

ENDOMETRITIS IN PRODUCTIVE COWS

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Abstract: This article presents literature data on the etiology, pathogenesis, clinical manifestations, treatment and prevention of endometritis in cows.

Keywords: Endometritis, etiology, uterus, dairy cows, placentin , mycotoxin , silage

Introduction. We all know that in our country, in order to improve the living standards of the population and reduce unemployment, a number of large-scale reforms are being carried out in agriculture, as in all sectors, including the measures taken by our head of state in the veterinary sector and several decisions adopted in this area:

Resolutions of the President of the Republic of Uzbekistan No. PQ-4576 dated January 29, 2020 “On additional measures for state support of the livestock sector” and No. PQ-121 dated February 8, 2022 “On measures for the further development of livestock farming and strengthening the feed base”.

By July 1, 2020, parameters are being developed for the allocation of funds from the state budget to increase the number of breeding cattle, sheep, and goats sold and imported by breeding farms operating in the Republic in 2021-2022.

The resolutions of the President of the Republic of Uzbekistan No. PQ-5017 dated March 3, 2021 “On additional measures for further state support of the livestock sector” and No. PQ-187 dated March 31, 2022 “On radical improvement of the system of personnel training in the veterinary and livestock sectors” tasked industry workers not only with increasing the number of livestock in our country, but also with improving their breeds, increasing their productivity, and improving the quality of zoo-veterinary services.

Decrees No. PF-165 of July 6, 2022 “On Approval of the Strategy of Innovative Development of the Republic of Uzbekistan for 2022-2026” are paving the way for rapid changes and research in the industry.[1,2,3,4]

Endometritis, a disease of cows that is becoming increasingly important in the livestock sector of agriculture, is one of the factors that significantly reduces productivity. In endometritis, as a result of the violation of the physiological state of the uterus, cows lose fertility and become barren. As a result, economic efficiency in farms and households decreases. In dairy cows, milk productivity decreases significantly during the disease.

Causes of endometritis. The main causes of uterine diseases Etiological factors are the entry of pathogenic microflora into the uterus during sexual intercourse, fertilization and the postpartum

period. Often, uterine trauma occurs as a complication of inflammation of the vagina and cervical canal. Inflammation of the uterus can manifest itself as a symptom of diseases (tuberculosis, brucellosis) . Depending on the degree of pathogenicity of microbes and the degree of tissue resistance, pathological processes can occur with pronounced symptoms or without any symptoms at all .

Infertility during pathological processes in the uterus is caused by non-inflammatory changes in the form of hyperplasia of the uterine mucosa. Such changes are manifested by thickening and loosening of the uterine wall. Changes in the uterus occur simultaneously with ovarian cysts.

Disease progression The course of inflammatory processes in the uterus during pregnancy leads to profound morphological changes in the uterine mucosa (atrophy, scarring, degeneration), disruption of the connection between the fetal and uterine sides of the placenta, and the penetration of microorganisms and toxins into the tissues and organs of the fetus due to the disruption of the placental barrier. Sometimes the uterus is connected to the surrounding tissues by forming scars, which leads to abnormal pregnancy.

Chronic endometritis (Endometritis chronica). It is a chronic inflammation of the uterine mucosa, accompanied by an increase in the number and increased function of the glands in the endometrial layer. According to the nature of the inflammatory process, catarrhal and catarrhal-purulent endometritis are distinguished.

Chronic catarrhal endometritis develops as a result of microorganisms entering the uterine cavity during childbirth, sexual intercourse, artificial insemination, or inflammation of the vagina and cervix. It is characterized by profound changes in the uterine mucosa, thickening, loosening, erosion, and the formation of ulcers. Connective tissue grows along the mucous membranes; the uterine glands atrophy, and cysts of various sizes appear in their place.

Characteristic symptoms : infertility, discharge of a cloudy, clotted fluid from the uterus, sometimes mixed with blood. The rhythm of the sexual cycles changes or anaphrodisia is observed. Sometimes, despite the periodicity of the sexual cycle, infertility and latent abortion are noted, despite several inseminations. In such animals, after 1-2 months, signs of sexual arousal of the sexual cycle appear. Characteristic are patchy hyperemia in the vagina, accumulation of a mucous fluid with a weakly acidic (pH 6-7) environment, and its discharge, often when the animal is lying down or during sexual arousal. In the stagnation phase of the sexual cycle, an increase in the vaginal part of the cervix, hyperemia, or displacement to one side, high, is observed. The cervix is open to the extent that 1-2 fingers can pass.

In most cases, the sexual cycle is not observed, the discharge stops, and catarrhal exudate begins to accumulate in the uterus.

In a smear prepared from the uterus or cervical mucosa, dead leukocytes and ciliated epithelial cells are found. When examined through the rectum, uneven thickening of the body and horns of the uterus, in some places hardening of the tissues, and in some places fluctuation of cysts are felt. The overall size of the uterus is increased, the body and horns are lowered into the abdominal cavity, the uterus contracts weakly or completely loses its contractions.

Latent chronic endometritis is a type of catarrhal endometritis, characterized by poor manifestation of morphological changes (during clinical examination). The disease can be caused

by the use of sperm contaminated with opportunistic pathogens or pathogenic microflora, infection during repeated unsuccessful insemination.

important to note that the animal has not been fertilized even after several inseminations . Usually, the rhythm of the sexual cycle is not disturbed. During sexual desire, a large amount of turbid and clotted mucus flows from the genital tract .

In order to substantiate the diagnosis, a biopsy of the uterine mucosa is taken and histological examinations are performed. During latent endometritis, dystrophy and thickening of the uterine mucosa, accumulation of lymphoid cells, destruction of the uterine glands, severe swelling of the stroma, and blood vessels are observed.

During latent endometritis, toxic substances accumulated in the uterus have a lethal effect on sperm. Therefore, in order to restore the fertility of the animal, it is necessary to cleanse the uterus of exudate and increase its tone. For this, the use of tissue preparations and massage are highly effective. Sometimes washing the uterus with saline or soda-salt solution 1-2 hours before insemination or directly before insemination gives good results.

NIPolyantsev recommends treating latent endometritis in two ways : 1) instead of insemination in the arousal phase of the sexual cycle, 20-30 ml of spermosan-3 or mastisan A, B, E in a 5% oil solution are injected into the uterus ; 2) 12-16 hours after insemination of the animal , neomycin or neovitin (0.5 g), polymyxin-M (0.5-1 g), levomesetin sodium succinate (0.5-1 g) are injected into the uterus once . Before injection into the uterus, antibiotics are dissolved in 10 ml of 1% sodium chloride or 0.25-0.5% novocaine solution .

Chronic catarrhal-purulent endometritis - develops as a result of the penetration of microorganisms into the uterus that cause purulent inflammation during acute or chronic catarrhal inflammation of the uterus.

Along with edema, severe hyperemia and hemorrhage of the uterine mucosa , there is the appearance of soft foci of various sizes, purulent infiltration, degeneration, necrosis and tissue thickening. Often the pathological process extends to the muscular layer. The mucous membranes atrophy, their folds straighten, in some places there is a fungal or beard-like growth of connective tissue. Cysts of various sizes appear instead of the uterine glands.

Catarrhal-purulent inflammation of the uterus is accompanied by a deterioration in the general condition of the animal, loss of appetite and emaciation. Sometimes fever is noted. The sexual cycle is absent or irregular (anaphrodisia and nymphomania). A white, creamy catarrhal-purulent exudate (fluid) periodically flows from the genital slit.

It is difficult to stop the pathological process. However, due to the profound changes in the uterine mucosa after the disease, abortion can occur even when the animal is pregnant .

Hydrometra and pyometra. Hydrometra is a specific course of catarrhal endometritis, characterized by severe swelling of the cervix, scarring of the vagina, its obliteration, sometimes with torsion of the uterus, and the accumulation of 15-20 liters of catarrhal exudate in the uterine cavity. The uterus resembles a sac filled with a specific fluid (Hydrometra). The accumulated exudate may consist of pus (Pemetra) .

Pyometra and hydrometra are not difficult to diagnose. Sexual cycles are disrupted, and when the animal is examined rectally, it is sometimes considered to be bloated. Exudate is periodically or constantly released from the genital slit, and the perineal area and hind legs are soiled. When the cervix is completely closed, no exudate may be released at all. When examined rectally, a tense, fluctuating or doughy uterus is palpated. The body and horns of the uterus are equally tense. Areas of thinning of the uterine wall or, conversely, hardening of the skin in some places are palpated. The uterus and ovaries are located in the abdominal cavity.

Clinical sign Clinical signs of the disease appear on the 8-10th, sometimes 6-7th day after birth and develop as a complication of placental retention or acute subinvolution of the uterus. During the sexual intercourse, when the animal is in a supine position or during rectal massage of the uterus, a copious discharge of a brownish-brown or yellowish-brown color with a foul odor is observed from the genital tract. The labia and The base of the tail will be contaminated with exudate deposits.

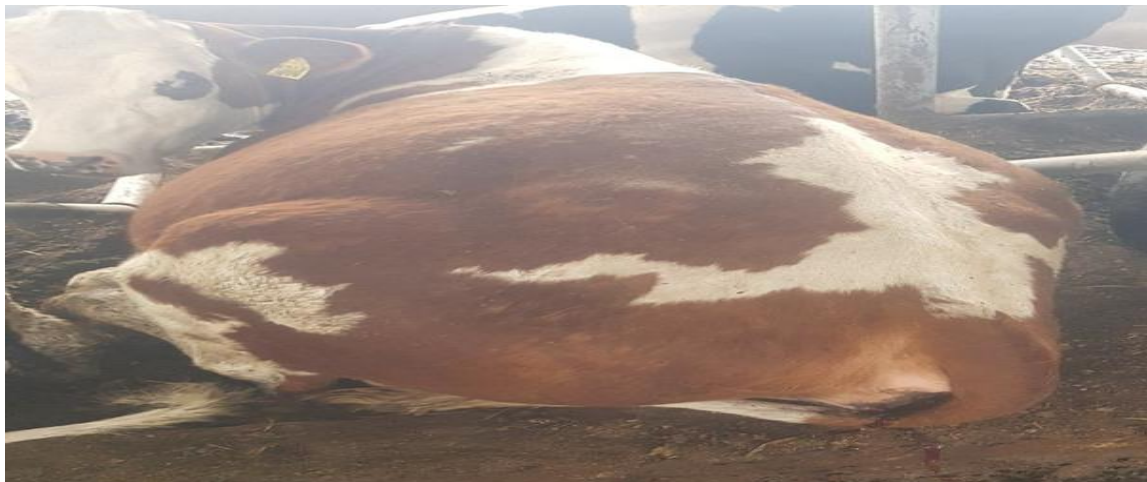


Figure 1. Bacteria and fungal etiological purulent-catarrhal in endometritis blood mixture lazy divorce .

When examined rectally, the uterus is enlarged (to the size of a 3-3.5-month-old foal), in the abdominal cavity, its walls are loose, of a pasty consistency, contractions are very noticeable or not at all. Sometimes fluctuations and weak pain are noted. When examined vaginally, the mucous membrane of the vagina and the vaginal part of the cervix are reddened, hyperemia, spotty or streaky hemorrhages are characteristic, and purulent-catarrhal exudate is released from the cervical canal. The general condition of the animal often does not change, in some animals an increase in body temperature to 1.0-1.5 ° C, general weakness, decreased appetite and milk yield are noted.



Figure 2. Purulent-catarrhal endometritis

Diagnostics The diagnosis is based on the fact that cows are infertile despite the fact that they are normally in heat, as well as the presence of a large amount of pus-like, cloudy, mucous fluid from the genital tract during the heat period.

In the bays disease right intestine through check with The uterus is determined . of the body , often both of the horn everyone in place or partially thickening are found , they caught thickened , atony in case is felt , sometimes in the animal pain to feel is observed .

Treatment . Antibiotic therapy is recommended for animals with endometritis: (penicillin, streptomycin, biomycin, tetracycline, erythromycin, etc.). Penicillin is often used in combination with streptomycin and other antibiotics. Penicillin (at the rate of 1 thousand TB per 1 kg of body weight): horses - 1-2, cattle - 2-3, sheep - 4-10, pigs - 2-3 intramuscularly. The average daily dose of streptomycin for cattle is 1 g (500 thousand TB/kg). Depending on the condition of the sick animal, it is injected once every 3-6 hours.

Antibiotics are usually used for 3-4 days after the illness has passed and the body temperature has returned to normal. Antibiotics are also administered intrauterinely.

Sulfanilamide drugs such as sulfidine, sulfazole, sulfacil, norsulfazole are used in therapeutic doses for 2-3 days, 1-2 times a day. In acute endometritis, along with general treatment, treatment aimed at strengthening uterine contractions and emptying the uterine cavity from exudate is also necessary. Removal of exudate by washing the uterus is effective.

For washing the uterus, potassium permanganate solution (1:10,000), soda solution (1-2%), sodium chloride (1, 3, 10%), lactic acid (0.5%), boric acid (2-3%), ichthyol (3%), tannin solution (0.5%), etc. are used warmed up to 40°C.

Washing is continued until a solution-colored liquid flows from the uterus. Depending on the type and degree of the inflammatory process, 2 - 10 l of disinfectant solution is used for one wash. The uterus is washed every day or every other day, depending on the accumulation of exudate. After the exudate secretion has significantly decreased, washing can be done once every three to four days. During washing, it is necessary to remove all the solution injected

from the uterus. Before washing the uterus, it is recommended to remove the exudate from it with an irrigator or a special pump.

It is recommended to massage the uterus to remove exudate from the uterus and enhance its contractions. With the soft part of the fingers, massage the uterine lymphatic and venous vessels, that is, from the tips of the branches towards the neck, for 3-5 minutes.

Uterine massage is not recommended for bleeding, hematomas, thrombosis of large blood vessels, and all types of purulent inflammation, as well as for benign tumors.

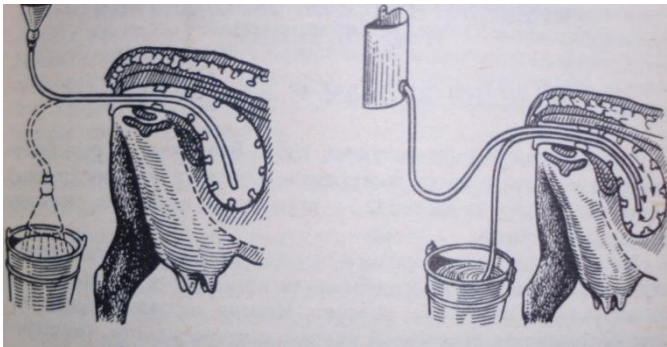


Figure 3. Uterine lavage procedure in cows.

The uterus To enhance contraction, pituitrin, pregnantol, or belladonna extract is injected subcutaneously (5-10 ml for large animals).

Hormonal and neurotropic drugs : sinestrol , stilbestrol, carbocholine , proserin and others used . Sinestrol plant oil or 3-5 ml of a 1% solution in alcohol or 1.5-2.5 ml of stilbestrol 24 hours 3-4 times in between skin under 0.1% carboxolin 2-3 , 0.5% prozerin 2-3 ml skin under will be sent .

Treatment of chronic catarrhal endometritis . The animal should be adequately feeding and maintenance , propagation organization is being treated . uterus massage , the vagina is filled with 3-4 liters of disinfectant at a temperature of 42-43°C solutions with These treatments are performed every 1-3 days . one times , at least 4-5 times is held

Uterus neck enough open was just by chance the uterus wash possible . The solution to the uterus to enter possible if not , then solution with vagina wash possible . 3-4 days between two times autohemotherapy It's also good to transfer . result gives .

Under the skin 1% oil of sinestrol or alcoholic 3-5 ml of solution or 0.005% stilbestrol solution 1.5-2.5 ml every 24 hours one times , 3-4 times in total Estrogen hormones with one at the time carbocholine use also in cows good result gives . In this case, the skin under 1% oil of sinestrol solution (3-5 ml), 2 hours then and 0.1% carboxolin in water 2-3 ml of solution is injected . These preparations daily , total three times is used .

Chronic purulent endometritis is also called . start during exactly purulent-catarrhal as in endometritis treatment will be held . From now on outside , in the ovary yellow body preserved while remaining relevant treatment is held .



Picture 4. purulent endometritis .

Adequate feeding and care of the animal, breeding are organized. During treatment, the uterus is massaged, the vagina is washed with 3-4 l of disinfectant solutions at a temperature of 42-43 ° C. These procedures are carried out once every 1-3 days, at least 4-5 times. A few hours before insemination of the animal, it is recommended to wash the uterus with a 0.9% sodium chloride solution (+40-42 ° C) or a salt-soda-sugar solution (1.0 sodium chloride, 3.0 sodium bicarbonate and 90.0 sugar per 100 ml of distilled water), then massage it (A.Yu.

Tarasevich). It is necessary to inject up to 250-500 ml of this solution into the uterus.

The uterus can be washed only if the cervix is sufficiently open. If it is not possible to introduce the solution into the uterus, the vagina can be washed with this solution. Two autohemotherapy sessions with an interval of 3-4 days also give good results. 3-5 ml of a 1% oily or alcoholic solution of sinestrol or 1.5-2.5 ml of a 0.005% stilbestrol solution is injected subcutaneously once every 24 hours, 3-4 times in total. The use of carbocholine in combination with estrogen hormones also gives good results in cows. In this case, a 1% oil solution of sinestrol (3-5 ml) is injected subcutaneously, followed by 2-3 ml of a 0.1% aqueous solution of carbocholine 2 hours later. These preparations are used three times a day [8]

Given that the uterus and ovaries are affected in chronic catarrhal endometritis, the main task of treatment should be to restore their function. For this purpose , both local and general treatment application recommendation is being done .

Chronic catarrhal endometritis local treatment uterus from the composition periodic accordingly to be released and microflora to weaken or suspension , general - body tone , uterus muscles contraction to increase and to encourage focused on the ovaries function .

The animal is enough feeding and maintenance , propagation organization In the summer chronic catarrhal endometritis to the end positive impact animals from feeding maximum at the level used camping without food with provided .[6]

Preventive measures. Silage quality of cows reproductive to your health directly impact does . Poor quality from the silo use uterus inflammation , ovary dysfunction and from childbirth next complications to increase reason will be .

Chemical and microbiological silage quality analyses in evaluation important importance Contains low - quality silage mycotoxins and botulinum toxin there is to be of cows pedigree and productivity reduce possible .

Silage quality control to be done condition . Optimal pH, milk acid amount and dangerous microorganisms absence animals reproductive system protection does and from childbirth next recovery process accelerates .[7]

Cows 15 days to labor while remaining and gave birth day carbocase , placenta and ixglukovet preparations to the organism send in the womb blood rotation improves , substances exchange accelerates the uterus tissue of cells intensity providing , uterus mucus on the floor apocrine , merocrine , halocrine enzymes activity activates as a result cows childbirth process light 6 hours of sleep during to fall provides .

So do , take visited research results As it turns out , working release in 4 farms under the conditions from milk came out strait cows from birth next sexual diseases prevent to take for the purpose placenta , ixglucovet and corpulent preparations cows 15 days before birth while remaining and gave birth day sending sexual diseases prevent in receiving they high (97.0%) efficiency was determined . From this except for the drug sent cows from birth next to the tune to come and be born under control was 20-30 days from cows short to be , first 80-90% of cows are fertile birth in experiments was determined .[5]

Conclusion. In conclusion, it is worth noting that endometritis is one of the diseases that significantly affects the decline in agricultural productivity, as evidenced by the research of experts and the information provided in the literature in the above article. The need to diagnose the disease according to its course and carry out treatment measures according to its type plays an important role in increasing the effectiveness of the treatment of this disease. In order to prevent endometritis, it is advisable to pay attention to the diet and follow the rules of the veterinarian.

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