

HEMATOLOGICAL PARAMETERS IN THE TREATMENT OF ENDOMETRITIS IN COWS

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Annotation: In the treatment of acute purulent-catarrhal endometritis in pedigree cows after calving, an emulsion consisting of 10 g of oxytetracycline, 4 ml of ASD, 6 ml of tannin, 50 ml of fish oil, and 30 ml of distilled water was administered intrauterinely. Additionally, 20 ml of Penstrip-400 was injected intramuscularly. This method proved to be one of the most effective and convenient approaches for treating postpartum acute purulent-catarrhal endometritis.

Keywords: Purebred cow, ASD, oxytetracycline, morphological indicators, eosinophils.

INTRODUCTION

The clinical signs of acute purulent-catarrhal endometritis after calving appear on days 8-10, sometimes as early as days 6-7. It develops as a complication of retained placenta

or acute subinvolution of the uterus. When the animal is lying down, straining, or when the uterus is massaged through the rectum, a large amount of mucopurulent exudate with a foul-smelling brownish-yellow or yellow-brown color is discharged from the reproductive tract. The labia and the base of the tail become contaminated with exudate crusts [1; 3; 8; 13; 14].

According to researchers, the new bio-preparation "Nika-EM" has a high efficiency in preventing postpartum complications in cows, enhancing the immunological ability of calves. The authors have observed the therapeutic effectiveness of this preparation in treating endometritis in cows, achieving good results. Additionally, intrauterine administration of the preparation positively affected the hematological parameters in the animals' blood [4; 10].

Many scientists recommend using tissue preparations along with synestrol, antibiotics, vitamins, and sulfonamides to treat and prevent postpartum pathologies in cows. Examples include Trivitamin, Acedivit, Tetravit, prostaglandin F2 α , and antibiotics. Such a comprehensive treatment is more effective than other methods, increasing the body's resistance and accelerating tissue regeneration. Furthermore, to prevent these pathologies, ensuring full physical activity during pregnancy and regular vitamin supplementation helps prevent retained placenta, endometritis, and uterine subinvolution in cows [5; 6; 9; 12; 11].

If you need further refinements or formatting adjustments, let me know! According to the authors, in cows with clinically manifested acute purulent-catarrhal endometritis, the tissue index in the mucus obtained from the genital tract decreases to a minimum level, accompanied by a high indicator of toxic factors. In cases of subclinical endometritis, the tissue index is 1.2 ± 0.24 , and toxic factors are 0.63 ± 0.26 . The author notes that during embryonic death, smears from mucus obtained from the genital tract reveal epithelial cells of the uterine wall as well as neutrophils, with a tissue index of 2.9 ± 2.08 and a toxic factor of 1.25 ± 0.63 .

Scientists, in their studies, have characterized hematological examinations in postpartum endometritis in cows by leukocytosis, lymphocytopenia, hypoeosinophilia, neutrophilia, and an increase in banded neutrophils. According to the author, in the acute form of endometritis, a decrease in the total protein content, albumin, and globulins in the blood serum was detected.

METHODS

For the experiments, 15 cows diagnosed with postpartum endometritis were selected based on clinical examination at the "Farovon Grand Invest" cattle breeding farm in Okdaryo district, Samarkand region.

The diseased animals were divided into three groups of five cows each, following the principle of paired similarity.

In the first experimental group, an emulsion consisting of 10 g of oxytetracycline, 4 ml of ASD-2, 1.5 g of tannin, 50 ml of fish oil, 1 g of fluconazole, and 35 ml of distilled water was administered intrauterinely. Additionally, 20 ml of the Penstrep-400 preparation was injected intramuscularly.

In the second experimental group, one tablet each of Trichopol and Iodopen was administered intrauterinely. Additionally, 20 ml of the Penstrep-400 preparation and 10 ml of Acedvit were injected intramuscularly.

In the third control group, to treat postpartum purulent-catarrhal endometritis, 10 ml of Limoxin-200 was administered intramuscularly. The uterus was washed with a 1:5000 potassium permanganate (KMnO_4) solution, and two Furazolidone tablets were inserted intrauterinely.

RESULTS

In the experiment, when hematological tests were conducted on the animals, significant changes in the blood's morphological and biochemical indicators were observed. In the second group of cows treated with the addition of an emulsion and fluconazole administered intrauterine for the treatment of post-partum endometritis, the changes were more noticeable compared to the commonly accepted treatment methods.

When the data was analyzed by group throughout the experiment, the number of erythrocytes in the first experimental group decreased as follows: on the 5th day, it decreased by 4.4%, on the 7th day by 13.8%, and on the 14th day by 28% ($P < 0.05$). In the second experimental group, erythrocyte count decreased by 5% on the 5th day, 14% on the 7th day, and 17% on the 14th day ($P < 0.05$). In the third control group, erythrocyte count also decreased during the experiment: by 7.2% on the 5th day, by 9.4% on the 7th day, and by 20.8% on the 14th day.

In the first experimental group, the number of leukocytes also decreased over time, showing a reduction of 9.5% on the 5th day ($P < 0.05$), 11% on the 7th day ($P < 0.05$), and 21.4% on the 14th day ($P < 0.05$). In the second experimental group, the number of leukocytes initially increased by 4% on the 5th day, but then decreased by 9.9% on the 7th day and by 19.6% on the 14th day compared to the baseline ($P < 0.05$). In the third control group, leukocyte count also decreased: by 5.5% on the 5th day, 13.8% on the 7th day, and by 14.8% on the 14th day.

Hemoglobin levels in the first experimental group decreased in proportion to the number of erythrocytes. Specifically, on the 5th day, hemoglobin decreased by 8.1%, on the 7th day by 16.4%, and on the 14th day by 20.6% ($P < 0.05$). In the second experimental group, hemoglobin decreased consistently throughout the experiment: by 8.5% on the 5th day, 10.1% on the 7th day, and 16.5% on the 14th day ($P < 0.05$). In the third control group, hemoglobin also decreased: by 9.7% on the 7th day and by 13.5% on the 14th day compared to the baseline.

At the beginning of the experiment in the first experimental group, changes in blood morphology were already noticeable, with erythrocyte sedimentation rate decreasing by 2.2% on the 3rd day, 15.6% on the 7th day, and 24.5% on the 14th day ($P < 0.05$) compared to the baseline. In the second experimental group, the erythrocyte sedimentation rate decreased by 3.2% on the 3rd day and 4.3% on the 5th day, continuing to decrease during the experiment, with a final reduction of 24.5% ($P < 0.05$). In the third control group, the erythrocyte sedimentation rate also decreased gradually: by 5.1% on the 3rd day, 10.1% on the 5th day, and 23.3% on the 14th day ($P < 0.05$). Cows affected by acute purulent-catarrhal endometritis may show an increase in hemoglobin levels, erythrocyte count, and erythrocyte sedimentation rate due to dehydration and blood thickening as a result of

diarrhea. After the administration of treatment, when physiological processes in the animals improve, a decrease in hemoglobin, erythrocyte count, and erythrocyte sedimentation rate is observed.

CONCLUSION

1. After administering 20 ml of the prepared emulsion into the uterus and 20 ml of Penstreb-400 intramuscularly, the following changes were observed in blood parameters: The erythrocyte count decreased by 18%. The leukocyte count decreased by 21.4%. Hemoglobin levels decreased by 20.6%. The erythrocyte sedimentation rate decreased by 24.5%.
2. After administering 100 ml of the prepared emulsion into the uterus and 20 ml of Penstreb-400 intramuscularly, the following changes were observed: The eosinophil count increased by 44.4%. The lymphocyte ratio increased by 44.2%. The monocyte count increased by 18.1%. The banded neutrophils decreased by 52.4%. The segmented neutrophils decreased by 39.2%. These results indicate that the emulsion has a significant effect on the immune system and blood composition of the cows, playing a key role in improving the condition of acute purulent-catarrhal endometritis after calving. The changes in blood parameters confirm the improvement or reduction of the endometritis condition during treatment.

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