

Results and discussion. The concentration of resveratrol in the solution in a sample with a concentration of tween-80 1% after 6 hours was $5.54 \text{ g/ml } 10^{-5}$, in a sample with a concentration of tween-80 3% - $2.90 \text{ g/ml } 10^{-5}$ and in a sample with a concentration of tween-80 5% - $11.85 \text{ g/ml } 10^{-5}$.

The results of the experiment showed that the best bioavailability was in the sample with a concentration of tween - 80 5%. The smallest release figure was in sample with a surface-active substance with concentration of 3%.

Conclusions. It is expediently to administer tween - 80 at a concentration of 5% to the vaginal gel, which provides the most complete release of resveratrol.

PROSPECTS OF SEMISOLID DRUGS DEVELOPMENT FOR TREATMENT OF GINECOLOGICAL DISEASES

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Introduction.Improvement of medical care for women with urogenital infections is one of the important medical problems, the relevance of which is due to the high level and constant increase in morbidity, the chronic course of the infectious process and the lack of effective therapy. Infections of the vagina are the most common pathology in obstetric and gynecological practice. Despite the apparent progress of antibiotic therapy, it is still not possible to reduce the incidence of these infections.

Bacterial vaginosis is the most common cause of pathological vaginal discharge in women of childbearing age and is considered as vaginal dysbiosis, with increased growth of predominantly obligate anaerobic bacteria and a sharp decrease in the concentration of lactobacilli.

The leading role in the treatment of bacterial vaginosis is given by antibiotics and antiseptics. However, antibacterial drugs, along with the anti-inflammatory effect, cause pronounced dysbiotic disorders in numerous ecological niches, suppress general and local immunity, which enhances dysbiosis and creates favorable conditions for the development of recurrent forms of the disease: In this regard, great practical and scientific interest is the search for new correction methods of dysbiotic changes that would provide reasonable limitation of antibacterial load, would provide artificial physical and chemical detoxification of the body.

A rational dosage form for vaginal use is gels, positive properties of which include technological, economic, consumer, pharmacological and biopharmaceutical benefits. Gels are characterized by high viscosity at low concentrations (less than 1%), significantly emulsifies and suspends the ability, providing high bioavailability and prolonging the effect, significant bioadhesion, lack of irritating properties, microbiological stability, ease of use, compatibility with many groups of medicinal substances, etc. Thus development of the composition and technology of new drugs in form of gel with sorption properties for the treatment of vaginal diseases is promising and urgent task of modern pharmacy.

Aim. The purpose of this study was the theoretical substantiation and experimental development of the composition and technology of vaginal gel with sorption properties.

Materials and methods. Taking into account the need for a rational choice of excipients and technological methods that ensure the effective action of the active substances introduced into the medicinal product, it is advisable to study various gelling agents. The presence of such an important clinical symptom of BV, as abundant vaginal isolation, allows us to conclude that it is expedient to use hydrophilic bases possessing high osmotic properties. For conducting studies of the optimal composition of gels, commonly used concentrations of gel formers were chosen. Based on literary data, the concentration of sorbents was 10 % for all samples.

Results and discussion. On the basis of the study, were constructed a raw of advantages of sorbents (in terms of dry matter) according to the adsorption properties: Enterosgel> Aerosil> Polysorb> microcrystalline cellulose. Thus, enterosgel has the highest adsorption capacity.

The greatest adsorption activity have gel Carbopol and CSMA. Gels based on MC have the lowest adsorption capacity.

Apparently, the greatest adsorption activity have gels with sorbents on the basis of NaCMC, Carbopol and CSMA.

Gels based on MC have the lowest adsorption capacity. Further study of functional activity of gels based on MC is impractical.

The MCC Sorbent showed low results in an experiment of the study of the sorbents adsorption capacity, and was therefore excluded from further research.

Based on the research conducted, the composition of sorption gels has been developed:

Compose No. 1	Compose No. 2
Enterogel 15.0	Polysorb 10.0
Carbopol 0.3	Carbopol 0.35
sol.NaOH10% 1.2	sol.NaOH10% 1.4
Nipagin 0.15	Nipagin 0.15
Nipazole 0.05	Nipazole 0.05
Water purified to100.0	Water purified to100.0

Conclusion. It was defined functional properties of sorbents, gel bases and compositions of gels with sorbents by sorption of methylene blue and albumin. According to research results, optimal sorbents (polysorb, enterogel) and gel formers (copolymer of styrene with maleic anhydride, carbopol) were identified.

Rheological research on optimization of structural and mechanical properties of adsorption vaginal gels was conducted. Established sorbents and gel concentration in the range of rheological optimum. Experimentally proved optimum composition of adsorption vaginal gels based on Carbopol containing Enterogel 15 % and Polysorb 10 %.

STUDY OF ANTIMICROBIC ACTIVITY OF NASAL GEL WITH ESSENTIAL OILS IN ORDER TO SELECT A GELLING AGENT

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Introduction In recent years, there has been a significant increase in the number of patients with acute and chronic nasal diseases, their share in the structure of general ENT pathology is increasing. Inflammatory processes of sinuses often lead to the development of chronic bronchitis, bronchial asthma, pneumonia. One of the symptoms of upper respiratory tract (URT) disease is rhinitis

Aim. The purpose of our work was to develop the composition and technology of nasal gel for the treatment of rhinitis, which included essential oils of rosemary, lemon, eucalyptus and tea tree. To study the antimicrobial activity, three samples of nasal gel were obtained. As gelling agents, carbopol 980 (sample number 1), HEC (sample number 2) and Aristoflex (sample number 3) in the amount of 2% were selected.

Materials and methods. The antimicrobial activity of the prototype samples was studied in vitro by diffusion in agar method ("wells" method). This method is based on the ability of active substances to diffuse into agar medium, which has been previously inoculated with microorganism cultures. As test cultures used pure cultures: gram-positive microorganisms *Staphylococcus aureus* ATCC 25293, spore culture of *Bacillus subtilis* ATCC 6633, gram-negative culture of *Escherichia coli* ATCC 25922 and *Candida albicans* ATCC 885-653. In conducting experiments, one-day suspensions of bacterial microorganisms in physiological solution were used. Microbial loading was 10⁷ colony-forming microorganisms units in 1 ml of nutrient medium (CFU / ml).

Results and discussion. Data obtained experimentally indicate that the specimens No. 1 and No. 3 of the dosage form studied have a broad spectrum of antimicrobial activity and a significant antimicrobial activity in relation to the used test strains. The investigated sample of gel №1 shows a higher activity in relation to all used cultures of microorganisms compared with the action of sample No. 3 (*Staphylococcus aureus* - 17,8 ± 0,4 and 16,2 ± 0,4 respectively, *Bacillus subtilis* - 17,5 ± 0,4 and 15,2 ± 0,4 respectively,