

DYNAMICS OF THE QUALITY OF THE UTERINE MICROBIOCENOSIS IN COWS WITH AN ACUTE PURULENT-CATARRHAL ENDOMETRITIS AND CORRECTION OF PROBIOTIC STRAINS

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The article presents the results of determining the species composition of the microflora of cervical mucus in cows with acute postpartum purulent-catarrhal endometritis, as well as the effectiveness of correction of microbiocenosis of uterine by probiotic strains of Bac. subtilis and Bac. amyloliquefaciens. The results obtained are justification for the use of probiotics to inhibit the growth and reproduction of pathogenic and conditionally pathogenic, causing disease processes in the genital tract of postpartum cows.

Keywords: cows, endometriosis, microflora of uterine, probiotics.

One of the most important tasks is to ensure the livestock population of the country safe and high quality food, in connection with what are becoming increasingly important problem of maintaining the health of production animals with alternative, environmental, physiological methods of correction [1]. It determines the profitability and competitiveness of enterprises.

Given the urgency of the problem, now is the search for new drugs, circuits, and methods of treating bacterial infections of productive animals, focusing on the study of microbiocenoses microorganism and define the role of the normal microflora in maintaining health.

Significant role in the shortfall of production in dairy cattle is obstetric and gynecological diseases, the dominant role in the structure of which is occupied by endometritis and mastitis. Inefficient and running treatment of these pathologies leads to a transition to a chronic form of disease in 50-70% of cases [2, 3]. Despite the many contributing factors, the main etiological factor in the genesis and development of mastitis and endometritis is conditionally pathogenic microflora [4, 5].

The topical application of probiotic products to correct microbiocenosis of reproductive organs determined that unlike antibiotics, these drugs have antagonistic effects on pathogenic bacteria, but it heals automikroflora of animal body [6].

The purpose of the work. Determination of the species composition of microorganisms of the uterus in cows with purulent-catarrhal endometritis, in different periods of the disease and its correction by probiotic strains.

Materials and methods. Investigations were carried out in summer 2013 on the basis of the veterinary clinicSSPC of SB NULES of Ukraine "CATU" and the Educational laboratory of micro-ecology of the Department of Microbiology, epizootology and VSE of SB NULES of Ukraine "CATU" in accordance with the Research plan of the initiative of research topics.

For bacteriological examination of cows with acute purulent-catarrhal clinical postpartum endometritis were selected secret of the cervical mucus of the uterus 4-5 days after calving.

Investigations were carried out on animals at the age of 4 to 6 years of Ukrainian dairy and Hol-

stein breeds with different levels of efficiency (n = 14) contained in SSPC of SB NULES of Ukraine "CATU". Diagnosis of postnatal pathology of reproductive organs was carried out according to the "Guidelines for the diagnosis, prevention and treatment of obstetric and gynecological diseases and veterinary control over the reproductive function of cows".

The selected aseptically swabs from the vagina and cervix of of uterine of cows was prepared according Rubtsov. These samples were plated on synthetic medium: meat-extract agar, meat-extract agar with 7.5 % sodium chloride, Endo, Sabourau, Hiss's medium colored etc. Consideration of colonies was performed after 24-48-hour incubation in an incubator at 37 °C.

The study of the morphological and biochemical properties of culture-strains of microorganisms isolated from the objects of study, carried out on standardized methods. Generic and specific belonging of allocated microorganisms were determined based on their biological properties, according to the determinant of Bergey (1997).

As probiotic vaginal suppositories used "Vetomgin" (production - Russia) for farm animals, which is composed of strains Bac. subtilis и Bac. amyloliquefaciens.

Test animals were divided into two groups - experimental and control by 7 cows. In the control group, the scheme economy was used: intrauterine ichthyol candles in 3 pieces with an interval of 24 hours for 5 days, intramuscularly comprehensive multivitamin preparation "Introvit" to 20 ml per head one-time, 50 UA oxytocin intramuscularly. In the experimental group was used a similar scheme as to that of the control group, replacing ichthyol candles on probiotic preparation "Vetomgin" (Russia), which was introduced in utero as a suppository in the amount of 3 candles in the course of day 5 days.

Cervical mucus and blood were obtained on the day of the treatment of animals, and then on the 10th and 20th day.

Results and discussion. We have found at bacteriological research of the cervical mucus that the course of acute purulent catarrhal endometritis in cows during the summer period is complicated by colonization of pathogenic and conditionally pathogenic microflora, which is represented by associa-

tions of gram-positive cocci (Staphylococcus aureus, Staphylococcus epidermidis, Enterococcus faecialis), and gram-negative bacteria (Escherichia

coli, Pseudomonas aeruginosa and Proteus vulgaris) (Fig. 1). Microscopic fungi in the selected material from the test animals are not selected.

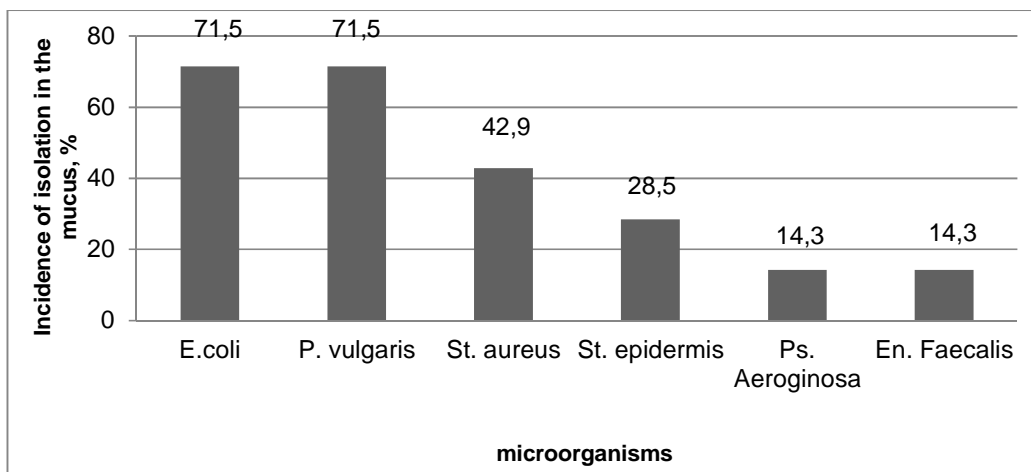


Fig. 1. Microbiocenosis uterus in cows with purulent-catarrhal endometritis at baseline

The composition of the microflora of the uterus changed at cows of the experimental group on the

10th of studies under the influence of "Vetomgin" (Fig. 2).

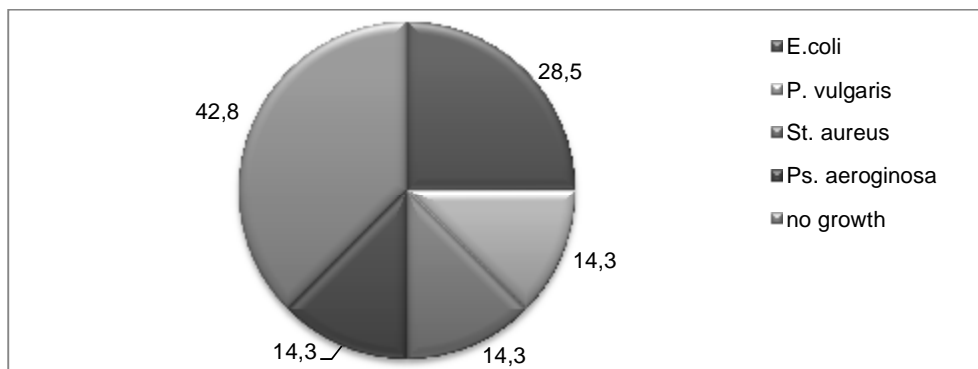


Fig. 2. Microbiocenosis of uterine of cows of the experimental group on the 10th day after the start of treatment

The therapy did not have a pronounced effect on pathogenic and pathogenic strains of microorgan-

isms at cows of the control group (Fig. 3).

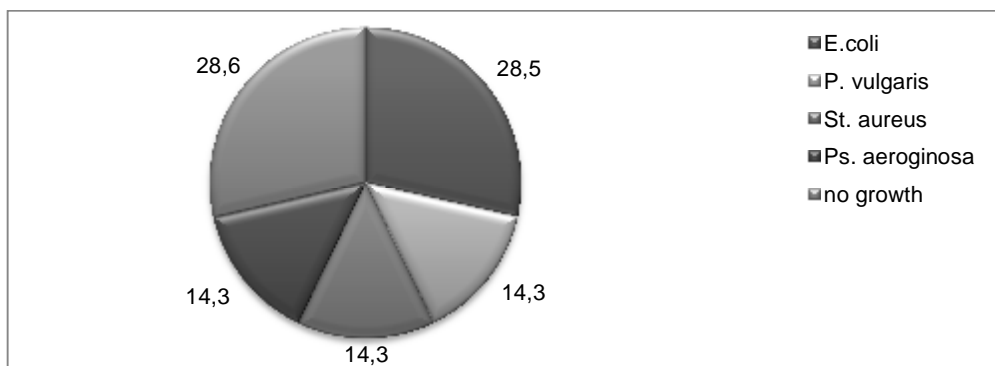


Fig. 3. Microbiocenosis of uterine of cows of the control group on the 10th day after the start of treatment

The pathogenic microflora is not detected in 85.7 % of cervical mucus of cows in the experimental group by the 20th day of the study in samples (Fig. 4). E.coli allocated in 14.3 % cases.

The related therapy schemes employed sector, did not have a pronounced effect on the opportunistic pathogens and does not protect the birth canal from recontamination.

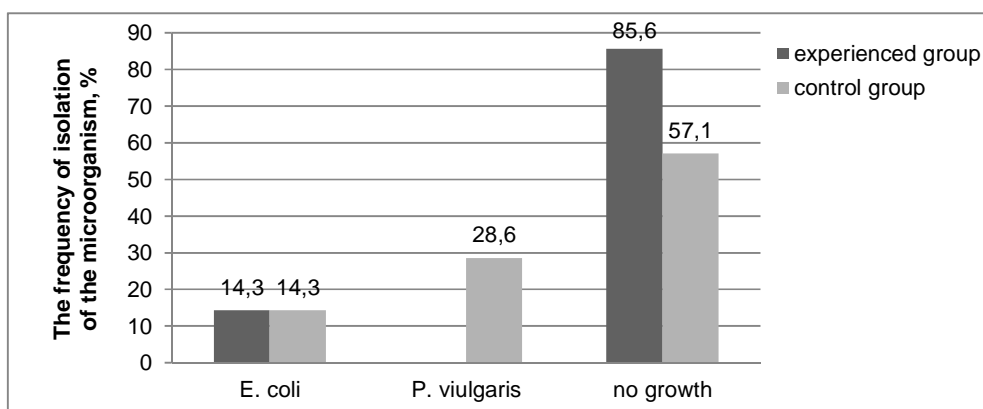


Fig. 4. Microbiocenosis cancer in the test cowson the 20th day after the start of treatment

The presence of cervical mucus pathogenic microflora after treatment with ichthyol candles evidence of incompleteness of inflammation in the uterus and possibilities of the disease into a chronic form of the disease.

The probiotic preparation "Vetomgin" has a strong antagonistic effect on pathogenic microflora, such as E.coli, P. vulgaris, Staph. aureus, Ps. aeruginosa.

Conclusions. In cows kept in the SSPC of SB

NULES of Ukraine "CATU" with an acute postpartum purulent-catarrhal endometritis uterine contents dominated by opportunistic microflora in various associations, mostly in combination E.coli + Proteus vulgaris and E.coli + Proteus vulgaris + Staph. aureus. The use of probiotic "Vetomgin" has a strong antagonistic effect on pathogenic and conditionally pathogenic microflora of the uterus and birth canal in comparison with the treatment used on the farm.

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Глотов Е.Э. Динамика качественного состава микробиоценоза матки у коров с острым гнойно-катаральным эндометритом и его коррекция пробиотическими штаммами.

В статье представлены результаты определения видового состава микрофлоры цервикальной слизи у коров, больных острым послеродовым гнойно-катаральным эндометритом, а также эффективность коррекции микробиоценоза матки пробиотическими штаммами *Vac. subtilis* и *Vac. amyloliquefaciens*. Полученные результаты являются обоснованием применения пробиотических препаратов для подавления роста и размножения патогенной и условно-патогенной микрофлоры, вызывающей патологические процессы в половом тракте в послеродовой период у коров.

Ключевые слова: коровы, эндометрит, микрофлора матки, пробиотики

Глотов Е.Є. Динаміка якості складу микробиоценозу матки у корів з гострим гнійно-катаральним ендометритом та його корекція про біотичними штамами.

У статті наведені результати визначення видового складу мікрофлори цервікального слизу у корів, які хворі гострим післяродовим гнійно-катаральним ендометритом, а також ефективність корекції микробиоценозу матки про біотичними штамами *Vac. subtilis* та *Vac. amyloliquefaciens*. Отримані результати є обґрунтуванням використання про біотичних препаратів для пригнічення росту та розмноження патогенної та умовно-патогенної мікрофлори, яка викликає патологічні процеси у статевій системі у післяродовий період у корів.

Ключеві слова: корови, ендометрит, мікрофлора матки, пробиотики

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