of men, which makes it possible to safely attribute varicose disease to "diseases of civilization." Of this ailment sufferer mostly people of working age, but in recent years signs of venous insufficiency are detected even in 10-15% of high school students. At present, the basic principles of thrombophlebitis and varicose veins treating are well developed, and effective drugs are recommended for these pathologies. Essential value in the treatment of varicose veins and thrombophlebitis, have preparations of plant origin (Venoton, Escuzan, Esplan, etc.). Therefore, the role of medicinal plant material as a source of biologically active substances in the development and implementation of effective medicines is quite large.

At the Industrial Pharmacy Department of the National University of Pharmacy, technology was developed for obtaining a dense extract from a mixture of herbal medicinal plants: horse chestnut (Aésculus hippocastanum), Japanese sophora (Styphnolóbium japónicum), herb of Melilótus officinalis and Sýmphytum officinalis roots. The thick extract was standardized by the content of the polyphenolic compounds (gallic acid). Preclinical pharmacological studies have established the level of anti-inflammatory and venotonical action and substantiated the concentration of dense extract in

the medicinal products of systemic and local use.

Aim of the study. This work is devoted to the substantiation of auxiliary substances choice in the development of a gel composition with a dense extract of venotonic action.

Materials and and methods. Guided by theoretical data on the technology of semisolids manufacturing to the range of research objects included the following groups of auxiliary substances: gelling agent (carbomer ultrez 21), solvents (water purified, propylene glycol, macrogol 400, glycerol, ethanol 70%), neutralizers (tromethamol) and the dense extract itself. Physical-chemical (solubility, pH) and structural-mechanical (viscosity, shear stress) methods of research and visual observations have been used.

Results. The introduction of an active pharmaceutical ingredient (API) into the basis of a semisolid medicinal product may be done by type of solution or suspension. A well-known fact is that APIs administered by solution type have a higher bioavailability profile and therapeutic efficacy. Therefore, the first stage of experimental studies was to study the solubility of the dense extract. To this end, solutions were prepared in a ratio of 1:10 of the thick extract and solvent (purified water, propylene glycol, macrogol 400, glycerol, ethanol 70%). The effect of temperature on the solubility of the dense extract was studied, solubility was analyzed visually. According to the results of the experiment, it was found that the dense extract is well soluble in glycerin (t 20 ± 2 °C), purified water and propylene glycol (t 45 ± 2 °C), poorly soluble in macrogol 400 and ethanol 70%. The leading place in the technology of gel forms development is occupied by carbomers, which are distinguished by a number of advantages from the rest of the existing gel formers and are today the most used. Depending on the pH of the medium, they are capable of forming structures of varying viscosity, so the next stage of the research was to determine the pH interval at which the maximum structural viscosity would be observed. Carbomer ultrez 21 was used in the work, neutralization was performed with tromethamol solution. Determination of structural viscosity and analysis of viscous-plastic properties were carried out on a rheoviscometer Rheolab QC of firm Anton Paar, Austria. It was established that ultrez 21 carbomer forms consistent structures that have maximum viscous-plastic properties in a wide range of pH 5.5-8.5.

Conclusions. According to the results of experimental research, the composition of auxiliary substances necessary for the development of a gel with the dense extract of venotonic action has been substantiated.

BIOTECHNOLOGICAL ASPECTS OF THE CREATION OF COMPLEX PROBIOTIC REMEDY FOR ACNE TREATMENT: THE DEFINITION OF THE POSSIBILITY OF COMBINED USAGE OF PROBIOTICS WITH PREBIOTICS AND SOME ANTIMICROBIAL AND ANTI-INFLAMMATORY COMPONENTS

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Introduction. Acne - inflammation of the sebaceous glands and hair follicles, which develops on the background of seborrhea and changes in the chemical properties of sebum.

A large number of dermatologists attribute acne to the disease of the "transitional" age, but this, so-called, "physiological acne", the consequences of which occur spontaneously. Indeed, about 60% of acne is solved independently or requires little intervention. But even with such acne, the effects can be expressed by the appearance of scars and hyperpigmentation, which are difficult to treat.

Treatment of acne is determined by the severity of the pathological process and the nature of its course. Due to the diverse nature of the causes causing acne and the different mechanism of occurrence of the effects of the disease, acne treatment is a complex process and is accompanied by relapses. Therapeutic methods for fighting acne are to treat affected areas, prevent complications (scarring, dyshhromias), and stop the emergence of new lesions. Topic therapy is the standard of treatment for acne and is prescribed to patients regardless of the severity of the disease. External