плавлення, час повної деформації. Крім того, виявляється, що розподіл речовини в ліпідній фазі є нерівномірним і негативно впливає на характеристики вивільнення азітроміцину.

Для збільшення швидкості та ступеня вивільнення азітроміцину із жирових основ було використано два різних підходи. Використання поверхнево-активних речовин значно збільшувало вивільнення речиини з препаратів, виготовлених на основі жирних основ. Застосування сечовини або повідону К25 у поєднанні з азітроміцином у вигляді фізичної суміші або твердої дисперсії збільшувало швидкість і ступінь вивільнення засобу з жирових супозиторіїв у будь-якій значній мірі, що дало можливість використовувати їх для подальших досліджень.

Висновки. На підставі отриманих результатів було обрано перспективні допоміжні речовини для подальших досліджень з метою розробки ректальних супозиторіїв для дітей призначених для лікування інфекційних захворювань.

RESEARCH ON THE SELECTION OF A RATIONAL BASE IN THE COMPOSITION OF HARD CANDY LOZENGES TO PROMOTE SMOKING CESSATION

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Introduction. Smoking is a serious global medical and social problem, which is characterized by high prevalence among different sexes and ages of the population, negative impact on the whole human body and rapid chronic addiction. Usually the treatment of tobacco addiction is a rather long and complicated process associated with difficulties in overcoming the syndrome of nicotine withdrawal, which manifests itself in the form of both psychological and physical disorders. The use of drugs is a key point of multicomponent care for patients in the treatment of tobacco dependence, which can improve the quality of patients' life. To do this, use nicotine-containing and nicotine-free drugs in various dosage forms: chewing gum, tablets, lozenges, sprays, transdermal systems (skin patches), buccal and nasal inhalers and more. Due to the pleasant taste, lightness and ease of administration, rapid onset of action in the oral cavity, and therefore increased bioavailability, as well as reducing gastric irritation and avoiding first-pass metabolism, lozenges are a rational dosage form to solve this problem.

Aim. Conducting research to develop the composition of hard candy lozenges to promote smoking cessation.

Materials and methods. The object of our research – hard candy lozenges (HCL) with dry extracts of green tea and blueberries, which, due to the rich composition of biologically active substances and various effects on the body, will help cope with nicotine withdrawal symptoms, help to quickly eliminate psychological dependence on smoking and improve general physical condition of smokers. The following research methods were used in the work: organoleptic (appearance); physico-chemical (size (thickness, diameter), moisture content, pH determination); technological

(uniformity of mass, resistance to crushing, friability, disintegration time (dissolution), molding time); mathematical (statistical processing of results).

Results and discussion. For many years, the main ingredient in lozenges was sucrose, which, unfortunately, to date has not allowed to obtain high-quality hard lozenges, as concentrated solutions of this substance form crystals (crystallize) or grains (granular structure) when cooled, which can lead to deterioration of appearance and quality of HCL. Therefore, in order to control the crystallization (granularity) of sucrose in the production of lozenges, invert and corn syrups are additionally used as forming substances, which, moreover, have the ability to enrich the taste of products. However, at the same time, the presence of these syrups leads to increased hygroscopicity of HCL.

In order to improve the appearance and quality of HCL, as well as to reduce the harmful effects of sugars on the human body, instead of sucrose as a base it is proposed to use isomalt under the trade name galenIQ™ 900 (Beneo-Palatinit GmbH, Germany).

HCL were prepared by pouring into a mold by heating and solidifying the resulting mass. Sample №1 contained only isomalt as a base, sample №2 contained a mixture of isomalt with corn syrup. The results of determining the rheological parameters of the formed masses before pouring, which was controlled at D_r = 27.0 s^{-1} and a temperature of 40 °C, showed that sample №2 was characterized by a relatively high value, which may adversely affect the homogeneity of dosing and, accordingly, the quality of HCL. In appearance, all formed test specimens had a spherical shape with slight variations in diameter (about 1.1 cm) and thickness (≈ 0.45 cm). It was found that the deviations from the average mass of both samples of HCL were within the pharmacopoeial range, but greater variations in weight showed the sample №2, which can be attributed to the hygroscopicity of corn syrup present in its composition. In addition, sample №2 in contrast to sample №1 was sticky to the touch, which will negatively affect the consumer properties of the finished product. Testing for the strength of lozenges showed that samples №1 and №2 are characterized by close values of friability (≈ 0.3 %) and resistance to crushing (in the range of 123-127 N). The percentage of moisture in all prepared lollipops did not exceed 1.0 %, which corresponded to the optimal range of this indicator for HCL (0.5-1.5 %). The pH of the samples was within acceptable limits for medications used in the oral cavity. The samples had similar values in terms of dissolution time, but the formation of sample №1 occurred faster than that of sample №2, which is again due to the different composition of excipients.

Conclusions. Thus, from the point of view of economy and technological effectiveness the sample №1 is more expedient and rational as it had: less quantity of the used substances; lower viscosity and heating temperature of the solution to remove residual moisture; faster solidification with the formation of non-sticky lozenge compared to sample №2. Therefore, galenIQ™ 900 was chosen as the final base for HCL.