
All about Pyroplasmosis

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Annotation: The article describes cattle piroplasmosis (Texas fever) - a vector-borne disease of animals caused by parasites of red blood cells - piroplasmosis. Which is a disease caused by blood parasites. The pathogen enters the body through tick bites. Tick carrier. In the absence of treatment, the main outcome is death; piroplasmosis rarely becomes chronic.

Keywords: Piroplasma bigeminum, mite, drug, erythrocyte, anemia.

Introduction: Parasitic diseases in the conditions of modern civilization are a national social problem. Animal owners should know about piroplasmosis. Articles 17, 18 of the Law “On Veterinary Medicine” No. 4576 of January 29, 2020 oblige enterprises, institutions, organizations and citizens who own animals to carry out economic and veterinary measures to ensure the prevention of animal diseases and to maintain livestock premises in good condition.

Decree of the President of the Republic of Uzbekistan dated February 7, 2017 no. PF 4947 “On the strategy of action” for the further development of the Republic of Uzbekistan, dated March 28, 2019 PF 5696 “public administration in veterinary animal husbandry March 28, 2019 “On measures to radically improve the education system” No. 4254 “State Veterinary Service and Livestock Development of the Republic of Uzbekistan” dated January 29, 2020 No. 4576 “Additional measures of state support for the livestock industry and regulations related to this area serve to a certain extent to fulfill the assigned tasks.

Piroplasmosis is an acute disease caused by Piroplasma bigeminum. Cattle are infected mainly on grazing through ticks. Piroplasma vectors are single-host ticks - Boophilus calcaratus, three-host ticks - haemaphysalis punctata and two-host ticks - Rhipicephalus bursa. Boophilus calcaratus, depending on the vector, the disease can be expressed in spring, summer and autumn. Biotopes are found mainly in grassy thickets or, less commonly, in forests on uncultivated pastures with moist soil. It is accompanied by a rise in temperature, anemia, jaundice and hemoglobinuria, disorders of the cardiovascular and nervous systems.

The degree of knowledge of the problem. To date, about 170 types of pyroplasmids, Volodininiyami by some researchers (Pieckarsski, 1954; Levine, 1961a, 1970, 1971) in class, 1978, 1979 Dobrovolsky, 1980) - to the SPOROZOA type class, Pioplazmida, the world UNI Krylov 1974 is devoted to the fauna, geographical and regional distribution of piroplasmid. [1]

Askarkhojaev and others. (2001) reported that ixodid ticks common in the Tashkent region are Boophilus calcaratus, which is especially common and epizootic in the farms of Bekabad,

Chinaz, Upper Chirchik, Middle Chirchik, and Lower Chirchik regions. [2]

A. Gafurov, N. Turaboev, U. Rasulov and other scientists studied and reported in Uzbekistan piroplasmiasis is widespread mainly in the valleys of the Amu Darya, Sirdarya and Zarafshan rivers, with 50% of piroplasmiasis, 28% widespread in the foothill areas. [3]

Single-celled protozoa, like microscopic organisms, were initially studied by scientists in the field of microbiology. Having separated them later (at the end of the 19th and beginning of the 20th centuries) into a separate discipline, special protozoology began to be studied as an independent science. Over the years, several remarkable discoveries have been made that are of great importance for the study of single-celled pathogenic naïve organisms. Thanks to a number of scientific studies in the field of protozoology in veterinary medicine, including the identification of protozoan pathogens causing epidemics and epizootics in many states [1]

Data on theileriosis of cattle in Uzbekistan 1906-1911 - years I.M. Kovalevsky also stated that he examined the blood of the animal under a microscope and found that he found that one had pear-shaped, another round, and another dotted parasites, sick animals secrete spleen, kidneys, and urine without blood from the internal organs of animals. There are characteristic ulcers on the mucous membranes of lilac.

And in 1986, a group of scientists, including I.X. Rasulov, was awarded the State Prize for the development of a vaccine against theileriosis.

And they also studied the effect of about 200 different chemical and biological drugs for the purpose of its treatment and prevention. Piroplasmin-I.L. Matikashvili, A.I. Pines (1937), Bioquinol-I.E. Goncharev (1937), Arikhin-E.A. Muratov (1944), Bigumal-K.A. Arifjanov (1950), Azidin and Bigumal-K.A. Arifjanov, I.Kh. Rasulov and S.K. Babaeva (1963), Delagil, Quinin, Buparvakvon-T.Kh. Rakhimov, A, G, Gafurov (1995-96), etc.

Clinical signs of piroplasmiasis:

- Significant increase in temperature (more than 40.0 and above.)
- Lethargy, refusal to feed
- Urine becomes brown, tea-colored.
- Mucous membranes and skin become jaundiced
- Diarrhea and vomiting may occur.

Pyroplasma infects red blood cells, lives in them, multiplies, destroying cells. The body reacts by producing antibodies to the affected red blood cells, the antibodies destroy the affected blood cells, but since there are receptors for ordinary red blood cells, their own antibodies begin to destroy their own healthy red blood cells - this is called immune-mediated hemolytic anemia. The whole body lacks blood and oxygen. And this leads to death.

What methods are used in clinical practice. Immunological methods - RING, RDSC, RIF, indirect immunofluorescence method, ELISA, as well as PCR diagnostics. The most common method is microscopy of a thick drop of a blood smear, while red blood cells are stained with special Romanovsky-Giemsa dyes: the nucleus is stained red, and the cytoplasm - in blue.

Differential diagnosis: Differentiate the disease from the following diseases:

- Anaplasmosis
- anthrax
- leptospirosis
- theileriosis

➤ hemorrhagic septicemia

Conclusions: Bovine piroplasmosis is an invasive disease that can lead to the death of animals. Unfortunately, owners of private farmsteads do not have the opportunity to change grazing areas or treat pastures with special preparations. Moreover, in recent years, ticks have significantly expanded their habitat area. That is why it is recommended to treat animals with acaricidal agents several times a season.

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