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Enzootic Peculiarities of Hors's Babesiosis In the North-Caucasus Region.

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ABSTRACT

Horse Babesiosis is a widespread vector-borne disease, which carriers of by ixodic tick. Despite the long history of study, these diseases are a large number of questions remain unanswered. Compared with data for 30-ies of XX century, the situation with spread these diseases in the North Caucasus, their clinical manifestation have changed significantly. For this, may contribute a change the number of ticks and horses, and the ratio of susceptible animals and infected carrier.

Keywords: Nuttalliaequi, Theileriaequi, Piroplasmacaballi, Babesiacaballi, Horse Babesiosis, ixodic tick, tick-borndiseases

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INTRODUCTION

Piroplasmoses (Babesiosis) horses are among diseases are widespread. Agents they are Nuttallia (Theileria) equi and Piroplasma (Babesia) caballi. They are have discovered in the Americas, Europe and Asia (Adaszek, L.ссоавт. (2012), Alanazi, A. ссоавт. (2012), Ebani, V. ссоавт. (2015), Sumbria, D. ссоавт. (2016)).It is vector-borne diseases, vector which are ixodic ticks genera Hyalomma, Dermacentor, Rhipicephalus.The state of problem piroplasmoses horses identified the need to explore some of the issues epizootology babesiosis horses. In the course of research that we carried out for 35 years in the farms of the Stavropol Territory and stud farms of the North Caucasus, were identified the provisions, which we would like to consider.

The greatest number of positive serological reactions we received in the study horses of Mineralovodskogo, the Alexander and Kirov regions (26%, 13.7% and 11.3%, respectively) (Lutsuk SN, 2004). Such a high percentage of reactive animals in these areas is not accidental, since they are located in a zone of an unreliable moistening, where natural pastures are favorable conditions habitat for vectors of mites and spring months the number of ticks is expressed in tens of individuals H. plumbeum and D. marginatus one horse.

MATERIALS AND METHODS

When serological study horses northern regions are extremely arid and arid agro-climatic zones of the percentage of positive indicators significantly smaller: Apanasenkovsky - 1.1%, Ipatovsk - 1.4%. This is because they have a small area of natural pastures. In areas with intensive grazing on the irrigated lands near the canals still, exist favorable conditions for the habitat of ticks. Therefore, the number of animals with ticks there is slightly higher than in arid regions, and correspondingly higher amount horse with babesiosis (4,6-20%).

Babezios among horses studs North Caucasus ranges 19,7-64,3%. Earlier, according to VP Govorukhin, with one horse shot to 1.5 thousand. Individuals, now, even in households, disadvantaged for babesiosis, we collect 30-60 ticks. Infestation of ticks Babesia became insignificant (9-30%).

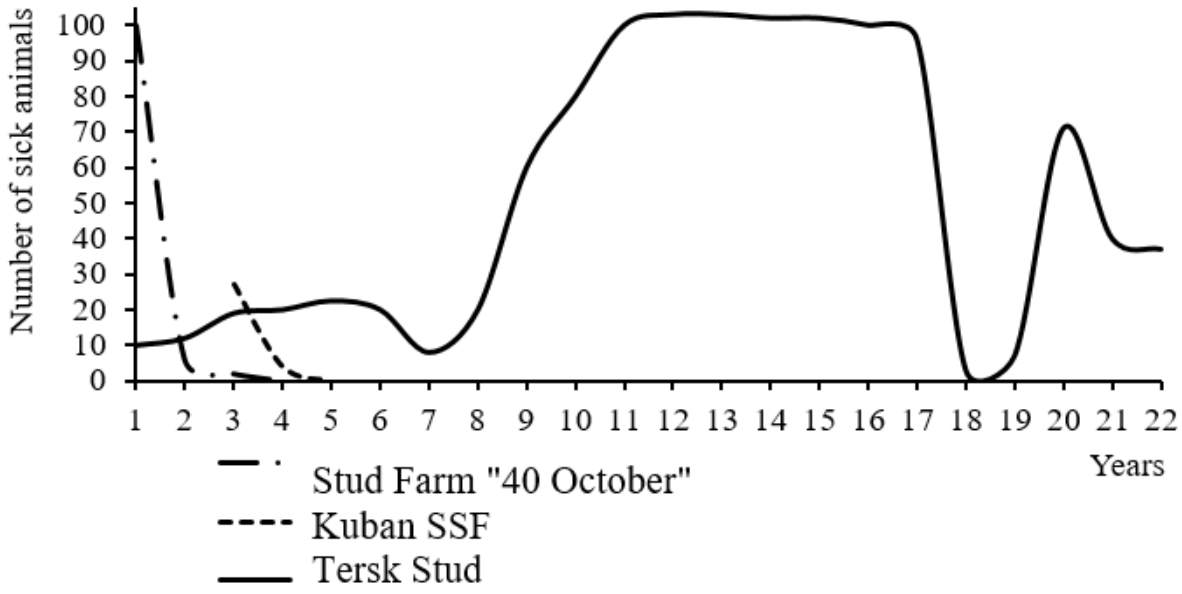

Figure 1: Development of enzootic in disadvantaged areas for Babesiosis

According to our data in the ordinary enterprises of Stavropol region much lower percentage of babesiosis than the studs. On average, over the edge babeziz among working horses is 5.4%, while on the horse farm - 51.7%. This, in our opinion, due to the fact that the working horses of the collective farms and joint-stock companies move from one territory to another, and often graze together with other kinds of animals. Therefore, the possibility of meeting infested ticks with horses is negligible. The studs are irremovable horse pasture, and the possibility of parasitism-infested ticks on healthy horses is wider than in the enterprises

of the Stavropol Territory. However, at the same time, with a total troubles zone (Stavropol Territory) for Babesiosis, identified 4 points, in which the disease manifests itself clinically. However, only one of them (Terek stud) Babesiosis are registered for decades, while in three others (collective farm "40 October", Novoaleksandrovsky stud farm, Kuban SLC) during this long period we have seen, "one-off" enzootic (length 3-5 years) from inception to extinction.

When the data analysis pointed out that in the Terek stud there enzootic area with clinical manifestations of babesiosis for a long time. This, in our view, may be due to several reasons. On the one hand, on its territory is habitat of two species of ticks Babesia carriers (H. plumbeum and D. marginatus). Furthermore, due to environmental conditions are stored 10-12 year cycles mite activity (Fig. 1).

RESULTS AND DISCUSSION

This is due to the early winter thaws that contribute to "wake up" ticks in January and February, when the horses are kept in stables, and mites partsyour other animals. This result in changing from year to year invasions ticks Babesia (from 9 to 30%).

On the other hand, the number babezionos donors (60 to 89%) changes annually. Therese in the Terek stud total population has remained stable, the number of change and save from Babesia horses - i.e. recipients. Thus, all three managers' epizootic chain are changing every year, which leads to the maintenance of a troubled hearth. The three farms where enzootic babesiosis extinguished within 3-5 years, riding a parasite only one species of ticks (D. marginatus), and subsequently it was always the number of carriers and recipients, that is, all three managers epizootic chain stabilized.

Most enterprises of Stavropol Territory and in some stud farms of the North Caucasus horses are carriers of babesiosis, although the disease is not have registered there for 15-25 years. The question arises: why is retained carrier of babesiosis in horses on these farms? Apparently, the role is have played by many factors. So, N. equi persists for a long time in a horse - IV according to Abramova et al. (1955), 18. Foals can be infected in utero - observation A.G. Konstantinov (1936), Donnelly J. et al. (1982), Erbsloh J.K. (1975), S.N. Lutsuk (1979), Chhabra, S. (2012), Sudan, V.A. et al. (2015).It is not excluded and asymptomatic babesiosis in foals, as in a number of Stavropol Territory districts, where not recorded Babesiosis horses, serology blood horse serum give a positive reaction in high dilutions (1: 320, 1: 1280), indicating that the recent contact animals with the agent. The results of our experiments on the infection of horses intact blood from patients nuttalliosis horses and by replanting ticks taken from sick horses, confirm the possibility of flow nuttalliosis process without striking clinical signs. It is possible that the low amount of ticks on horseback and weak invasions ticks parasites, so many parasites the horse enters the body, which can cause a disease accompanied by clinical signs, and it is asymptomatic.

The results of observations and experiments indicate that in the Stavropol Territory and in the stud farms of the North Caucasus still remains favorable situation for the existence nuttallioza horses. However, the degree of infestation of horses Nutt all decreased compared with the pre-war period. This is because the reduced number of vectors mites reduced the number of horses, possibility of meeting infested with mites susceptible horse became insignificant, as the number of non-specific for N. equi owners far exceeds the number of horses.

When power is infested ticks on non-specific host while going inoculation of Babesia, but the development of their body does not occur. These data are consistent with our messages W. Frerichs, A. Johnson, A. Holbrook (1969), which also established conservation N. equi in the body non-specific hosts. Therefore, feeding on non-specific host ticks "lose" contagion, but again it cannot accept, because, according to V.S. Budnik (1941, 1955), I.V. Abramova (1955), permanent transfer of Babesia from generation to generation is not carried out.

Pathogens are stored only in the first generation, and very rarely transmitted males genus Dermacentor with intermittent power. All these reasons lead to the fact, that the majority of ticks are not infected, infestation additional carriers and sick horses is not happening. In our opinion, the increase in the number of non-specific for Babesia horse owners in relation to particular played an important role in reducing the incidence of babesiosis horses. It remains unclear - why not always sterile mites invade even sick animals, as in experiments A.A. Tsaprun (1952), A. Holbrook (1969) and in our research?

CONCLUSION

Epizootic situation babesiosis horses in the North Caucasus has undergone dramatic changes over the past 35 years. If, for example, earlier in the Stavropol Territory and the Northern Caucasus stud farms existed latent zone for babesiosis, at the present time, if you stick to the definition of zones for the V.A. Salyaev (1945), here there is enzootic area, mostly asymptomatic.

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