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HEMATOLOGICAL CHANGES IN CATTLE NODULAR DERMATITIS

S. S.Tursunov
Veterinary Research Institute

Abstract:
Cattle nodular dermatitis disease. Out of 200 bulls in a sick farm in the Yangi Yul district of Tashkent region, 10 bulls with a clinically pronounced untreated positive result were isolated and studied, and 10 healthy cattle with a negative result when serologically reacted were isolated from blood serum taken from cattle in the “Boz Suv Chorva Va Pardanna Ivest” farm of the same district. Hematological studies were conducted.

Keywords: Nodular dermatitis, virus, region, district, hematology, cattle, bull, disease

Relevance of the topic:

Today, cattle nodular dermatitis disease is one of the urgent problems facing veterinary science and practice in the republic. Because the disease is widespread, diagnosis is quite difficult, and the course of the disease, clinical signs and pathological changes are similar to those of a number of other diseases. This, in turn, creates serious difficulties in the diagnosis of the disease. The development of pathomorphological diagnostics for the accurate diagnosis of this disease is one of the current urgent issues. It has been found that cattle with high productivity are more susceptible to lumpy dermatitis, and up to 90% of animals on the farm are infected with the virus [3, 5, 6, 7.]. Based on the above data, the only way to eliminate the disease is to make a rapid diagnosis using the IFT method, develop pathomorphological diagnostics, and implement preventive and control measures [2].

Materials and methods of research

In order to study the results of hematological examination of cattle for nodular dermatitis, 10 bulls with clinically obvious positive results from 200 bulls in a sick

farm in the Yangi Yul district of the Tashkent region, and 10 healthy cattle with negative results in serological reactions were isolated from the blood serum of cattle from the "Boz Suv Chorva Va Pardanna Ivest" farm in the same district (Table 1). During the experiments, samples were taken from the blood, skin, tears, and semen of the sick bulls using special disposable swabs in a sterile manner. Blood was taken from sick and healthy cattle to check and compare hematological analyzes.

A photometric method was used to determine hemoglobin in cattle. For this, hemoglobin was determined using a photoelectrocolorimetry (PEC) apparatus. First, a reagent was prepared for the determination of hemoglobin. For this purpose, 4 ml of water was removed from 1 liter, i.e. 1000 ml of distilled water, and 4 ml of ammonia (NH3) was added to 996 ml of distilled water, the solution was thoroughly mixed and stored for 2 hours at a temperature not exceeding +25 0C [1, 4] and used to determine the amount of hemoglobin in the blood (Table 1).

Nodular dermatitis during illness hematological study diagnostics

T/P	Groups	Name and location of the farm	number of head of cattle	condition
1	Experimental group	New road district, Tashkent region	10	sick
2	Control group	"Бўз сув чорва ва парранда ивест" New road district, Tashkent region	10	healthy

To determine the number of erythrocytes, the jugular vein of the experimental cattle was wiped with alcohol, the blood vessel was punctured with a needle, and blood was taken from the vein. The obtained blood was drawn up to 0.5 number of a special erythrocyte counting melange with a special pipette, and in order to dilute the blood, a 3% solution of sodium chloride was drawn up to 101 number, and both ends of the melange were squeezed tightly between the thumb and middle finger and mixed (up and down). After one drop of the mixture in the melange was placed, the Goryaev counting grid cover was closed, after the Newton ring was formed, one drop of the working solution was added and the number of erythrocytes in 1 mm3 from 16 small cells to 5 large cells was counted under a microscope in millions.

Two different methods were used to determine the blood clotting time. The first method was the Maramalisky method, where blood from cattle was collected by dropping 8-10 drops of blood on the glass. Research results Results of hematological examination of blood samples taken from experimental cattle by classical and modern methods.

Research results. A photometric method was used to determine hemoglobin in cattle. For this, hemoglobin was determined using a photoelectrocolorimetry (PEC) apparatus.

Changes in the blood of cattle in the 1st experimental group, in which nodular dermatitis was detected, were observed from the 3rd to the 5th day of the experiment.

2- table Cattle are nodular in dermatitis hematological changes results

№	Groups are the number of heads of cattle	Hemoglobin, (g/l) ratio	Erythrocytes 1012/l	Leukocytes 109/l	Blood clotting time per minute	ECT mm (per minute)			
						15	30	45	60
	physiological norm	109,4-112,7	5,0–7,5	4,5–12,0	6,5	0,1	0,25	0,4	0,6–0,8
1	Experimental group 1	98±0,58	4,2±0,025	13,9±0,19	4,2±0,02	0,23	0,34±0,02	0,63±0,03	0,92±0,027
2	Control group 2 (healthy cattle)	110±0,88	6,8±0,05	7,0±0,09	6,3±0,04	0,1	0,28±0,03	0,48±0,03	0,68±0,023

According to the analysis of the results of this table 2, the amount of hemoglobin, compared to the physiological norm of 109.4-112.7 grams / liter, decreased by 98 ± 0.58 grams / liter in the I-group experimental group, in which nodular dermatitis was detected, i.e. by 13.05 ± 0.19 grams / liter compared to the norm. In this case, signs such as general weakness and decreased productivity as a result of refusal to feed were detected.

The number of erythrocytes in cattle with the virus was 4.2±0.025 x1012/l compared to the norm of 3.3±0.02 x1012/l, which was due to pyknosis of erythrocytes in the blood of cattle with nodular dermatitis. The number of leukocytes in the blood of cattle with nodular dermatitis was 13.9±0.19 x109/l compared to the physiological norm of 5.65±0.027 x109/l. This result proves that the number of leukocytes in the

blood increased due to the resistance of cattle to the pathogenic microorganism. In 60 minutes of EChT, blood coagulation time was accelerated by 0.92±0.027 mm in normal 6.5 mm per minute in diseased cattle compared to 4.2±0.02 minutes compared to the norm and 2.3 mm per minute compared to cattle in the control group. it was found that the blood clotting time was accelerated due to its increase.

Conclusions

1. As a result of our research, it was observed that hemoglobin decreased by 98 ± 0.58 g/l, erythrocytes by 4.2 ± 0.025x1012/l in case of nodular dermatitis of cattle.
2. In case of nodular dermatitis, leukocytes were found to be increased by 13.9±0.19x109, lymphocytes by 86±0.77%.

List of used literature

1. Aripov A.I., Fesenko L.M., Aripov O.A., Ismailova N.I., Muhamediyarova R.G. Manual on Clinical Laboratory Diagnostics Tashkent -2007.- P. 12-56.
2. Долгов В. В. Иммунохимический анализ в лабораторной медицине /-М .- Тверь: ООО «Издательство» «Триада», 2015. С.-34-38
3. Кутумбетов Л.Б. Стратегия борьбы с нодулярным дерматитом крупного рогатога скота в Республике Казахстан/ Текст: непосредственный.–Алматы-2016. – 51 с.
4. Marupov AI Practical training in general pathological anatomy / Manual Tashkent 2011.–P. 38-39.
5. Максимович, В. В. Нодулярный дерматит крупного рогатого скота / Ветеринарный журнал Беларуси. – 2016. – № 3(5). – С. 3-7
6. Мищенко А.В., Караулов А.К., Мищенко В.А “Нодулярный дерматит крупного рогатого скота”/ –Текст: непосредственный// Ветеринария. – 2016. – № 4.– 3-6 с.
7.Мищенко А.В., Мищенко В.А. “Эпизоотическая ситуация по трансграничным и экономически значимым инфекционным болезням КРС в России в 2013 году” //–Текст: непосредственный Актуальные ветеринарные проблемы в молочном и мясном животноводстве: материалы конференции, г.– Казань, апрель 2014. – С. 132-137.