International Journal of
Biological Engineering and Agriculture

ISSN: 2833-5376
Volume 2 | No 12 | Dec -2023

On the Diagnostic of Clostridiosis

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Annotation: in scientific research, the diagnosis of clostridiosis is excellently diagnosed, which causes significant damage to the economy of many inhabitants of our country. Until now, all diagnostic tests used in the detection of clostridium have been described in detail and in an accessible way.

Relevance of the topic - Clostridia is a common infectious disease in the world. Causing clostridia, spore-forming, do not lose their activity for a long time in the external environment. They are almost obligate anaerobes. The disease is common in our country. Since clostridiosis is mostly severe and acute, the sick animal often dies before being diagnosed and treated.

The object of the experiment is most farms and private sector in Payariq district of Samarkand region, farms and private sector sheep in Koshrabot district, Gallaorol, Bakhmal, Zomin districts of Jizzakh region. It was held in private farms and private sector sheep farms.

Diagnosis of clostridiosis is based on comprehensive examinations:

- analysis of epizootic data;
- analysis of clinical and syndromatic changes;
- analysis of pathomorphological changes;
- analysis of results of laboratory (bacteiological) examinations;

The single law of infectious disease is not considered valid if the result of laboratory examination is not attached to the diagnosis of an infectious disease. Therefore, clostridiosis is also diagnosed based on bacteriological examination, i.e.: a smear is prepared and subjected to microscopy, a culture is grown in nutrient media, a pure culture is isolated, the causative agent is morpho-physiological, cultural, tinctorial, identified by biochemical, special anatoxins, experimental module of the disease is created by infecting susceptible laboratory animals. Modern enzymatic tests are performed with IFA (ELAIZA) PCR. In some clostridial diseases, specific clinical signs are evident, for example, crust, bradzot, but the diagnosis is not considered valid if there is no result of laboratory examination. GOST 26503-85 (laboratory diagnosis of clostridiosis). The levels of pathogenicity, virulence, toxigenicity were determined in the biotest, and the type of toxin was identified.

Pathomorphological changes of clastosis diseases in artificially infected guinea pigs

Type of triggers	Pathomorphological changes
C.perfringens type A. poor-grade edema, necrotic enteritis, enterotoxemia-type D	The skin at the injection site separates from the muscle and forms a pouch. Muscles are the color of boiled meat, bruised, dirty, intestines and veins are swollen.
C. perfringens B-type, lamb anaerobic dysentery, C-type, piglet enterotoxemia	The skin at the injection site peels off easily, but not elsewhere. The muscles are dry, red, there are scaly spots, the intestines are hemorrhagic inflamed, there are swollen ulcers.
C. chauvoei is the causative agent of the disease	The skin seems to be warmed by serous-hemorrhagic fluid. The skin in the wound is difficult to separate. The muscles of the chest and abdominal wall are moist, dark reddish in color
C.septicum-bradzot, poor quality tumor.	The skin is easily separated, the muscles, the subcutaneous tissue are red, the gas bubbles are serous, the intestines are full, gas, bubbling liquid, the veins are swollen, transudate has accumulated in the chest cavity and the cardiac shirt.
C.oedematiens-necrotic hepatitis, poor-quality edema.	At the site of the injection, a gelatinous, squishy liquid accumulates, yellowish-red, with the color of muscle discharge.
C.histolyticum-low-grade tumor.	When injected into the thigh muscles, the skin is reddish, tense, sometimes torn, the muscles lose their shape and turn into a mushy mass, a bloody wound, the flesh separates from the bone, gas is not produced. , no rotten smell.
C.sordelli-poor quality tumor.	Gelatinous foamy liquid accumulates, yellowish-red color, muscle discharge color.
C.sporogens	It is pathogenic if it occurs in association.
C.botulinum-botulism	Pathomorphological changes are not characteristic.
S.tetani	Pathomorphological changes are not characteristic.

Timely diagnosis is more complicated, and requires experience, attention, and skills, because all clostridia die in obligate anaerobic, oxygenated conditions, and the possibility of isolating the causative agent disappears. As a rule, newly dead calves, lambs, piglets are quickly put to rest in the laboratory, following the rules of the instructions. From the carcasses of adult animals, pieces of liver, lungs, spleen, lymph glands (liver organs), and heart vessels are ligated, and they are cut together with healthy tissue around the injured tissue. The bones are sent whole.

While the animals are alive, blood, urine, smear, wound punctate, tissue, lymph gland sample, and reproductive organ wound-uterine, vaginal fluids are sent. Samples are taken by veterinarians or state inspectors, packaged and sent with a consignment note. The patnamnua taken from each organ is individually packed in a sterile container and sent. A pathological sample is obtained from untreated animals.

Samples must be delivered to the laboratory intact. The sample is stored at -2-8ºC. If the pathological sample is sent in a test tube, it is sent in Ames fluid at 18º-20º C. If it is not possible to send the sample quickly, it can be frozen once, storage, shipping must be done at minus 18ºC.

Liquid samples (tissue exudate, wound fluid, blood, urine, mucus...) are sent in special syringes; the air in the syringe is expelled and fixed with a sterile stopper. The needle is disinfected with 70ºC alcohol. The inside of the needle is fixed with a rubber plug. 3 ml or more of material can be stored at room temperature for 24 hours. Gastrointestinal fluids are preserved with chloroform, 1 drop is added to 10 cm^3 of litter material, it is sent in 30-40% glycerol in a ratio of 1:1, if it is possible to quickly deliver the litter material, it may not be preserved.

The animal must be brought to the laboratory within 4 hours after death, or within 2 days if preserved. In order to determine the source of the pathogen (soil, fodder, bedding, water, washing water) it is sent for examination.

The instructions for examination, storage and destruction of samples taken for clostridiosis are strictly followed. In the following cases, the diagnosis of clostridiosis is considered correct:

- if clostridia are found in the smear;
- if the cultures are characteristic of clostridia;
- if the biotest results are positive;
- if the IFA-test is positive;
- if the PCR test result is positive;
- If the anatoxins test is positive;
- If the result of the luminescence test is positive;

If 3 of these signs are detected during the examination, the diagnosis is considered correct. Smear microscopy - a print smear is prepared from a pathological sample, stained, dried and subjected to microscopy, if clostridia are found, the result is positive.

An extract is prepared from the sample and cultured in liquid and solid nutrient media. There is a special instruction on the method of planting, creating obligate anaerobic conditions; all work is done in special laboratories. Culture media for clostridia are prepared before the start of the test.

In case of suspicion of scabies and botulism, it is planted in 2 vials, one is heated at 80ºC for 20 minutes or incubated for 1 hour to 5 days. A print smear is prepared from solid samples and a suspension is prepared and inoculated.

A sample in a test tube is removed with a swab in Ames solution and inoculated in ¼ part (25%) of a Tetri dish, and the remaining ¾ part is inoculated in the Drigal method. A moistened buffer is added to the liquid media and re-inoculated to the solid media. The culture is grown in anaerostats at 37ºC for 24-48 hours. To create anaerobic conditions, special gas generator bags are used or air is sucked in with a vacuum pump, special dilutions are used for different types. When tetri cups, gas generator packages with aerostat are used, the lid is directed downwards, and the lid is directed upward in vacuum positivation. The plant is grown in a thermostat at 37º-38º for 24-48 hours, botulism and layering for 5 days.

Isolation of clostridia using a biological method. In parallel with the posev, 2 guinea pigs, susceptible laboratory animals with a patmaterial suspension, are infected with 0.1-1.0 ml of the extract on the abdominal wall. 1 guinea pig is injected with 10%-CaCl2 mixed litter material, some clostridia cannot cause disease, death occurs without inflammation in the body. Observation lasts 3-4 days. The general condition of the animal, fatigue, lethargy, fever, and inflammation of the injection site are considered.

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