

## Uterus Diseases In Cows - Endometritis

**A.I. Amirov**

Senior lecturer, Tashkent state agrarian university, Tashkent, Uzbekistan

**A.SH. Turakulov**

Master degree, Samarkand state university of veterinary medicine, animal husbandry and biotechnologies,  
Tashkent branch, Tashkent, Uzbekistan

**Annotation:** This article provides information on the etiology, pathogenesis, clinical signs, methods of diagnosis of uterine diseases-endometritis, which are common among dairy cows in livestock farms, and recommendations for treatment and prevention are given.

**Key words:** gene pool, dispensary, ration, reproductive, ovary, follicle, streptococcus enterococcus, staphylococcus, protein, bacillus, monoculture, hemoglobin, erythrocytes, leukocytes, lymphocytes, eosinophils, neutrophils.

**Introduction.** Development of the livestock sector on a scientific basis, improvement of productivity and fertility characteristics of agricultural animals, creation of productive herd breeds, enrichment of feed with biologically active substances and protection of animals from various infectious, non-infectious and invasive diseases is one of the urgent tasks of today. A lot of work has been done in our country in this regard, including, in order to improve the breed and productivity indicators of cattle, from foreign countries (Israel, Poland, Russia, Belarus, Holland, USA, Austria, etc.) bred cattle belonging to the world gene pool of Holstein and Angler breeds and their seeds have been brought, cows are artificially inseminated in farms.

However, one of the main causes of widespread sterility among cattle, which prevents the achievement of the above goals, is metritis. As a result of the disease, the reproductive characteristics of productive cows deteriorate, they give birth to calves with low vitality, viability, and reproductive characteristics, and the farms experience great economic losses due to their death.

**Relevance of the topic.** From personal observations and analysis of literature data, it is known that infertility is widespread due to the high burden of endometritis among dairy cows in farms, as well as the fact that zoohygienic indicators are not up to the required level in farms, lack of feed base or lack of feeding on the basis of rations, and dispensation, treatment and prevention of diseases as a factor causing the disease. measures are not carried out on time as planned.

Acute endometritis (Endometritis) is considered one of the main causes of infertility, as a result of inflammation of the mucous membrane of the uterus, the death of germ cells, phagocytosis of the zygote, often secondary damage to the ovaries (retention of the corpus luteum, rupture of follicles, etc.) and failure of follicles. , hyperemia and edema of the uterine mucous membranes, as a result of increased hyperemia, it is characterized by extravasation of vessels, that is, leakage of blood serum and even shaped elements through the walls of vessels into the space between the cells of the uterus.

According to Internet data (<http://in1.com.ua/article/2926/>), the main place in the etiology of endometritis is caused by the entry of microorganisms into the uterine cavity (89.8%) and the decrease in the body's resistance. Escherichia coli and proteus (39.0%), staphylococci (30.5%), streptococci and enterococci (10.3%), aerobic spore bacilli (8.5%), fungi (7.7%), and blue pus bacillus (4.0%) were isolated from uterine fluid, 53.3 In % of cases, it was determined that they are in the form of associative and 46.7% of cases in the form of monocultures.

According to I.S. Koba (2009), the following groups of fungi and microorganisms were distinguished when the microflora of the fluid taken from the uterus of cows with acute endometritis after childbirth was studied: Staph. aureus + E. coli + Candida albicans - 22,8%, Staph. aureus + P. mirabilis + Candida albicans - 20%, E. coli + P. mirabilis + Candida albicans - 11,4%, E. coli + P. vulgaris + Candida albicans + Aspergillus fumigatus - 8,5%, Staph. aureus + P. mirabilis + E. coli + Candida albicans + Aspergillus fumigatus + Mucor racemosus - 5,7%.

Cases of cows with acute endometritis were recorded on days 1-8 after calving, on days 9-14 when the subinvolution of the uterus developed. The entry of microorganisms into the uterine cavity is often caused by pathological births, i.e., uterine injuries, rotting of unseparated fetal membranes, slow involution of the uterus (uterine atony), improper care and maintenance of animals, lack of vitamins and minerals in food, and artificial insemination of animals. as a result of non-observance of aseptic and antiseptic rules, as well as the use of male animals infected with various sexually transmitted diseases, an infection may enter the uterine cavity.

**Chronic endometritis.** The disease, usually caused by acute endometritis, is accompanied by a strong change of the endothelium and a strong secretion of the uterine glands. According to the nature of the exudate, catarrhal, purulent-catarrhal and purulent chronic endometritis are distinguished. In chronic endometritis, exudate accumulates in the uterine cavity due to excessive swelling of the cervix. If the exudate is liquid like water (catarrhal exudate), it is called uterine contraction (Hydrometria). Pyometra occurs when a large amount of purulent exudate accumulates in the uterus. Chronic latent endometritis is a type of chronic catarrhal endometritis.

**Latent chronic endometritis.** Diseased cows do not show clinical signs during the period between moults, and rectal and vaginal examinations show no abnormal changes. When the animal is in heat, more cloudy fluid than usual, sometimes mixed with purulent exudate, comes out of the uterus. Although cows are regularly inseminated and inseminated, there is no insemination. Infertility of animals in such endometritis is observed due to the excessive amount of mucus in the reproductive tract, which prevents the movement of spermatozoa, and the exudate of the uterus has a killing effect on spermatozoa.

**Diagnosis.** The reason for the diagnosis is the fact that the cows are infertile as they usually burn, as well as a large amount of pus-mixed cloudy mucous fluid flows from the genital tract during the animal's burn. In this case, it is found that the body of the uterus or often both branches are thickened everywhere or partially.

**Three forms of chronic purulent endometritis are often distinguished in cows.**

**In its first form,** it is called "fistula" and because the cervical canal is open, purulent exudate always comes out. This type of disease is caused by the slowing down of the involution of the uterus.

**In the second form,** purulent exudate occasionally comes from the genital tract. This is caused by the swelling of the mucous membrane of the uterus and the temporary blockage of the cervical canal, as well as a decrease in the tone of the muscles of the uterine wall. Purulent exudate accumulates in the uterine cavity and flows out through the vagina only when the animal changes its body position (for example, lying down).

**In the third form,** the purulent exudate does not flow out of the uterus because the cervical canal is tightly closed. This type of endometritis occurs when an animal dies of trichomoniasis or in the early stages of fetal development.

**Diagnosis.** A foul-smelling putrid exudate, sometimes applied in the form of a fistula, always contaminates the skin around the labia and the inner surface of the tail. When a diseased animal is examined through the rectum, an insufficiently reduced and dense uterus is found.

In a sick animal, there is an increase in body temperature, the animal is bent over, frequent exertion, pain during defecation and urination. When examining through the rectum and vagina, the animal is very uncomfortable, the damaged walls of the uterus and the mesentery are felt thick and swollen to the hand, sometimes abscesses are found.

**Chronic catarrhal endometritis.** Affected cows undergo profound changes in the mucous membranes of the uterus. That is, the mucous membrane gently pulls and thickens, connective tissue grows in it, and erosions appear on the surface of the mucous membrane. In some places, cysts that look like chicken eggs appear in the uterine glands. Cows produce copious amounts of clear fluid, and sows very little, and this fluid drains from the uterus through a slightly open duct into the vagina and then out. A cow is regularly farting or the time of farting changes.

**Diagnosis.** When the uterus of infected cows is examined through the rectum, the asymmetry of the uterine horns and its enlargement are revealed. Sometimes oscillating bundles (cysts) can be found in some places of the uterine wall. Tuberculosis balls should be suspected if there are hardened, nodule-like thickened areas on the walls of the uterus and fallopian tubes. In such cases, it is necessary to undergo a bacteriological examination of the uterine fluid to determine whether there are tuberculosis bacilli.

**Chronic purulent-catarrhal endometritis.** Symptoms in chronic catarrhal endometritis are characteristic, but the changes in the uterus are more pronounced. This condition depends on the activity of

pus-forming microorganisms. When examined, the labia of the sick animal is raised and layers of brownish-yellow pus are visible in the fur of the lower corner of the genital fissure. Such folds are often visible on the inner surface of the tail. Mucus mixed with pus comes from the genital opening. Although the general condition of a sick animal is satisfactory, the animal becomes weak and thin, its appetite decreases, and its body temperature rises.

**Diagnosis.** On rectal examination, one or both of the uterine horns are enlarged, while they are palpable. If there is tuberculosis in the uterus (in cows), nodules can be felt on its walls. Unabsorbed corpus luteum is often present in the ovaries, sometimes in both ovaries. During vaginal examination, it is revealed that the swollen cervical mucosa is covered with strong hyperemia and pus mixed with mucus.

**Prevention and prevention of disease.** All methods of treating uterine diseases in cows should be carried out in full compliance with veterinary-sanitary and zoohygienic indicators, i.e., feeding with quality food, keeping livestock in dry, clean buildings, prescribing rations according to the course of the disease, and other zoohygienic requirements (Sh.B. Ata-Kurbanov, B.M. Eshburiev, 2009).

**Research objects and methods.** In order to study the distribution of uterine diseases in cows, their causes and development characteristics, clinical signs and morphobiochemical changes in the blood and the consequences of these diseases, dispensation was carried out on dairy cows and bodies of breeding age on the farm, economic indicators of animal husbandry on the farm, conditions of keeping and feeding animals, milk yield, calving, based on the analysis of their body weight at birth, herd syndromes were studied.

The composition and satiety of the cow's diet, the content of digestible protein, sugar, carotene, calcium, phosphorus, and fiber were analyzed zootechnically.

The clinical condition of the cows on the farm was determined, attention was paid to the general state of appetite, the level of obesity, and the response to external influences.

With generally accepted clinical examination methods, mucous membranes, skin and skin covering, condition of motor organs, movement of pre-stomach sections in 5 minutes, body temperature, heart rate and breathing rate, discharge of exudate from the vagina and its character were determined.

After giving birth to cows and once every 5 days, the state of the uterus and its subinvolution were determined using clinical examinations, vaginal and rectal examinations. Estrus and the course of the sexual cycle were studied in cows.

With external examinations, the labia labia, discharge of mucous fluid, its color, smell and consistency, and the color of the mucous membranes were determined. The state of the mucous membrane of the vagina, the state of the cervix, the degree of its closure, and the nature of the liquid secreted from the uterus were studied by examining through the vagina with the help of a vaginal mirror.

Rectal examination revealed the condition of the uterine horns, the presence of fluid in it, contraction of the uterine wall, and the condition of the ovaries, the presence of follicles or corpora lutea. Cows were examined before treatment and every 10 days.

In order to improve the treatment of uterine diseases in cows, in order to select therapeutic agents, to determine the therapeutic effectiveness of the used drugs, to study their effect on the clinical and physiological condition of cows, some morphobiochemical indicators and physiological state of blood, treatment experiments were conducted in order to determine the therapeutic and economic efficiency of the therapeutic agents.

For the experiments, two groups of 3 dairy cows with metritis were formed in each, and the cows in the first experimental group were treated as follows:

- the vagina and uterine cavity were washed with a solution of ASD-2 drug in water (20-25 ml of ASD-2 drug, 1-1.5l of warm water); then, a 50-60 ml syringe was injected into the uterine cavity from Atikar manufactured in Ukraine (warmed at a temperature of 35-40°C, 48-72 hours apart through the catheter sheath. In addition, 20 ml of the oxytocin drug was injected intramuscularly; 200 ml of the Metragel drug was administered intravenously once a day Intramuscular injection of Oxytetracycline 20% antibiotic in the amount of 1 ml per 20 kg of body weight.

- Cows infected with metritis in the 2nd control group were treated as follows:

- the uterus was washed with 0.1% potassium permanganate solution; 4 furazolidone sticks were inserted into the uterus; 15-20 ml of Penstrep-400 antibiotic was administered intramuscularly once a day.

### **Treatment-experimental results**

When studying the nature of inflammation of the uterus by clinical and gynecological examination of farm cows, catarrhal-purulent endometritis was 75%, catarrhal endometritis was 41%, fibrinous endometritis was 7% and necrotic endometritis was 4%.

Before the start of our experiments, the clinical and physiological indicators of cows infected with endometritis in the experimental and control groups were characterized by clinical signs such as general weakness, apathy, changes in appetite, hypotony of the pre-gastric sections, paleness of the mucous membranes (anemia), discharge of catarrhal-purulent exudate from the vagina, and at the end of the experiments changes in clinical and physiological indicators were observed only in cows in the control group.

In cows infected with catarrhal-purulent endometritis, body temperature increases by 0.5-10C on average, heart rate increases up to 10-15 times per minute, general weakness, changes in appetite, hypotonia, decreased contractions of the pre-gastric sections, paleness of mucous membranes (anemia), catarrhal-purulent exudate discharge was noted. It is known that during acute catarrhal-purulent endometritis, these indicators pass with an increase in body temperature and an increase in the number of heartbeats.

Some morphobiochemical indicators of the blood of cows in the experimental and control groups were characterized by the same indicators before the start of the experiments, while in the cows in the control group, these indicators worsened until the end of the experiments.

**Table 1**  
**Hematological parameters of cows with acute suppurative endometritis**

Кўрсаткичлар	Ўлчов бирлиги	Ўткир йирингли эндометрит билан касалланган сигирлар	
		Назорат гуруҳи	Тажриба гуруҳи
Гемоглобин	г/л	108±0,27	113±0,29
Эритроцитлар	10 <sup>12</sup> /л	6,72±0,36	8,26±1,34
Лейкоцитлар	10 <sup>9</sup> /л	6,76±0,12	10,56±0,14
Эозинофиллар	%	4,8±0,5	2,3±0,6
Лимфоцитлар	%	63,0±2,5	40,6±0,26
Моноцитлар	%	2,5±0,27	2,3±0,3
Таёқчадроли нейтрофиллар	%	2,0±1,3	8,4±2,3
Сегмент ядроли нейтрофиллар	%	27,1±1,3	44,8±1,4
Ёш нейтрофиллар	%	0	1,1±0,5
Умумий оқсил	г/л	60,8±0,8	76,5±0,09

Table 1 shows the hematological parameters of cows infected with catarrhal-purulent endometritis in the control and experimental groups.

It is known from Table 1 that by the end of the treatment, compared to the cows treated in the control group, the hemoglobin in the cows treated with the new option in the experimental group increased by 5 g/l, erythrocytes by 1.54 million/ $\mu$ l, leukocytes decreased by 3.20 thousand/ $\mu$ l, and leukoformula indicators improvement to the level of physiological norms was characteristic.

Cows in the control group were characterized by a decrease in hemoglobin, erythrocyte count, total protein content, an increase in the percentage of leukoformula lymphocytes, eosinophils, and a decrease in the percentage of neutrophils with rod nuclei, segmented nuclei, and young neutrophils.

In the experimental and control group, the treatment efficiency of the treated cows was 90% in group 1 and 40% in group 2, that is, the treatment efficiency was 50% higher in the experimental group.

All the cows in the experimental group recovered, and the average course of treatment was 6 days. In the control group, the effectiveness of treatment was 70%, and the course of treatment was 12 days on average, without complete recovery of cows (Table 2).

**Table 2**

**Therapeutic effectiveness of treatment methods**

Гурухлар	Хайвонлар сони	Даволаш курси	Биринчи даволаш самарадорлиги %	Бепуштликнинг давомийлиги, кун
Тажриба	3	6	90	94,5
Назорат	3	12	40	153,4

We explain the improvement of the clinical physiological status and blood morphobiochemical indicators in the cows of the experimental group by the end of the experiments with the positive effect of the used drugs on the body.

In order to determine the effect of the used drug on milk productivity, the daily milking of cows in the experimental and control groups and its fat content were studied for 10 days, starting from the 30th day after giving birth.

A significant increase in milk yield was noted in the cows of the experimental group, that is, an average of 2.2 kg of milk per cow per day compared to the control group. (51.6%) was higher.

**Table 3**

**Milk yield indicators of experimental cows**

Гурухлар	Бир кунда соғиб олинган сут, кг	Назорат гурухига нисбатан, %	Сутнинг ўртача ёғлилиги, %	10 кунда соғиб олинган сут, кг	Назорат гурухига нисбатан, %
1тажриба	8,4±0,27	135,4	4,0	86,2±2,18	138,5
2 назорат	6,2±0,14	100	3,7	62,2±1,17	100

**Reference**

1. Нуриллаев А. Д. Мажидов Ф.Х. ва бошқалар. Қишлоқ хўжалик хайвонларини сунъий урчитиш.Т. 1990 й. ўқув қўлланма 200 бет.
2. Студенцов.А. П. ва бош. Ветеринарное акушерство и гинекология. М.1986 г. дарслик 350 бет.
3. Пўлатов.Г.С, Ата-Курбанов.Ш.Б. Қишлоқ хўжалик хайвонларни бўғозлигини аниқлаш. Самарканд, 1997 й. ўқув йўлланма 200 бет.
4. Поляков.А. Акушерство гинекология и искусственное осеменение сельскохозяйственных животных. М. 2000 г. дарслик 300 бет.
5. Студенцов.А. П. ва бош. Ветеринарное акушерство и гинекология. М.1986 г. дарслик 350 бет.