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INFECTIOUS ENTEROTOXEMIA DISEASE OF SHEEP DIAGNOSTICS AND PREVENTION

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Abstract: The article describes the diagnosis of infectious enterotoxemia of sheep, the epizootic state of the disease, the course and manifestation of clinical symptoms, and the identification of characteristic pathological changes. Isolation of the causative agent and diagnosis based on laboratory studies with bioassay results in susceptible laboratory animals. Information on the prevention of infectious enterotoxemia of sheep is provided.

Keywords: Infectious Enterotoxemia, Sheep, Spore, Anaerobic, Clinical Signs, Pathologoanatomical Changes, Diagnosis, Bacteriological, Causative Agent.

Introduction

In order to develop livestock breeding in our country, ensure food safety, and meet the demand for livestock products (meat, milk, eggs, wool, leather, etc.), our government issued a number of decisions. In particular, the decree of the first President of our Republic dated March 23, 2006 "On measures to encourage the increase of livestock in personal assistants, farmers and farms" PQ-308 and April 21, 2008 "Personal assistant, farmers and Resolutions PQ-842 "On additional measures to increase the breeding of livestock on farms and to increase the production of livestock products", in addition, in the following years, No. 845 of October 18, 2017 " On measures to strengthen the feed base of livestock and fishery industries", establishment of the "Bukhara branch of the Research Institute of Poaching and Desert Ecology" dated March 16, 2018, PQ-4243 dated March 18, 2019 "About measures for the further development and support of the livestock sector" is aimed at the rapid development of a number of livestock farms and to meet the daily growing demand of our people for livestock products.

Infectious anaerobic diseases of domestic animals, especially sheep, are a significant obstacle to the rapid development of livestock in the above-mentioned livestock farms. Some highly dangerous infectious diseases are found among sheep and lambs in agriculture, hindering the development of the industry.

Among sheep diseases, among a number of infectious diseases caused by pathogenic anaerobes, infectious enterotoxemia of sheep occupies a special place. In our country, the fight against infectious enterotoxemia, which is considered one of the most dangerous infectious diseases for sheep in cattle farms, farmers' and citizens' private farms, remains an urgent problem.

Specialists of the field are faced with a number of urgent issues such as personal assistants, farmers and farms, how to increase livestock hooves, properly store and feed them, and introduce new technologies to protect them from various infectious diseases. In solving these issues, first of all, the main task of specialists in the field is to correctly diagnose the existing disease, prevent it, and implement countermeasures.

Infectious enterotoxemia of sheep has gained importance, and the main economic damage caused by the disease is the inability to treat sick sheep, their death in a short time, and the meat of forcibly slaughtered sheep has to be burned because it is not suitable for consumption. includes fuel consumption and costs of preventive measures against this disease. Treatment of infectious enterotoxemia of sheep is ineffective in most cases. Prevention of the disease is an important and main measure in the fight against infectious enterotoxemia of sheep.

In order to create effective measures against infectious enterotoxemia of sheep, first of all, it is required to make a correct diagnosis in time.

Methods

In order to make a diagnosis of infectious enterotoxemia of sheep, first of all, in order to study the existing epizootic situation, business trips were organized to sheep farms in some regions of our Republic. In cooperation with field veterinarians, information about the disease was collected, taking into account the presence of the disease in previous years, the type of infected animals, age, obesity, gender and prevalence. At the same time, the time of appearance of the disease, i.e. seasonality, conditions of keeping and feeding infected animals were also taken into account. Sheep and lambs suspected of having the disease were clinically examined in these regions. Attention was paid to their general condition, appetite, body temperature, breathing, urination, appearance, condition of visible mucous membranes.

When cases of death from the disease were observed, the dead animals were examined pathologically and information was obtained on the external appearance of the body, secretions from natural openings, their consistency, and the condition of visible mucous membranes. In addition, the bodies were dissected in special places, the presence of fluid in the abdominal and chest cavity, and its appearance, pathologoanatomical changes in the internal organs, hemorrhages were noted and at the same time, pathological samples were taken from the parenchymatous organs for laboratory tests. Bacterioscopy and bacteriological tests were carried out to make the final diagnosis of the disease.

In this case, smears were prepared from the surface of parenchymatous organs on degreased glass slides, stained by Gram method, and the absence of causative boron, their location and shape in the smear was determined by microscopy. From the obtained pathological samples, meat peptone liver broth (GPJQ) was planted in Kitt-Tarotsii nutrient media and placed in a thermostat at $37,5^0$C for growth. For seeding, the surface of the material was burned with a heated scalpel, a Pasteur pipette was inserted into the place, sterile fluid was taken, and it was planted in nutrient media on a burning alcohol burner. The absence of the causative agent in the nutrient medium was determined by the turbidity of the nutrient medium, the appearance of gas bubbles, and smears were prepared and stained by the Gram method. In cases where it was not possible to obtain pathological material, more than 100 samples (food, soil, water and manure) were taken for bacteriological examination from pastures and fields where sheep were raised. At the same time, more than 100 blood samples were taken from the sheep, which were kept side by side with the sick and dead sheep, and the pathogen isolation was carried out in the laboratory.

Blood and water samples from sheep housed side by side with the dead sheep were

inoculated directly onto Kitt-Tarotsi media and thermostated at 37,5^{0}C. The feed was first finely ground, then cooled in a warm physiological solution and filtered through 4 layers of gauze. The filtrate was centrifuged at 1000 rpm for 10-15 minutes. The upper part of the liquid was aspirated and inoculated into Kitt-Tarotsi medium. The environment was thermostated to 37,5^{0}C. Soil and manure samples were also dissolved in warm physiological solution, filtered through 4 layers of gauze, and the liquid was centrifuged at 1000 rpm/speed for 10-15 minutes. The top of the liquid was aspirated, inoculated with Kitt-Tarotsi medium and thermostated at 37,5^{0}C. Based on the change in the color of the food medium and the appearance of gas bubbles, the presence of pathogens was confirmed, smears were prepared from them, stained by the Gram method and subjected to microscopy. In this way, it was determined whether these samples contain the pathogen.

Results and Discussion

The diagnosis of infectious enterotoxemia of sheep was made based on clinical signs, epizootological data, pathologoanatomical changes and, of course, the results of laboratory tests. It was found that sheep of all ages are infected with infectious enterotoxemia, mother sheep and 2-4 week old lambs are relatively more infected. In most cases, the disease was observed in fat sheep fed with high-nutrition feed. Sheep are more susceptible to the disease when grazing on pastures with fresh grass, mainly during periods of high rainfall, and sometimes from pelicans or domesticated sheep. it was found that it can be infected even when fed with feed contaminated with the. It became known that the disease occurs more often in the spring season, and less frequently in the summer and autumn months. It was found that factors such as injuries of the intestinal mucosa, intestinal motility disorders lead to a sharp increase in pathogens. Because Cl. perfringens bacilli produce various strong toxins (poison) during reproduction, the toxins first injure the liver and kidney parenchyma, and then injure the central nervous system and poison the entire body of the animal.

During clinical examinations, suspected sick animals were separated and their body temperature, heart rate, pulse and respiratory rate were checked.

During the observations, it was found that the disease has an acute and acute course. When the disease is very acute, it was observed that the sheep do not pay attention to external influences and fall down with shaking movements. In some cases, clonic contractions of the sheep's muscles were observed, and they were found to grind their teeth. It was found that the sick sheep had rapid breathing, salivation from the mouth cavity, a large amount of serous and hemorrhagic liquid from the nasal cavity, and diarrhea. It has been found that sheep die very quickly after these clinical signs appear.

When the disease is acute, it was observed that sheep suddenly refuse feed, body temperature rises above 41^{0}C, and diarrhea appears. It turned out that the excrement was liquid, very foul-smelling, contained mucus and blood, and in some sheep, the urine was dark in color. Sick sheep may move without regard to external influences, bump into an object, suddenly fall and then get up and move forward again and fall again, some sheep are very sick. it was found that it stays motionless in one place for a long time, chews soil, sticks and other things. It was observed that sheep ovulate very quickly, visible mucous membranes are bloodless, and they die within 1-2 days.

When the dead sheep were examined pathologically, it was found that the bodies began to rot quickly, bloody foamy fluid was flowing from the mouth and nose, and there were purple spots on the skin. Intestinal lymph nodes were enlarged, soft and swollen, large abdomen, flat abdomen and net abdomen were full of food, rennet was empty, and the mucous membrane was injured. It was found that the liver is yellowish in color, the gall bladder is filled with bile, and in some cases, one of the two kidneys has a soft slurry consistency. No changes were observed in the spleen. Samples for

laboratory tests were taken from some internal organs of dead sheep (liver, kidney, tubular bone and abdominal fluid).

First, smears were prepared from these samples on glass bottles, and they were stained by the Gram method and viewed under a microscope, and they were planted in special nutrient media to isolate the pure pathogen from them. Microbes were found to be short, non-motile rods with bevelled or semicircular edges, forming not very long chains. It was found that the bacilli are Gram-positive, and they form spores. Research has shown that microbes grow well in liver nutrient mediums, forming a large amount of gas bubbles within 3-4 hours, darkening the color of the medium, and after 24 hours, the microbes settle down in the form of a sediment that is easily decomposed, and the color of the nutrient medium becomes clear. it turned out. Laboratory animals (guinea pigs) were infected with a one-day culture of the isolated pathogen grown in Kitt-Tarotsi medium. When 0.001 ml was injected intramuscularly in a guinea pig and subcutaneously in a white mouse, they died after 20 hours. When necropsied guinea pigs died of intramuscular infection, it was observed that there was a pink, dark mucous liquid at the injection site. Intestinal injuries were clearly visible. Put the isolated bacillus that the causative agent of infectious enterotoxemia is Cl. Perfringens proved.

Prevention. It is necessary to control the veterinary-sanitary condition of cattle, pastures and drinking places. Factors contributing to the development of the disease are eliminated. In early spring, it is necessary not to drive sheep to the pasture or to give dry hay to the meadows, and after the frost or dew rises, the sheep can be released to the pasture. It is necessary to take into account the areas where infectious enterotoxemia of sheep has occurred, and in the spring, 30-45 days before putting them on pasture, sheep should be vaccinated with the Tetratox vaccine.

If this disease is detected among sheep as a result of laboratory tests, the flock or farm is declared unhealthy and restricted under the Veterinary Regulations. At the unhealthy point, all containment measures and measures to prevent the spread of the disease are taken. Entry and exit of new sheep to the farm, shearing, and mixing of sheep with other groups are prohibited.

When a disease is detected in the herd, healthy animals are transferred to pasture, not driven to far places. Sheep in the flock are clinically examined. Diseased and suspected animals are isolated and kept in kennels and treated with special, hyperimmune blood serum, symptomatic and antibiotics. Clinically healthy sheep are left in the pen, vaccinated, given coarse hay and mineral salts. The cage is disinfected weekly with disinfectants (3% chlorinated lime, 3-5% caustic soda, 10% formaldehyde, monochlorinated iodine). Dead bodies are burned with skin and fur. Sick sheep are not slaughtered for meat, wool and milk are not taken. The ban from the farm is removed after 20 days of the end of the outbreak and recovery, after all measures and final disinfection have been carried out.

Conclusion

1. Thus, it has been proved that it is appropriate to make a final diagnosis of infectious enterotoxemia of sheep based on the epizootological data, clinical symptoms and pathologo-anatomical changes of the above-mentioned disease and, of course, the final diagnosis based on the results of laboratory tests.
2. When the animals are released to the summer pastures, it is necessary to repair the sheds, carry out disinfection work at the required level, clean the manure and disinfect it by biothermal method.

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