Objective of the study. Study the efficiency of probiotic “Lacidofil-WM” for prevention of vaginal disbiosis and antibiotics-associated diarrhea during the postpartum period in women after cesarean operation.

Materials and methods. 96 women were examined after the cesarean operation, who were receiving Cefotaxime preventively. Per os probiotics therapy with Lacidofil-WM was administered to 56 patients (main group) of the total patients number, during 7 days, and the control group of 40 women were not taking this preparation.

Results. After completion of the antibiotics-therapy course, none of the patients of the control group demonstrated vaginal normocenosis, and antibiotics-associated diarrhea was recorded in 10% cases. At the same time, the normocenosis condition was recorded in 89.3% of the puerperas of the main group, who were receiving probiotic Lacidofil WM, and no indecent of antibiotics-associated diarrhea was recorded.

Conclusion. Probiotic Lacidofil-WM has proved to be efficient in prevention of antibiotics-therapy complications in puerperas after cesarean operation in the postoperative period.

Key words: antibiotics-therapy, postpartum period, cesarean section, probiotics.

Prevention of pyoseptic complications in the postpartum period remains a topical obstetrics issue [11]. Such complications are induced by different disorders of throphic and hormonal nature, as well as by changes in the quantitative-qualitative relationships of pathogenic and opportunistic resident microflora of the genital tracts of puerperas [7].

As is known, a healthy woman’s vagina contains a great number of microorganisms in symbiosis. A normal vaginal microflora comprises rod-like (lactobacilli, corynebacteria and diphtheroids) and coccus flora (anaerobic and mostly aerobic cocci, hemolytic and nonhemolytic streptococci, β-hemolytic streptococci, enterococci). Klebsiella, enterobacteria, Proteus species representatives, colon bacillus, and Candida fungi are less common [9].

The most important function of a normal microflora is, together with local and general immune factors, to provide for colonization resistance, forming conditions for optimal ratio of microbial associantes responsible for normal microflora of each biotope [3].

Normobiotic existence of endogenous microflora is provided – besides colonization resistance – by hormonotrophic cyclic changes in the mucous layer of the vagina, production of substances which have antimicrobial properties (lysozyme, bacteriocynes, etc.), local factors of the immune protection (activators of phagocytic and fermentative activity) [5].

Normal microflora participates in a variety of metabolism functions and balance of vitamins, in stimulation of immunogenesis, securing resistance, cells barrier against penetration of pathogenic microorganisms and other. On the whole, biocenosis of female reproductive organs is a complex component of the system, all participants of which, being in a strict balance and symbiosis, provide for a so-called condition of eubiosis [4].

Pregnancy brings along a number of changes in the woman’s body, which favor inflammatory deceases of the vagina with consequent development of pyoseptic complications. Account taken of the above-stated, a special focus by obstetricians-gynecologists to preparations used for prevention of pyoseptic complications in the postnatal period is understandable [1].
Antibiotics are widely used in the obstetrical practice for prevention of such complications, despite a well-known significant number of complications and long-term effects of antibiotics therapy, which include antibiotics-associated diarrhea and vaginal disbiosis [6, 10]. In this respect, search for new means for prevention of these complications of the antibiotics therapy is topical [12].

Effectiveness of probiotics has presently been shown for prevention of intestinal and vaginal disbiosis associated with antibiotics therapy. Probiotics were shown to be the most physiological in their adjusting action to the microflora, their mechanism of therapeutic activity, and no side effects of chemical eubiotics [2].

Probiotic types of lactobacteria are used mainly in dietary supplements. Clinical trials are currently under way, which study preparations made of microorganisms-representatives of the normal human microflora. Recently, we have seen appearance of pharmaceutical preparations of probiotic lactobacteria’s strains [14].

The majority of presently known probiotic microorganisms’ strains are a part of the normal human microflora or are present in food products used by at least several generations of people in the whole world. Therefore, WHO, FDA and FAO generally regard probiotics as safe and having GRAS-status (Generally Regarded as Safe). This means that they can be used in the food and pharmaceutical industries without restrictions [13].

It had been shown earlier that local intravaginal application of eubiotics (probiotics) produced a sound clinical effect. In foreign countries local application of yogurts and kefirs containing lactobacteria is quite extensive. The results of studies show that correction of vaginal pH and lactobacillial flora necessary for normal flora of the vagina, provide for high clinical efficiency [2].

At the same time, colonization of the vagina is directly related to the intestinal microflora. Consequently, it is reasonable to use not only vaginal but peroral probiotics too. G. Reid et al. report about a successful treatment of vaginal disbiotis in a placebo-controlled study of peroral use of dietary supplements which contain L. rhamnosus and L. fermentum during 60 days [15]. With application of vaginal suppositories containing L. acidophilus, a positive effect was recorded in 57% of the cases, although only for a limited period of time. Moreover, a favorable effect on vaginal biocenosis was shown by tampons saturated with L. fermentum, L. rhamnosus and L. gasseri used during 5 days after 3-days of therapy with suppositories containing clindamycin.

Present-day open studies demonstrate that probiotics of L. rhamnosus and L. acidophilus, reuteri RC-14 strains colonize the vagina after peroral intake, which secures a pronounced preventive effect [2, 9].

In order to prove or disprove this fact the authors of this article have conducted a study based on the use of probiotic “Lacidofil-WM” which is a combination of two strains of live bacteria: Lactobacillus helveticus (acidophilus) Rosell-52 and Lactobacillus rhamnosus Rosell-11.

Lacidofil-WM has a high safeness profile: it does not contain opportunistic flora, Lactobacillus rhamnosus Rosell-11 and Lactobacillus helveticus (acidophilus) Rosell-52 strains belong to ordinary symbiont of human intestines, genomes of these strains are fully identified, they have genetic passports, do not carry potentially dangerous genes of antibiotics-resistance and mobile genetic elements.

The bacteria in Lacidofil-WM’s composition have a high degree resistance to action of gastric juice and biliary acids, they produce a sustained probiotic effect owing to a high level of adhesion to the epithelium and two-week colonization activity. Moreover, Lacidofil-WM has a prebiotic function: due to lactic acid synthesis, it forms a favorable medium for development of a normal microflora, and executes a protective action on epitheliocytes.

Lacidophil-WM is recommended to be administered from the first day of antibiotics therapy for infectious processes of any localization.
The objective of this research is to study the efficiency of probiotic “Lacidofil-WM” for prevention of vaginal disbiosis and antibiotics-associated diarrhea during the postpartum period in puerperas after cesarean operation.

**Materials and methods**

96 puerperas were examined to achieve the objective of this study.

The first (main) group was comprised of 56 patients who were receiving antibiotics after the cesarean operation for prevention of pyoseptic complications. The 3rd generation cephalosporin antibiotic – Cefotaxime – was used intravenously at 1 g every 12 hours during 7 days. Lacidofil-WM was administered to the women of this group perorally at 1 capsule 3 times per day during 7 days.

The second (control) group consisted of 40 patients who also received Cefotaxime after the cesarean operation for prevention of pyoseptic complications following the same regimen. No preparations for adjustment of possible disorders of intestinal and vaginal eubiosis were prescribed to the women of this group.

Clinicolaboratory data corresponding to the examination protocols during the postpartum period was studied, condition of vaginal biocynosis was analyzed, and the results of bacteriologic and bacterioscopic tests were assessed.

Statistical treatment of the data was done using EXCEL and STATISTICA 6.0 programs. Differences were regarded as significant at P<0.05.

**Results and discussion**

The groups being compared were comparable in age, anthropometric data, frequency of gynecological and extragenital pathology.

The average age of the patients examined in the first group was 27.3±5.6 years, and in the control group – 26.6±5.6 years. The body weight of the main group puerperas was 67.3±3.7 kg, and for the control group – 68.2±4.7 kg. The main group’s puerperas’ height was 1.64±0.07 m, and for the control group – 1.67±0.06 m. The age of menarche for the puerperas of the main group was 12.59±0.53 years, and in the control group – 12.27±0.48 years.

The number of births in the anamnesis in the main group was 0.5±0.6, and in the control group – 0.6±0.7, abortions – 1.4±1.1 and 1.3±0.9 respectively.

A gynecologic pathology in anamnesis was present in 64.3% of the main group puerperas. Of these, cervical erosion was recorded in 50% of the patients, candidosis – in 26.8 %, non-specific vaginites – in 17.9 %, ureamycoplasmosis – in 14.3 %, Trichomonas vaginites – in 8.9 %, and chronic salpingoophoritis – in 7.1 %.

A gynecologic pathology in anamnesis was present in 62.5% of the control group puerperas. Of these, cervical erosion was recorded in 47.5% of the patients, candidosis – in 25 %, non-specific vaginites – in 17.5 %, ureamycoplasmosis – in 15 %, Trichomonas vaginites – in 7.5 %, and chronic salpingoophoritis – in 7.5 %.

25% of the women in the main group had diathermocoagulation of the cervix of the uterus in anamnesis (control – 22.5%), 8.9% - diagnostic intrauterine manipulations and long-term intake of antibiotics (control – 10%), 7.1 % - cryodesctructions (control – 5%), 2 puerperas of the main group have undergone surgeries on the small pelvis organs (control – 0).

There were over 1.56±0.74 extragenital diseases per 1 puerpera of the main group (control – 1.68±0.82). The most common disease in the main group puerperas was chronic tonsillitis – 25% of the cases (control – 20%), euthyroid goiter – 17.5% (control – 20%), anemias – 14.3 % (control –
15%), chronic pyelonephritis – 14.3 % (control – 10%), chronic cystitis – 3.6% (control – 0), 1 puerpera from the main group was suffering from a chronic colitis (control – 0). Therefore, the puerperas of both groups were predisposed to development of pyoseptic complications after the cesarean operation.

Indications for a planned delivery by cesarean section in the main group included:
- uterus operated on, combined with another obstetrical pathology in anamnesis – 48.2 % of the women (control – 47.5%);
- cardiovascular diseases – 16.1% (control – 17.5%);
- diseases of organs of vision – 8.9% (control – 10%);
- abnormalities of the fetus – 26.8% (control – 25%).

The condition of vaginal biocenosis is shown on Fig. 1.

![Fig. 1. Condition of vaginal biocenosis in the patients examined before administration of antibiotics therapy](image1)

Pyoseptic complications were avoided due to the antibiotics therapy in all the women examined. After the antibiotics therapy course, evident changes in the vaginal biocenosis were recorded in all the puerperas of the control group. (Fig. 2). The condition of normocenosis was not found in any of the patients of this group.

Manifestations of disbiosis in the women of the main group, which had been recorded before the beginning of the therapy, were stopped with the intake of probiotic “Lacidofil-WM” (Fig. 3).

![Fig. 2. Condition of vaginal biocenosis in the puerperas of the control group after the antibiotics therapy course](image2)
No case of antibiotics-associated diarrhea was discovered in the main group owing to the treatment used in this group, while in the control group this complication was recorded in 10% of the patients (P<0.05), which required administration of additional medications.

Thus, probiotic Lacidofil-WM is an efficient preparation for prevention of antibiotics therapy complications in the postpartum period in puerperas after the cesarean operation.

LITERATURE


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