



## Infectious Enterotoxemia Disease of Sheep Diagnostics

**Klichov Odil Ilkhomovich**

Samarkand State Veterinary Medicine, Animal Husbandry and Biotechnology  
University Epizootology and infectious diseases department, assistant, independent  
researcher

**Khakimov Shorasul**

Research Veterinary Institute, basic doctoral student

**Salimov Ilkhom Khaitovich**

Research Veterinary Institute, immunology and biotechnology, Head of Laboratory,  
Doctor of Veterinary Sciences, Scientific Supervisor

***Abstract:** The article provides data on the fact that, when setting diagnosis of infectious enterotoxemia of sheep, it is necessary to pay attention to the epizootic situation of the disease, the course and manifestation of clinical signs, and also take into account the characteristic pathological changes. But the final diagnosis is based on laboratory studies with the isolation of the causative agent of the disease and bioassay on sensitive laboratory animals.*

***Keywords:** infectious enterotoxemia, sheep, spore, anaerobic, clinical signs, pathological anatomical changes, diagnosis, bacteriological, pathogen, bioassay.*

**Enter.** 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" No. PQ-308 and 2008 Decisions PQ-842 dated April 21, "On additional measures to increase livestock breeding and livestock production in personal assistants, farmers and farms", as well as the following No. 845 dated October 18, 2017 "On measures to strengthen the feed base of livestock and fishery industries", "Bukhara branch of the Scientific-Research Institute of Karak Animal Husbandry and Desert Ecology" dated March 16, 2018, PQ-4243 dated March 18, 2019 "Livestock network "On measures for further development and support" is aimed at the rapid development of a number of animal husbandry and to meet the daily growing demand of our people for livestock products.

However, 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.

Illness and death of sheep creates a serious obstacle to the production of livestock products and the improvement of its quality. At the same time, it reduces livestock incomes and increases the number of sheep. Among sheep diseases, among a number of infectious diseases caused by pathogenic anaerobes, infectious enterotoxemia occupies a special place. The fight against infectious enterotoxemia, which is considered one of the most dangerous infectious diseases for



sheep in the livestock farms of our country, in the private farms of farmers and citizens, remains an urgent problem.

This disease is widespread in all sheep-breeding countries of the world, regardless of geographical region and climate. The presence of this disease among sheep even at night makes the problem serious. Reducing the economic damage caused by infectious enterotoxemia is one of the main problems. Solving these problems plays a key role in the economic development of our country.

Specialists in the field, personal assistants, farmers and farms face a number of pressing issues, such as the introduction of new technologies to increase livestock hooves, properly store and feed them, and protect them from various infectious diseases. In solving these issues, first of all, the correct diagnosis of the existing disease is one of the main tasks of specialists in the field.

Infectious enterotoxemia is gaining importance among infectious diseases. The main economic damage caused by this disease is the inability to treat sick sheep, their death in a short time, the consumption of fuel for burning the meat of forcibly slaughtered sheep because they are not suitable for consumption, and the death of this disease. includes expenses for preventive measures. Treatment of infectious enterotoxemia is ineffective in most cases. Prevention of the disease is an important and main measure in the fight against infectious enterotoxemia.

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

**Research materials and methods.** In order to diagnose the infectious enterotoxemia of sheep, first of all, in order to study the existing epizootic situation, service 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, defecation, 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, pathologicoanatomical changes in the internal organs, blood transfusions were taken into account. and at the same time pathological samples were taken from parenchymatous organs for laboratory tests. Bacterioscopy and bacteriological examinations 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, seedlings were planted in meat peptone liver broth Kitt-Tarotius nutrient media and placed in a thermostat at 37.5°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 bottle.

The absence of the causative agent in the nutrient media 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 grazed on these farms. At the same time, more than 100 blood samples were taken from the sheep that were fed next to the infected sheep, and isolation of the pathogen 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°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°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 supernatant was aspirated, inoculated with Kitt-Tarotsi medium, and thermostated at 37.5°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, and they were stained by the Gram method and subjected to microscopy. In this way, it was determined whether these samples contained the pathogen.

**Research results.** 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 more often 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 respiration rate were checked. During the observations, it was found that the course of the disease is acute and acute.

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 becomes acute, it was observed that sheep suddenly refuse feed, body temperature rises above 41°C, and diarrhea appears. It was found that the excrement was liquid, very foul-smelling, contained mucus and blood, and in some sheep, the urine was dark in color. Diseased sheep may act without attention to external influences, bump into something, suddenly fall, and then get up and move forward and fall again, some sheep are very 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 mucous membrane was injured. It was found that the liver is yellowish in color, the gall bladder is filled with bile, and both kidneys, and in some cases, one of them has a soft gelatinous consistency. No changes were observed in the spleen. Samples were taken for laboratory tests 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 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 nutrient 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 from 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.

**Summary.** 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 signs and pathologo-anatomical changes of the above-mentioned disease and, of course, the final diagnosis based on the results of laboratory tests.

### The List of Literatures

1. Klichov Odil Ilkhomovich., Khakimov Shorasul., Salimov Ilkhom Khaitovich. Infectious Enterotoxemia Disease of Sheep Epizootology. Web of Scholars: Multidimensional Research Journal (MRJ) Volume: 01 Issue: 07 2022 ISSN: (2751-7543) <http://innosci.org>
2. Кличов О.И, Хакимов Ш., Салимов И.Х. Диагностика инфекционной энтеротоксемии овец. Перспективы развития ветеринарной науки и её роль в обеспечении пищевой безопасности.

Издатель: Global Book Publishing Services

Годы охвата с 2022

Направления: Ветеринария

Тип источника: Конференция.

3. Salimov H.S., Kambarov A.A., Salimov I.Kh., "Epizootology and infectious diseases" textbook 2021. Published by Lesson Press.
4. Salimov H.S., Kambarov A.A. Textbook "Epizootology" 2016. F. Nasimov publishing house.
5. Parmonov M.P., Farmonov N.O., Kambarov A.A. Private epizootology textbook 2010. N. Doba publishing house.
6. Ипатенко Н.Г. Инфекцион энтеротоксемия. В кн. Эпизоотология. М.,1974, – С. 352-355.



7. Каган Ф.И., Колесова А.И. Ургуев К.Р. Изучение на овцах эффективности поливалентной концентрированной вакцина против инфекционной энтеротоксемии, злокачественного отека овец и дизентерии ягнят. Тр. ГНКИ ветеринарных препаратов. М., 1968. – С. 200-205.
8. Коляков Я.Е. Возбудители инфекцион энтеротоксемия и инфекцион энтеротоксемияподобных заболеваний овец. В кн. Ветеринарная микробиология. М., 1965, – С. 218-219.
9. Польшковский М.Д. Инфекционная энтеротоксемия овец. В кн. Ветеринарная лабораторная практика. М., 1963, – С. 305–307.---