

ANALYSIS OF PROBIOTIC PREPARATIONS ON THE PHARMACEUTICAL MARKET OF UKRAINE

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Introductions. In the treatment of vaginal candidiasis, almost all gynecological diseases occur in association with vaginal dysbiosis, and intensive antibiotic therapy with preservation on anaerobic microflora significantly complicates the dysbiotic disorders in the vagina and in other biotops of organism, leads to the formation of opportunistic microflora with numerous antibiotic resistance.

Traditional means and methods of therapy for infectious-inflammatory diseases are often ineffective for the normalization of vaginal micro-ecosystem; therefore, new approaches to treatment and methods that take into account the pathogenetic features of the disease are needed. That is why the treatment of any vaginal infectious disease is carried out in three stages. The first is aimed at reducing the titer of conditionally pathogenic bacteria, among which the majority of anaerobes. The second stage of treatment is aimed at the restoration of physiological vaginal flora, that is to increase the titer of lactobacilli and Bifidobacterium, the most important representatives of the vaginal microflora. The third stage is to increase the immunity of a woman for the development of resistance in the organism to opportunistic microorganisms.

Given that, along with high efficacy in oral administration, there is a large number of adverse reactions, most clinicians prefer an intravaginal route for the administration of drugs, which in efficiency is not inferior to oral therapy. It is more preferable because of less probability of development of adverse reactions, as well as the possibility of treatment for pregnant women.

Aim. The purpose of this work is the analysis of probiotic's drugs in the pharmaceutical market of Ukraine.

Materials and methods. When researching the drug market, the electronic resource of the State Register of Medicines of Ukraine, as well as the ATC (Anatomical Therapeutic Chemical (ATC) classification system) was used by WHO, as the international standard of the methodology for conducting statistical research on drug consumption in different countries.

Results and discussion.

According to the State Register of Medicinal Products of Ukraine as of March 2019, the range is as follows:

A07FA «microbial drugs»:

A01 – lactobacillus (3 trademarks);

A02 – saccharomycet honey (2 trademarks);

A05 – probiotics (0 trademarks);

A10 – other probiotics for internal use (0 trademarks);

A50 – other microorganisms and their combinations (0 trademarks);

A51 – lactobacillus and their combinations (2 trademarks).

G02 «Other drugs for the treatment of gynecological diseases»: 3 trademarks.

According to research results of countries producing probiotics, it has been established that foreign-made medicines are supplied to the domestic pharmaceutical market from 6 countries of the world. The main countries importing drugs for the treatment of dysbiosis are India, Canada and France total 80%.

According to the analysis of the pharmaceutical market of Ukraine, depending on the dosage form of release, it was found that they are represented by 4 types of dosage forms, the main of which are capsules 46,67%, lyophilisate 13,33%, drops of 33,33%, vaginal capsules 6,67%.

Conclusions. Dry probiotic drugs with probiotics in bottles in the form of lyophilized biomass are quite traditional and diverse in assortment. The use of solutions obtained by diluting dry probiotics is intravaginally inconvenient to use and results in the loss of more active ingredients. Vaginal suppositories that have a number of advantages when compared with other forms of medicine are effective and easy to use.

The suppositories are dispersed systems, which consist of a dispersed phase in which the acting components act as the dispersion medium, which is the carrier base.

Local, intravaginal administration of drugs in infectious and inflammatory diseases provides direct action on the lesion, the possibility of regulating the process of treatment by pharmacokinetics, avoiding the inactivating effect of several enzymes and reducing the degree and frequency of side effects. In order to expand the range of probiotic drugs for the treatment of vaginal candidiasis, it is expedient to develop the composition and technology of a new domestic medicinal product based on interferon, antimycotics and probiotics.

STUDYING OF NUTRIENT MEDIA FOR *PARAMECIUM CAUDATUM* CULTIVATION

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Introduction. Today, *Paramecium caudatum* is one of the promising objects in biotechnology. They can be used in biological testing in ecological and toxicological laboratories; in addition, biomass of paramecium can serve as a starting feed for young fish and a source of valuable animal protein. Paramecium plays a special role in assessing the state of the environment. The last time there is a tendency to use single-celled organisms (paramecium) as a test-object for research in pharmacy (pharmacological and toxicological studies), because they represent a tiny copy of a multicellular organism. For the vital functions of living organisms, namely paramecium, an environment of a well-defined chemical composition is required. When changing this composition, for example, with the exclusion of any component from the nutritional medium, or the administration of an additional compound, the body immediately or after some time submits an appropriate signal.

Aim. Study of nutrient media for the cultivation of *Paramecium caudatum* and the choice of the most optimal medium for the further using in biological testing.

Materials and methods. As a biological test object *Paramecium caudatum* was used, as a nutrient media – the medium based on hay infusion, the medium based on lettuce leaves and modified medium Lozina-Lozynsky. We cultivated paramecium for 11 days at a temperature of 25 ± 2 °C, fed paramecium of the baking yeast (species *Saccharomyces cerevisiae*). Uniform biological and physicochemical research methods were used for research.

Results and discussion. In conducting research to study the cultivation, growth rates and morphology of *Paramecium caudatum*, a nutrient medium based on hay infusion, the medium based on lettuce leaves and modified medium Lozina-Lozynsky were used. During experiments, it was found that not all nutrient media are equally suitable for paramecium cultivation. Thus, in the nutrient medium from the leaves of lettuce, the small activity of the paramecium was noted, and a small number of cells at the beginning of cultivation (6-th day) compared with the nutrient medium prepared from hay infusion, where the relatively active *Paramecium caudatum* cells were observed. The isolation of pure culture from the nutrient medium based on salad leaves was complicated by the fact that small paramecium and amoebae appeared at first, and *Paramecium caudatum* only on the sixth day of cultivation. In Lozina-Lozynsky nutrient medium, the intensive growth of paramecium was noted throughout all cultivation days and the clear culture of paramecium was most straightforward, as they appear from the first day of cultivation. Paramecium have high activity and are large enough in size.

Conclusion. Among the three studied nutrient media, it was found that *Paramecium caudatum*, which was grown on the modified nutritional medium of Lozina-Lozynsky, has a higher activity, larger size and the number of their cells is larger than that grown on two other nutrient media, therefore, for further development bioassay using paramecium was chose the nutrient medium of Lozina-Lozynsky.