



SALMONELLOSIS OF YOUNG ANIMALS

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Abstract: The article deals with the diagnosis of salmonellosis in young animals, the causative agent of the disease, antigenic structure and classification. Information on identifying the causative agent by means of laboratory testing and biotesting is provided.

Key words: S. enteritidis, S. typhimurium, S. choleraesuis, S. abortusovis, S. pullorum, "O" - serum, microscopy, bacteriology, serological typing, pathogen, bioassay, biopreparations.

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 Karak Animal Husbandry and Desert Ecology" dated March 16, 2018, PQ-4243, March 18, 2019 March "On further development and support measures of the livestock sector" is aimed at the rapid development of several livestock farms and meeting the demand of our people for livestock products, which is growing day by day.

Relevance of the topic. Salmonellosis is an acute infectious disease that manifests itself in the septic form of all types of young animals. The causative agents belong to the genus *Salmonella*. Calves are infected at the age of 3-4 weeks to 4 months. The causative agent is *S. enteritidis* (Dublin) and *S. typhimurium*. The disease is accompanied by fever and severe diarrhea (adults are considered carriers of salmonella, and the disease passes without clinical symptoms). Pigs are infected up to 4 months old, the causative agent is *S. choleraesuis*, *S. typhimurium*. Sheep are infected at any age, and lambs with salmonellosis are aborted. The causative agent is *S. abortusovis*. Doves are often infected in the mother's womb, and sows, as a result, abort the fetus. The disease in them is caused by *S. abortusequi*. Poultry salmonellosis is invisible with gross morbidity and mortality in the first days and weeks of chicks' life. Chicken fetuses and older birds are also infected. The causative agent is *S. pullorum* (*S. gallinarum*).

Endurance. *Salmonella* 60°C in 1 hour, 100°C he will die at that time. Meat boiled in salted, smoked products (boil for 2-2.5 hours) can be stored for several months. Directly exposed to sunlight, it will die in a few minutes. It is stored in the outdoor environment, in the soil, from 20 to 120 days, and in a dead animal, up to 100 days. Disinfectants kill them. Sensitive to antibiotics, nitrofurans, sulfanilamide drugs. Salmonellosis is acute, semi-acute and chronic. Body temperature rises (40-41°C). Heart activity becomes difficult. Breathing is 60-80 per minute. From the first day, serous conjunctivitis occurs, many tears flow.

Calves' reaction to the external environment decreases, they often lie down with their heads on their sides. He doesn't get up by his own will. Appetite is unstable, sometimes he drinks milk, sometimes he doesn't drink it. After 2-3 days, diarrhea begins. Mucous substance and air bubbles are mixed in the stool, it has a very unpleasant smell, and then there is diarrhea mixed with blood. When the disease is severe, the kidney is injured, and the sick animal urinates often, which causes pain. When it's bad, the temperature rises a lot. The sick calf lies down, does not react to the external environment and dies in 5-10 days. When the disease becomes milder, the diarrhea stops, the temperature drops, and the disease becomes chronic. In this case, the gastrointestinal injury is relieved, and the respiratory organs are injured. A mixture of mucus and pus flows from the nose. At first, the cough is dry and slow, and then it gets worse. The process usually starts with bronchitis and eventually turns into pneumonia.

Antigen structure and classification. Salmonella contains two main antigen complexes: O-somatic and H-antigen.

In addition to dividing salmonella into serological types, phagotypes are sometimes determined using specific salmonellosis bacteriophages. Currently, about 100 bacteriophages are known. Salmonella typing method is used to determine the source of infection for the purpose of epidemiological analysis.

Obtaining raw material. Freshly dead animal carcass or bone marrow, piece of liver with gall bladder, kidney, spleen, heart; from a sick animal - dung; from aborted animals - aborted fetus, placenta, secretions or stomach and parenchymatous organs.

Laboratory testing methods. Microscopy. Stained smears made from materials, smears made from the culture of the isolated pathogen are stained by the Gram method. Microscopic appearance: gram-negative, rod-shaped, 2-4 μm bacteria. Spores and capsules do not form, they are placed one, sometimes two. All are motile (peritrichous) except *S. pullorum*. It is tested by the crushed or hanging drop method.

Bacteriology. GPA, GPB and one of the selective media - Endo, Ploskirev, Levin, bismuth-sulfite agar are planted from the pot materials. Seedlings are grown in a thermostat at 37-38°C for one day. In GPB, the stimulus appears uniformly cloudy. In GPA - smooth, colorless, clear or grayish-blue colonies appear with smooth edges. Salmonella forms colorless or gray-blue colonies in Endo, Levin, and Ploskirev media, and black colonies in bismuth-sulfite agar.

Enzymatic properties. Salmonella breaks down glucose, mannitol, does not break down lactose, sucrose, does not dissolve gelatin, does not produce indole, most of them produce hydrogen sulfide. Positive with methylroth, negative with Foges-Proskauera. For serological typing, the isolated pure culture of salmonella is first tested by droplet RA method with polyvalent salmonellosis agglutinating "O" sera. If the result is positive, it is tested with separate monoreceptor "O" - sera included in polyvalent serum. These same cultures are then tested with monoreceptor "H" serum (phases I and II are numbered and lowercase letters). In addition, the method of immunofluorescence diagnosis can be used.

Biotest is performed in necessary cases. 0.2-0.3 ml of culture suspension (50-100 million microbial cells in 1 ml) is injected under the skin of white mice weighing 15-18 g. With a positive result, mice die in 3-10 days.

Biopreparations. In farms where salmonellosis occurs, calves are vaccinated from 10 days old, piglets from 2-3 weeks old, and lambs from 2 days old. Concentrated, polyvalent, combined vaccines are used for this purpose. The amount of vaccine and the method of vaccination will be indicated on its label. Calves, cows, pigs and sheep are vaccinated twice 1.5-2 months before calving.

Summary

1. Thus, a final diagnosis of salmonellosis in young animals is made based on the results of laboratory tests.

2. When the animals are taken out to the summer pastures, it is necessary to repair the huts, disinfect them, perform their work at the required level, clean the manure and disinfect it by biothermal method.

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