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MODERN METHODS OF FIGHT AGAINST INFECTIOUS LEUKOSIS IN CATTLE

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Annotation

The article presents the main methods for the diagnosis and control of cattle leukemia virus currently used. The wide spread of the disease is due to a fairly easy transmission of the virus, the lack of means of early diagnosis, vaccination and treatment. Therefore, the problem of the spread of the cattle leukemia virus is very acute and is an urgent issue in animal husbandry, which requires an early resolution.

Keywords: risk of infection; bovine leukemia; sick cows; fight against leukemia in cattle; diagnostic methods; bovine leukemia.

Introduction

When studying the diagnosis of bovine leukemia and the main diagnostic methods currently used, it is known that it is possible to eradicate the leukemia virus in cattle by conducting a set of measures to rehabilitate cattle herds from the leukemia virus. Thus, a positive dynamic of the release of leukemia virus from a herd of sung, cattle from veterinary measures against the infection emerged. Separating cattle (from sick and virus carriers) and keeping RID + animals separate, gradually adding them to a healthy herd resulted in a significant reduction in the number of virus carriers and infected animals.

For the rapid development of animal husbandry, it is necessary to form high-yielding, healthy livestock. One of the diseases that hinders development and causes great harm to cattle is the global (mass) spread of bovine leukemia virus in cattle. Cattle leukemia is a chronic viral disease characterized by damage to the lymphoid and hematopoietic system, and is one of the most dangerous and common diseases in cattle.

Cattle leukemia is registered in almost all countries of the world. With the exception of some countries in Western Europe, the problem of leukemia has been eliminated there only by the complete eradication of infected animals. The disease is most prevalent in the United States, Canada, Japan, and a number of European countries. Among the animals examined, 83.9% of dairy herds in the U.S. were seropositive for leukemia, compared to 89% for Canada, 84% for Argentina, 68% for Japan, and 50% for cattle with leukemia in Brazil and South America. In Central Asia, it is about 20%.

The reason for the prevalence of bovine leukemia is that the virus of the disease is very easily transmitted to other microorganisms and cells, easily infected (infected), the problem of early diagnosis, the lack of vaccine against bovine leukemia and the incurable nature of the disease. However, the available diagnostic methods should ensure rapid detection of infected animals and be simple and effective.

Research conducted. Detection of virus carriers can be performed in a variety of ways, including immunodiffusion reaction (RID), enzyme-linked immunosorbent assay (IFA), polymerase chain reaction (PCR), hematological, clinical, pathoanatomical studies, and bio probe methods. Serological and hematological research methods for bovine leukemia are mainly widely used today. However, due to the absence or deficiency of antibodies in widely used diagnostic methods, it is not possible to identify all infected animals. Serological tests may give inaccurate results in the early stages of animal disease and false positive results may occur. In addition, these methods do not provide complete identification of infected animals because calves younger than six months are not included in the study plan. The polymerase chain reaction (PCR) used in recent years is a very promising molecular genetic methodology for the diagnosis of infection. This method has maximum sensitivity and a high degree of specificity, which allows to detect the virus in the sub material within 1-2 weeks after infection. In addition, this technique can be widely used for young animals older than 15 days.

According to veterinary regulations, the eradication of leukemia involves the removal of sick animals from the "unfit" ("defective") and, in particular, the isolation of infected ones, and then their gradual replacement by healthy ones. Cattle from six months of age and up to two years of age should be subjected to hematological examination for RID reaction. Serological tests for RID are performed at 6, 12, 16, 18 months of age. Adult cattle are examined hematological every 6 months (until the RID is positive).

The diagnosis of leukemia is made on the basis of an immunofusion reaction (RID) blood test. In conducting a positive immunosuppression reaction, the animal is isolated and hematological blood tests are performed to determine the number of leukocytes, less differentiated cells, as well as polymorphic atypical cells in the peripheral blood. If hematological changes are detected in the blood of animals, they are considered to be infected with leukemia.

In the fight against infectious leukemia in large horned animals, it is necessary to take the following measures:

- diagnostic tests, veterinary-prophylactic and anti-epizootic measures in all private farms;
- unconditional compliance with veterinary regulations for the prevention and control of leukemia in cattle;
- The use of methods for the diagnosis of leukemia in cattle and the further improvement of these methods.

According to our analysis, approximately 70% of cattle on the farm were asymptomatic, and 30% had mild lymphocytosis. Subsequent development of the disease, which progresses to lethal lymphosarcoma, occurred in an average of 5% of infected animals. Despite all the risk of the disease and its easy spread among animals, it was found that more than 80% of infected cows were born calves free of the leukemia virus. This is because in only 10 ... 15% of cases does the virus cross the mother's extraplacental barrier and infect the fetus. Therefore, with a multifaceted and skilled approach to the disease problem, it is possible to completely regenerate a dysfunctional herd within a few years by breeding a sufficient number of virus-free heifers without giving up the purchase of expensive pedigree cattle.

Conclusion

Diagnostic research, veterinary-prophylactic and anti-epizootic measures on farms of all forms of livestock ownership should be carried out in accordance with annual plans. In addition, the timely implementation of a set of anti-leukemia measures in livestock farms will create a healthy environment for leukemia, an environment that allows to preserve the offspring for production and re-introduction into the herd without destroying livestock.

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