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TREATMENT OF ASEPTIC INFLAMMATION IN RABBITS

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Abstract
In this article, in the treatment of experimentally induced aseptic inflammation of the fingers of rabbits, calciummag 2 ml intravenously once every 24 hours only three times, and phenylbutazone-20 intravenously 0.2 ml once every 48 hours only three times a day according to the norm and quantity, it was determined that the red blood cells in the blood increased by 14.8%, the number of leukocytes increased by 1.6%, the amount of hemoglobin increased by 5.7%, the percentage of lymphocytes in the blood increased by 4%. It is noted that this method of treatment reduces inflammatory processes, enhances regeneration processes, and reduces the duration of treatment by 4 days.

Keywords: Calciummag, phenylbutazone-20, morphological indices, erythrocytes, leukocytes, hemoglobin, lymphocytes.

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Introduction

Relevance of the topic. In recent years, physiological changes of an adaptive nature in the body of imported calves and calving cows have been studied using hematological indicators, and metabolic disorders in cows were observed more often in the days after calving than in the bodies [5]. According to the authors, an increase in the total protein content in the blood, protein metabolism disorders due to an increase in the concentration of creatine phosphate kinase, mineral metabolism disorders accompanied by a decrease in the amount of calcium and phosphorus, and leukocytosis due to an increase in basophils and eosinophils in the blood of cows during calving, associated with adaptation to new conditions, were noted.

According to some authors, purulent pododermatitis of the heel of the hooves in large horned cattle includes complex destructive-dystrophic necrotic processes. These pathological changes lead to tissue damage and regeneration, impaired tissue cell respiration, increased permeability of microcirculatory pathways, the formation of tumors of various genesis, which create a favorable environment for the reproduction of microorganisms, and the transition of the inflammatory process to a chronic stage [6].

As a result of the studies of A.V. Izdepsky, it was found that aseptic serum synovitis occurs due to a decrease in antioxidant activity, increased lipid peroxidation in both blood serum and synovial fluid, as a result of a weakening of the antiradical protection of these substrates [3;].

Some authors say that in the treatment of purulent-necrotic injuries of the fingers, it is important to find a means to quickly clean the surface of the wound from purulent exudate, early elimination of the inflammatory process, the appearance of healthy granulation in the wound, as well as the transition from the inflammatory-dystrophic phase (hydration) to the regenerative phase (dehydration) [8;4].

In the treatment of purulent pododermatitis in Holstein-Friesian cows, the probiotic Vetosporin was used in addition to the treatment regimen. As a result of the studies, it was found that when a complex bacteriostatic powder dressing was used in sick cows treated with Vetosporin, the animals accelerated the healing of the purulent-necrotic process in the toe area and accelerated its regenerative-recovery by 4-5 days, and the number of treatments for the pathological process

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was reduced from 3 to 2 times compared to sick cows not treated with Vetosporin [1;2;9;].

Laboratory tests in cows suffering from pododermatitis showed a decrease in hemoglobin in their blood to 96 g/l, a decrease in the number of erythrocytes to 4.7 g/l, pronounced leukocytosis, and an increase in the erythrocyte sedimentation rate. According to the author, after therapeutic and prophylactic measures using the new drug, hematological parameters in large horned animals with hoof dermatitis were found to decrease the proportion of rod-shaped neutrophils to 7.4 ± 0.6, eosinophils to 5.2 ± 0.7, and monocytes to 6.4 ± 0.6. [7].

The purpose of the study. In the treatment of aseptic inflammations in rabbits, it consists in studying changes in the clinical signs in the fingers of rabbits and the morphological indicators in their blood.

Research object and methods. Scientific examinations and experiments were conducted at the "Veterinary Surgery and Obstetrics" department of the Samarkand State Veterinary Medicine, Animal Husbandry and Biotechnology University and in the laboratories of the Samarkand Regional Hospital.

In experiments, in order to study the effect of phenylbutazone-20 and calcium mag on the body and the therapeutic effect of using it in the treatment of aseptic inflammations, 15 rabbits with an experimentally created aseptic inflammation on the toe of rabbits were the object of research.

The rabbits of the third group were treated with generally accepted methods for the treatment of aseptic inflammation, for which 2 ml of hydrocortisone and 2 ml of 0.5% novocaine were injected intramuscularly.

Hydrocortisone 2 ml, 0.5% novocaine 2 ml intramuscularly, calcium mag 2 ml once every 24 hours three times and potassium iodine 0.1 ml once every 24 hours three times were administered to the rabbits of the first experimental group. Rabbits of the second experimental group were administered 2 ml of calcium mag intravenously once every 24 hours for a total of three times, and 0.2 ml of phenylbutazone-20 intravenously once every 48 hours for a total of three times.

Experimental experiments were conducted on purebred dairy cows in the conditions of livestock farms. Clinical signs of the pathological process were examined using general and special examination methods, i.e., inspection, palpation, percussion, and ambulation. Before the start of treatment and on days

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3, 7, 10, and 15, blood was taken from experimental rabbits and examined for morphological parameters, and differences in the course of the disease were identified in rabbits by conducting clinical examinations with different methods of treatment.

Analysis of the results obtained. Before the start of treatment, clinical examinations were conducted to determine the differences in the course of the disease with different methods of treatment. Before treatment, when examining the fingers of the experimental and control groups, redness, swelling and local temperature increase were observed on the skin of the fingers, as well as severe pain during palpation. On the second day of treatment, clinical signs characteristic of aseptic inflammation were clearly visible in rabbits of all groups, namely, thickening of the skin around the focus of inflammation, high local temperature, and enlargement of the injured area. The rabbits were lethargic, lost their appetite, raised their injured legs, the contour of the finger joint was enlarged, and they felt pain during passive movement.

By the 3rd day of the experiment, the swelling around the affected joint in the first group of animals increased, severe pain on palpation, fluctuation, and a very high local temperature were noted. Similar clinical signs were noted in the animals of the second and third groups.

By the 8th-9th day of treatment, one rabbit in the first group, which was additionally administered calciummag in addition to traditional methods, completely recovered, and four rabbits were noted to be on the verge of recovery, i.e., their general condition and appetite were normal, and the swelling around the finger disappeared.

By the 6th-7th day of treatment, three rabbits in the second group, which was additionally administered calciummag and phenylbutazone-20 in addition to traditional methods, completely recovered, and two rabbits were noted to be on the verge of recovery, i.e., their general condition and appetite were normal.

The three rabbits in the third control group were on the verge of recovery on the 9th-10th day, and the rabbits were completely recovered on the 12th day of treatment. It was found that in the second group, which was treated with calcium magnesite and phenylbutazone-20 in addition to the traditional method of treatment, the recovery period was reduced by an average of 4 days compared to the control group.

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During the treatment of aseptic inflammatory processes in the experiment, all rabbits were examined, along with clinical physiological indicators, as well as morphological indicators of their blood.

Analysis of the data obtained showed that, in addition to the generally accepted methods, the number of erythrocytes in the blood of the first group of rabbits, which were administered intravenously 2 ml of calciummagnesium 3 times every 24 hours and intravenously 0.1 ml of potassium iodide 3 times every 24 hours, decreased from the third day, that is, by 9% on the 3rd day of the experiment, and by the end of the experiment, the increase was 5.3% ($P<0.05$) compared to the initial indicators.

The number of leukocytes in the blood of rabbits in this group increased from the 3rd day of the experiment and was noted to have increased by 19%, and by the end of the experiment by 3% ($P<0.05$).

The change in hemoglobin levels was similar to the change in erythrocyte count, decreasing by 8% on the 3rd day of the experiment and by 15% on the 5th day of the experiment ($P <0.05$), but later, on the 15th day of the tests, its level increased by 2%.

In the rabbits of the first experimental group, it was noted that the percentage of lymphocytes in the blood decreased by 15% on the 3rd day, 19% on the 15th day of the experiment, and 4% on the 15th day (Fig. 1).

When examining the blood of the second group of rabbits in the experiment, in which 2 ml of calcimag was administered intravenously three times every 24 hours, and 0.2 ml of phenylbutazone-20 intravenously once every 48 hours, the following changes were noted.

It was found that the number of erythrocytes decreased by 7.5% at the beginning of the tests, that is, on the 3rd day, by 11.2% on the 5th day, but by the 10th day of the experiment, it increased by 12.9% ($P<0.05$) compared to the initial values, and by the 15th day - by 14.8%.

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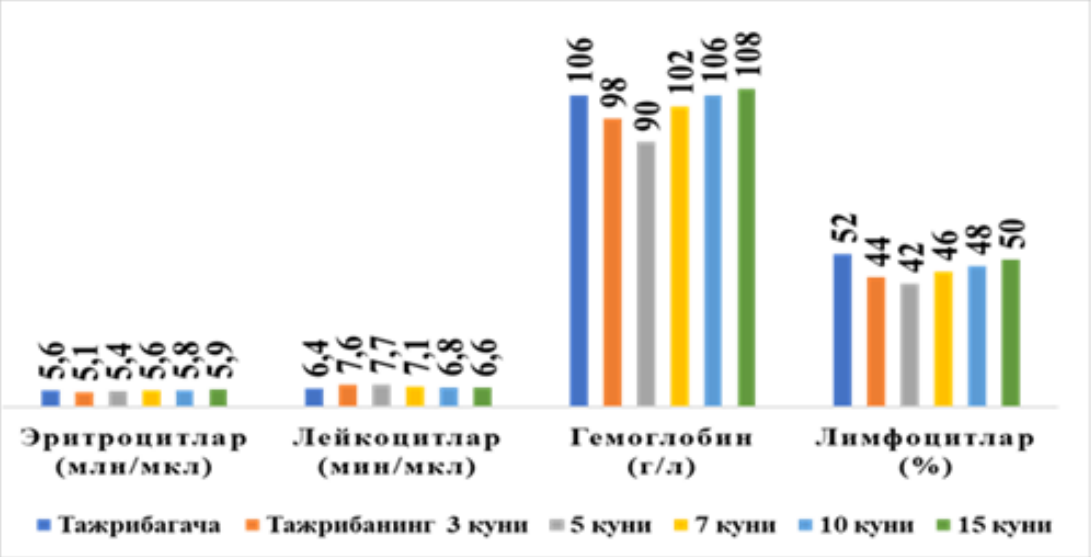

Figure 1. Morphological indicators of the blood of rabbits of the first experimental group.

The number of leukocytes began to increase from the 3rd day of the experiment and showed an increase of 19.3% on the 3rd day, 22.5% on the 5th day and 1.6% increase compared to the initial values at the end of the experiment.

The amount of hemoglobin decreased by 7.7% on the 5th day of the tests, and on the 10th and 15th days of the experiment, it increased by 3.8% and 5.7%, respectively, compared to the initial values.

In the rabbits of the second experimental group, the percentage of lymphocytes in the blood decreased by 8%, 14% and 6% on the 3rd-5th and 10th days of the experiment, respectively, then increased, and at the end of the experiment, it was shown to increase by 4% compared to the initial values (Fig. 2).

It was noted that the amount of erythrocytes in the blood of rabbits in the third control group decreased by 9.7% on the 3rd day of treatment and by 11.6% on the 5th day, and then showed a wave character with a slight decrease, decreased by 3.9% on the 10th day of the experiment, and increased by 3.8% at the end of the experiment.

The number of leukocytes increased throughout the experiment, increasing by 15.6% compared to baseline on the 5th day of treatment and increasing by 4.6% at the end of the experiment.

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Hemoglobin concentration also decreased by 13.8% (P<0.05) on the 5th day of the experiment, but by the end of the experiment its amount began to increase and increased by 1.9% compared to baseline.

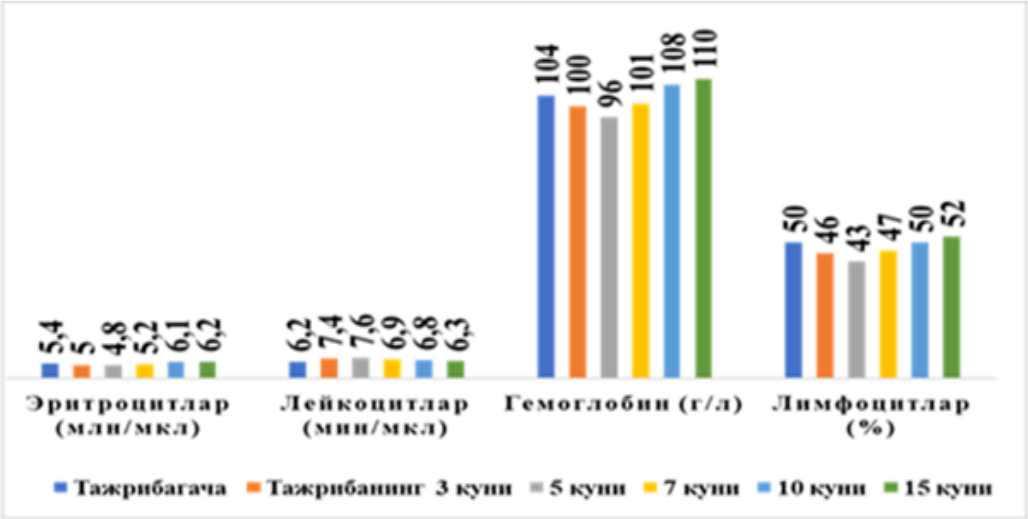

Figure 2. Morphological indicators of the blood of rabbits of the second experimental group.

The percentage of lymphocytes in the blood of rabbits in the third control group decreased throughout the experiment and showed a wave-like character, decreasing by 22.3% on the 3rd day of the experiment compared to the beginning of the experiment, by 18.6% on the 5th day of the experiment and by 13% on the 10th day of the experiment, and by 3.8% (P< 0.05) compared to the initial values at the end of the experiment (Fig. 3).

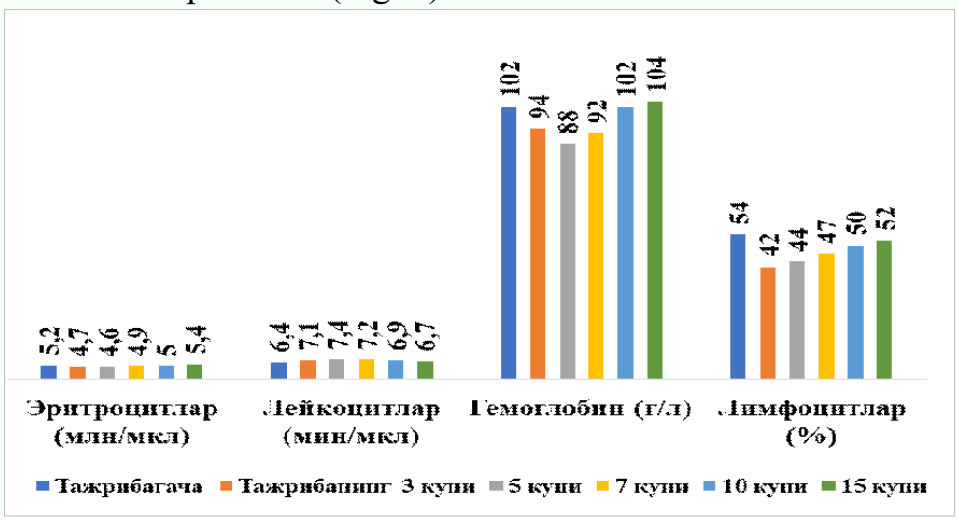

Figure 3. The third experimental group is morphological of the blood of rabbits

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In order to confirm the difference in clinical signs in the three experimental groups of rabbits during treatment, when we analyzed the hematological parameters of the blood, the rapid recovery of morphological parameters of the blood in the first and second groups, in particular, an increase in the number of erythrocytes and hemoglobin, indicates a rapid increase in oxidation-reduction processes in damaged tissues or in the body as a whole, while a decrease in the number of leukocytes and lymphocytes during the experiment indicates the correction of the pathological process in this group of animals, stimulation of the reticuloendothelial system.

Thus, it was observed that the three rabbits in the third control group, which had experimentally induced aseptic inflammation in the toes, were on the verge of recovery on the 9th-10th day, and the rabbits were completely recovered on the 12th day of treatment.

In addition to the conventional method in the experiment, it was noted that the recovery period of the rabbits in the second group, where calcium magnesium and phenylbutazone-20 were used, was reduced by an average of 4 days compared to the control group.

Summary

1. In the treatment of experimentally induced aseptic inflammation in the finger of rabbits, it was noted that the use of calcium magnesium and phenylbutazone in a certain rate and quantity reduces the inflammatory processes, enhances the regeneration processes, and the recovery time in rabbits is reduced by an average of 4 days compared to the control group.

2. In the treatment of experimentally induced aseptic inflammation in the finger of rabbits, calcium mag 2 ml intravenously once every 24 hours for a total of three times, phenylbutazone-20 intravenously for a total of 0.2 ml once every 48 hours three times in a certain standard and amount, the erythrocyte in the blood increased by 14.8%, the number of leukocytes by 1.6% , the amount of hemoglobin increased by 5.7% and the percentage of lymphocytes in the blood by 4%.

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References

1. Гимранов В.В., Гиниятуллин И.Т. Особенности и способы применения пробиотиков при гнойно-некротических процессах у крупного рогатого скота. Актульные вопросы и пути их решения в ветеринарной хирургии. Материалы Международной научно-практической конференции, посвященной 80-летию со дня рождения профессора Э.И.Веремея. Витебск, ВГАВМ, 2019. –С. 20-21.
2. Жубантаева А.Н. Проекционно-анатомическое обоснование способов лечения копытной гнили у овец. // Дисс... докт.фил. (PhD). Костанай, 2014. – 122 с.
3. Издепский А.В. Состояние антиоксидантной защиты синовиальной жидкости молодняка крупного рогатого скота при асептических артритах. Актульные вопросы и пути их решения в ветеринарной хирургии. Материалы Международной научно-практической конференции, посвященной 80-летию со дня рождения профессора Э.И.Веремея. Витебск, ВГАВМ, 2019. –С. 37-38.
4. Ляшенко П.М., Марьин Е.М., Ермолаев В.А. Морфологические изменения в сосудах при гнойных язвах мякишей у крупного рогатого скота. Материалы Международной научно-практической конференции “Аграрная наука и образование на современном этапе развития: опыт, проблемы и пути их решения”. Ульяновск, УГСХА, 2009. –С. 161-164.
5. Маркова Д.С., Байзульдинов С.З., Калюжный И.И., Алехин Ю.Н. Гематологические параметры у коров при метаболических нарушениях в период адаптации. Вестник Курской государственной сельскохозяйственной академии. № 4. Курск, 2018. –С. 106-111.
6. Марьин Е.М., Лященко П.М., СапожниковА.В. Клиническая и патоморфологическая характеристика гнойных пододерматитов у крупного рогатого скота // Вестник Ульяновской ГСХА. -2015. -№4. -С.123-132.
7. Писаренко В.Ф. Разработка и апробация лечебно-профилактического средства при развитии инфекционного пальцевого дерматита у крупного рогатого скота. Автореф. // Дисс…канд. вет. наук. Белгород, 2014. – 19 с.
8. Симонова Л.Н., Концевая С.Ю., Симонов Ю.И. Гистологические показатели гнойно-некротических поражений копытец у крупного рогатого скота. Вестник Брянская ГСХА, 2013. 3 6. –С. 23-25.
9. Pardaeva, S. A., Mirzayev, S. M., & Niyozov, H. B. (2023). Zotli sigirlarda aseptik pododermatit jarayonlarini uchrash darajasi. golden brain, 1(13), 4-9.