RESEARCHES FOR THE CREATION OF ORAL SUSPENSION ON THE BASIS OF SILICS

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Introduction. Enterosorption is a method of detoxification of the body, based on the removal of toxic substances from the gastrointestinal tract with the introduction of sorbents. The purpose of all methods of enterosorption is to remove from the human body various undesirable components that play a role in the etiology and pathogenesis of various diseases. The variety of enterosorbents with different properties permits clinicians to select the appropriate one for correction of the body medium. One of them is highly dispersed silica.

It is known that the most effective way of introducing enterosorbents is oral, when the process of persorption begins in the stomach and completed in a thin bowel. As you know, suspensions are liquid dosage forms, the quality, efficiency and safety of which depend on the degree of medicinal substances triturating, the nature of the dispersion medium, the effectiveness of stabilizers and preservatives, technology and storage conditions. Therefore, when creating the composition of suspension much attention is paid to selection of active and auxiliary substances, to development of the rational technology and storage conditions, in which it is possible to provide the necessary therapeutic activity.

Aim. The purpose of our work was to develop the composition of the liquid dosage form (suspension) on the basis of silics for usage in the treatment of diarrhea.

Materials and methods. For realization of researches the following methods were used: physical, physical-chemical, microbiological.

Results and discussion. As stabilizers, natural and synthetic high-molecular compounds are applied, namely: apple pectin, methyl cellulose, polyvinyl pyrrolidone, sodium carboxy methyl cellulose. Prepared samples of suspension have been investigated on the following parameters: original appearance, time of stratification, re-suspendability. On the basis of the obtained results of suspension's samples the optimal amount of stabilizers was selected and their physical and chemical properties (stability, viscidity, pH, surface-tension) was studied. The sorption activity of the experimental samples of the suspension was studied in relation to the most common microorganisms that induce intestinal diseases with diarrhea syndrome.

Conclusions. Based on the obtained results of researches the optimal composition of oral suspension with silics was developed. It has been proved that the selected auxiliaries do not affect the sorption activity of the developed suspension.

STUDY SELECTION OF EMULSIFYING AGENT FOR ANTI-ALLERGIC EMULSION

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Introduction. The development of prescription mixtures of drugs depends on many factors, one of which is the solubility of the constituents chosen for the composition. Stability is an important characteristic of the preparation obtained. The instability and poor solubility of certain mixtures makes it difficult to prepare the preparations. One way to solve this problem is to introduce a surfactant into the formulation. In modern drugs, synthetic surfactants are widely used. Emulsions belong to microheterogenic systems, which are quite unstable in storage. The stability of emulsions is very important, their stratification violates the precision of the dosage of the active substance. To obtain stable emulsions it is necessary to add stabilizers. Among other stabilizers of emulsions, surfactants deserve the greatest attention due to their polyfunctionality. Preference is given to such surfactants that are safe for humans.

Aim. Experimentally substantiate the choice of an emulsifying agent in the development of new antiallergic drugs in the form of emulsions.

Materials and methods. In carrying out the studies, Dimethindene maleate – anhistamine substance of II generation was used. As emulsifiers were used tween-80 and plant-M.

Results and discussions. During the work, samples of emulsions for the treatment of allergic manifestations of the skin with dimethindene maleate and using various emulsifiers were prepared. To obtain stable emulsions of the o/w type, hydrophilic emulsifiers with a hydrophilic-lipophilic balance of 8-18 are used. Therefore, as emulsifying agents, we chose tween-80 and plant-M. Tween-80 refers to oxyethylated sorbitans, it has high lipophilic properties and is readily soluble in water, also increases the colloidal and thermal stability of the dosage form. Planta-M forms stable emulsions with polar and non-polar oils.

Model samples of emulsions were subjected to investigation of organoleptic characteristics: color uniformity, absence of phase separation, odor. To study the stability of emulsions, the samples were stored at room temperature 15-25 °C and in a refrigerator at a temperature of 2-8 °C for 30 days. As a result of the study of stability, phase separation was found in samples prepared using Tween-80. While samples with the Planta-M emulsifier were stable for the entire shelf life.

Conclusions. As a result of the work, an optimal emulsifying agent was chosen for the preparation of an antiallergic emulsion, which will be used for further research.

STUDY OF PHYSICAL AND CHEMICAL PROPERTIES OF ANTI-HISTAMINE SUPPOSITORIES

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Introduction. Based on the results of the preliminary literature analysis of the availability of children's medicines on the modern pharmaceutical market, we previously proved the urgency of creating new medicines for children of different pharmacological actions, rational dosage form for young children – suppositories was proved and the most actual pharmacological activity of these preparations – antihistamine was chosen.

According to the analysis of literature sources, we used loratadine hydrochloride as the active substance, which proved to be an effective second-generation antihistaminic substance without pronounced side effects, it is allowed for use in children's practice. As the second active ingredient, a 30% oil solution of α-tocopherol acetate (vitamin E) was introduced into the suppository, which has an immunostimulating, anti-inflammatory effect and protects the walls of the intestine from irritating action.

Aim. The purpose of this work was to select a rational suppository basis for antiallergic extemporal suppositories for children.

Materials and methods. In the course of the studies, loratadine hydrochloride and a 30% oil solution of α-tocopherol acetate were used as active substances. As suppository bases, a solid fat type A, Witepsol W and a Suppotsire were chosen.

Results and discussions. To conduct research, we prepared model suppositories by pouring out method. Further, the physical and chemical properties of the obtained samples were studied. The melting temperature and the time of complete deformation of the suppositories were determined. Based on the results of the determination of the melting point and the time of complete deformation of the suppositories, it can be asserted that neither the base nor the active substances influence the melting point of the suppositories – it remains within the limits of statistically permissible deviations from the literature data and meets the requirements of State Pharmacopoeia of Ukraine.

Thus, based on the results of our studies, we came to the conclusion that, as suppository bases for the following studies, it is necessary to dwell on such bases as solid fat type A, Witepsol W and a Suppotsire.

Conclusions. As a result of studying the physical and chemical properties, it was determined that it is necessary to continue research on the choice of a rational suppository basis.