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Changes in Blood Leucoformula During the Treatment of Puturous-Necrotic Processes in Cows' Toes With Different Methods

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Abstract: *Cows with various purulent-necrotic conditions have their fingers treated with injections of 25 ml of Katazal immunostimulator, once every 48 hours for a total of three times, 10 ml of 0.5% novocaine, 4 ml of Lincomycin mixed intramuscularly, and 4 ml of Oxytetracycline + Streptocide + Iodoform (4: 4:2 ratio) to speed up the absorption of Demixidine stimul, which is regarded as one of the practical and efficient methods for the treatment of various purulent-necrotic processes in the finger area of animals, where the number of eosinophils increased by 93.8%, the number of neutrophils with segmental nuclei increased by 45.2%, the number of monocytes increased by 93.8%, and the number of neutrophils with rod nuclei increased by 58. It was characterized by a decrease of 6% and the relative index.*

Key words. *Catazal, lincomycin, oxytetracycline, streptocide, iodoform, demyxidine, morphological indicators, eosinophils, neutrophils with rod nuclei, neutrophils with segmental nuclei, lymphocytes and monocytes.*

Relevance of the topic.

Vetosporin probiotic was added to the therapy mix for Holstein-Friesian cows with purulent pododermatitis. Vetosporin was found to reduce the number of treatments from 3 times to 2 times compared to sick cows that were not given vetosporin. The research showed that when a complex bacteriostatic powder dressing was used in diseased cows that drank vetosporin, the animals healed the purulent-necrotic process in the toe area and accelerated the regenerative recovery by 4-5 days. [2; 20-21-p., 3; 122-p.].

When the drug "Microelement Degtyar gel" was used twice, after 5 days of bandaging, and after 10 days of the complex drug "BINOVAK IDD," it was observed that the general condition of the animals was satisfactory. This method was found to be somewhat effective for treating purulent pododermatitis in cows. Clinically, these animals displayed similar symptoms to those of the animals treated with "Targent gel with microelements" alone: elevated body temperature, heart rate, and respiration; swelling of the wound; pain on palpation; local temperature rise; small amount of exudate; wound surface determined to be dry; and on day 16 of treatment, local temperature of the surrounding tissues was normal. [5; 27-29-p.].

Purulent-necrotic diseases of the finger region of giant horned moles have been studied, and the authors have suggested a complicated treatment plan. The antibacterial, anti-inflammatory, and wound-healing properties of "Zhdanov Antiseptic" are present. This complex's birch ointment possesses antiseptic, local tickling, keratoplasty, keratolytic, anti-inflammatory, and disinfecting effects. speeds the wound's healing, dries

the wound, and enhances the formation process [7; pp. 96–95]. The drug's composition contains aromatic compounds and sulfur that is organically bonded, which gives it keratoplastic and antiseptic properties as well as anti-inflammatory and local anesthetic properties.

A 0.2% solution of bupivacaine was used in place of novocaine for epidural anesthesia in the treatment of hoof illnesses in cattle, and no adverse effects were noticed in the animals during hoof cleaning operations [8; pp. 103-105]. The existence of a sensory feature of encirclement (analgesia) when the animals are upright is what the authors claim distinguishes the complicated treatment of Mortellaro's illness in big horned cattle treated with epidural administration of 0.2% bupivacaine solution.

The authors claim that veterinary work on treating foot infections, cleaning, and handling hooves in a veterinary department outfitted with an animal fixation device removes bacteriological contamination of the building and surroundings and guarantees that cows are preserved for 4–8 lactations. [1; 24-26-p.].

Dermadez was used in conjunction with a bandage to treat purulent pododermatitis in cows, and it was discovered how the medication affected blood's hematological markers dynamically [4; 49-50-p.] According to the findings of the trials, Dermadez has a definite therapeutic efficacy, the duration of the inflammatory process is decreased, and the length of therapy is cut by 9 days when compared to the control group of animals.

Researchers claim that the study of blood's biochemical markers has great diagnostic value, that a specialist can accurately diagnose an animal's condition with only a partial hematological and biochemical analysis of blood, and that routine blood analysis can predict both the general health of the organism and the effects of disease. Coordination of care enables the investigation of a drug's effects [10; pp. 44–46, 9; 478–481–p].

According to the author's data, immunological, biochemical and hematological indicators in cattle with infectious hoof dermatitis after treatment-prophylactic measures with the use of the new drug increased the concentration of γ-globulins to 18.8 ± 1.0 g/l, IgM to 2.3 ± up to 0.2 mg/ml, lysozyme activity up to 53.2 ± 1.4 μg/ml, phagocytic index up to 60.2 ± 2.8%, phagocytic number up to 4.5 ± 0.12 units, antioxidant activity of serum lipids increase to 37.3 ± 1.46%, increased nitric oxide production to 12.4 ± 0.48 μmol/l, percentage of rod-shaped neutrophils to 7.4 ± 0.6, eosinophils to 5.2 ± 0.7 and monocytes decreased to 6.4 ± 0.6. [6; p. 19].

Research purpose. A dairy farm treats cows with purulent-necrotic processes of the finger area in order to analyze the changes in the blood's leukoformula and to create techniques for better treatment based on a certain amount and sequence (eosinophils, neutrophils with rod nuclei, neutrophils with segmental nuclei, lymphocytes and monocytes).

Research object and methods. The Samarkand State Veterinary Medicine, Animal Husbandry and Biotechnology University, the "Farovon Grand Invest" cattle farm in the Okdarya district of the Samarkand area, and the labs of the Samarkand regional hospital all hosted scientific investigations and experiments.

Following a clinical examination, 15 cows from the livestock farm "Farovon Grand Invest" in the Okdarya district were found to have diverse purulent-necrotic processes in the finger area.

The animals in the first experimental group had their fingers and hooves cleaned, their pus and dead tissue were surgically removed, they were then bathed in 5% formalin, 10 ml of 0.5% novocaine and 4 ml of Lincomycin were mixed and injected intramuscularly, and oxytetracycline + To hasten the absorption of streptocide + iodoform (4:4:2), Demyxidine stimulator was applied. Finally,

The animals of the second experimental group were cleaned and clipped toes and hooves, and pus and dead tissue were surgically removed, then bathed in 5% formalin, after the pus discharge stopped, Catazal was injected intravenously from the immunostimulator, 25 ml, once every 48 hours for a total of three times. , 10 ml of 0.5% novocaine and 4 ml of Lincomycin were mixed and injected into the muscle, and to accelerate the absorption of oxytetracycline + streptocide + iodoform (4:4:2 ratio), Demiksidin stimulating agent was applied, then the powders were sprayed on the pathological focus and tightly bandaged.

The animals in the third control group received standard care, including having their toes and hooves cleaned and clipped, having pus and dead tissue surgically removed, being bathed in 5% formalin, having bicillin-5 injected intramuscularly, being mixed with 0.9% saline solution, and having their pathological focus sprayed

with oxytetracycline + streptocide + iodoform powder (4:4:2) before being bandaged.
The animals underwent clinical evaluation both before and after the experiment, and blood morphological parameters were evaluated twice before the experiment, as well as on the fifth, tenth, fifteenth, and twenty-fifth days of the trial following the commencement of the therapy.

Analysis of the results obtained

The experimental cows had their blood morphological markers and clinical physiological indicators evaluated. In addition to the conventional treatment methods, 0.5% novocaine with Lincomycin and oxytetracycline + streptocide + iodoform (4:4:2) were used to hasten the absorption of eosinophils in the animals of the first experimental group when the obtained data were analyzed by groups during the experiment. On the 10th day of the experiment, the amount grew by 26.3%, but by the 25th day of the trial, it had grown by 47.4% ($p < 0.05$). Young neutrophils declined during the course of the trial; by day 5, it was down by 21.4% to 35.7%; by day 15, there was no longer any discernible decline. During the trial, the number of neutrophils with rod nuclei also dropped; on the tenth day, it dropped by 42.9% ($p = 0.05$), and at the end, it dropped by 50%. In this group, neutrophils with segmental nuclei had the opposite pattern and grew during the course of the trial, growing by 20.3% on day 10 and by 45.9% ($p < 0.05$) on day 25. When compared to the beginning indications on the 10th day, the relative index of lymphocytes in the leukoformula dropped in the first group of animals during the experiment by 9.1% ($p = 0.05$) and 19.6% ($p = 0.05$) respectively. was observed to have diminished

In the animals in this group, the number of monocytes increased over the course of the experiment, rising from the beginning by the end by 160%. The number of monocytes in the animals increased over the course of the experiment, rising from the beginning by the 5th day by 60%, the 15th day by 140%, and the final day by 160%.

In addition to the widely used procedures, Catazal immunostimulator was injected intravenously to hasten the absorption of Oxytetracycline + Streptocide + Iodoform and Lincomycin with 0.5% novocaine (in a 4:4:2 ratio). When the blood was examined, it was discovered that they had the following alterations.

When compared to the starting values ($p < 0.05$), it was discovered that the number of eosinophils in these animals grew during the trial, reaching 28.1% on the fifth day, 62.5%, 81.2%, and 93.8% on the 10th-15th and 25th days, respectively. Young neutrophils in this group dropped during the course of the investigation, dropping by 16.7% on day five, 58.3% on day ten, and going completely unrecorded on day fifteen. On the 10th day of the experiment and by 58.6% ($p < 0.05$) on the 25th day, respectively, in the animals of the second experimental group, the number of rod-shaped neutrophils dropped. In this group, neutrophils with segmental nuclei increased during the course of the trial, increasing by 27.7% on day 10 and by 45.2% ($p < 0.05$) on day 25. On the tenth day of the trial, the proportion of lymphocytes dropped by 12.3%, and at the end of the tests, it had dropped by 21.2% from the starting levels. Monocyte counts grew during the course of the trial by 18.7% on the fifth day, by 43.7% on the tenth day ($p < 0.05$), and by 93.8% at the conclusion ($p < 0.05$). It was observed that it got worse.

From the beginning of the experiment, the percentage of eosinophils in the blood of the animals in the third control group increased. It increased by 11.8% on the fifth day of the experiment, by 29.4% on the tenth day of the experiment ($p<0.05$), by 44.1% on the fifteenth day ($p < 0.05$), and by 52.9% ($p < 0.05$) compared to the initial indicators. The number of young neutrophils in this group dropped during the course of the trial, falling by 12.5% on Day 5, 25% on Day 10, 50% on Day 15, and completely disappearing by Day 25. On day five of the experiment, bacillus nucleated neutrophils were found to have fallen by 5.8%. They then continued to steadily decline over the remainder of the trial, reaching a final loss of 19.2%. In this group, the number of neutrophils with segmental nuclei rose during the course of the trial, increasing by 6% on day 5, 16.1% on day 10, 33.8% on day 15, and 45.2% on day 25. When compared to the starting values at the conclusion of the trial, the proportion of lymphocytes in the leukoformula declined by 19.5% ($p < 0.05$), 7.3% on the 10th day of the experiment, and 14.5% on the 15th day. Monocytes rose during the course of the trial, increasing by 10.7% on the fifth day, by 28.6% ($r = 0.05$) on the tenth day, and by 71.4% ($r = 0.05$) at the conclusion.

Due to the fact that they exhibit active phagocytic characteristics and perish during the process of immunological activation, the number of monocytes in the blood of cows with different purulent-necrotic processes in the finger area may decrease is explained. The quantity of monocytes grew as the physiological processes in the bodies of ill animals improved after treatment techniques were implemented.

When we examined the hematological parameters of the blood, we discovered that the number of eosinophils, neutrophils with segmented nuclei, and monocytes increased in the animals of the first and second groups, while the number of lymphocytes decreased. This confirmed the difference in the clinical signs of the animals of the three experimental groups during the treatment. Improved treatment approaches suggest that the diseased process will recover and that the reticuloendothelial system will be stimulated.

Conclusion

1. In addition to the generally accepted methods, the treatment of various purulent-necrotic processes in the finger area of cows includes injecting 25 ml of Katazal from the immunostimulator into the vein once every 48 hours, a total of three times, administering 10 ml of 0.5% novocaine, 4 ml of Lincomycin mixed intramuscularly, and using oxytetracycline + streptocide + iodoform (4:4:2 ratio)

2. In order to treat different purulent-necrotic conditions in the finger area of cows, 25 ml of Katazal immunostimulator, 10 ml of 0.5% novocaine, 4 ml of Lincomycin combined intramuscularly, and oxytetracycline + streptocide + iodoform are all injected into the vein three times in total (4: 4:2 ratio) The number of eosinophils in the blood increased by 93.8%, the number of neutrophils with segmental nuclei increased by 45.2%, the number of monocytes increased by 93.8%, the number of neutrophils with rod nuclei increased by 58.6%, and the relative index of lymphocytes decreased by 21.2% when Demixidine stimulants were used in the standard and quantity to speed up the absorption.

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