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IDENTIFICATION OF WILD ANIMALS INFECTED WITH TRICHINELLOSIS IN KAZAKHSTAN

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Trichinellosis (Latin: trichinellosis) is a helminthiasis caused by parasitic nematodes of the genus *Trichinella* in the human body. It is characterized by acute course, fever, muscle pain, edema, high eosinophilia and various allergic manifestations [1].

Trichinella are among the parasites with a complex biological cycle, which differs from the cycles of other biohelminths by the development of larval and imaginal stages in the body of a single host [2].

Trichinella spp. are ubiquitous nematode parasites with a broad host spectrum. In humans, there is trichinellosis, a foodborne zoonoosis affecting a massive number of people worldwide (Dupouy-Camet, 2000; Pozio, 2007). Modern taxonomic studies indicate that *Trichinella* includes 8 valid species and 4 genotypes (Pozio, Hoberg et al., 2009). The genus has also been proposed to form 2 clades, i.e., encapsulated and non-encapsulated (Pozio and Murrell, 2006). AU species of *Trichinella* can infect humans (Dupouy-Camet, 2000). *Trichinella spiralis* has typically been associated with pork in a domestic (=synanthropic) cycle, while other species are more often linked with wildlife in a sylvatic cycle (Kozar and Kozar, 1965; Chadee and Dick, 1982; Kjos-Hanssen, 1984; Kapel et al., 1998; Webster et al., 1999; Murrell and Pozio, 2000) [3].

In Kazakhstan, an increase in the incidence of parasitic diseases: trichinosis by 6.1 times was noted.

Almaty, Zhambyl, South Kazakhstan, Pavlodar and West Kazakhstan regions, and the Akmola region are hyperendemic regions for helminthiozoonoses for individual infestations [5].

It is established that trichinosis is unevenly distributed. Natural foci of trichinosis involving wild animals in Kazakhstan have a not very wide nosoareal, where 8 species of wild animals, including 7 predatory ones (corsac, fox, dog, bear, lynx, etc.) are infected with a capsule-forming species of *Trichinella* with different intensity of invasion. In this regard, it is necessary to conduct scientific work on the study of the epizootic situation of trichinosis of wild animals.

The aim of the research is an epizootic analysis of trichinosis infection in wild animal species in Kazakhstan.

Very little is known about the comparative sensitivity of various isolate of Trichinella to drugs [6].

The diagnosis of trichinosis in animals is significantly helped by serological examination of blood by the method of *ELISA* for the presence of antibodies to the trichinella antigen. Serological blood tests should be performed in sick animals and in animals with suspected disease 10-14 days after the first test result and at the fourth and sixth weeks after the date of suspected infection. Examination of the muscles of the diaphragm and hind limb for trichinosis by trichinelloscopy and by the method of boiling the muscles in artificial gastric juice.

Monitoring of the incidence of zoonotic helminthiasis among carnivores and other animal species, which are the main sources of invasion for humans and for agricultural animals, was carried out on the basis of the results of *ELISA* studies of carnivores, as well as during expedition trips to the southern regions of the republic.

An immunochromatographic test for trichinosis is also used. *Lateral flow tests (LFT)* is an immunochemical method of analysis based on the principle of thin-layer chromatography. The immunochromatographic method of analysis is based on the separation of particles by the paired bundle method and the reaction between the antigen and the corresponding antibody in biological materials (urine, saliva, whole blood, serum or blood plasma, etc.).

When the test is immersed in the physiological fluid, it begins to migrate along the strip according to the principle of thin-layer chromatography. Together with the liquid, the liquid phase of the test strip containing antibodies with the dye moves. If the test antigen (hormone, cancer or infectious marker) is present in this fluid, then it binds to both the first type of antibody and the second. In this case, the accumulation of antibodies with the dye around the antibodies occurs. Visually, the accumulation of antibodies with the dye is manifested in the form of staining of the test strip. Free antibodies with the dye migrate further along the strip and inevitably interact with secondary antibodies in the control zone, where the second colored (control) strip is observed.

The Lateral flow antibody test shows whether the animal is currently infected (IgM) and whether the animal has previously had the infection and has received immunity to re-infection (IgG).

The *LFI* test, unlike the *ELISA* tests, is usually qualitative, not quantitative.

The results showed, in the natural biogeocenoses of Kazakhstan, a decrease in the infection of wild animals with trichinella has been established. Since one of the main distributors are pigs. and in recent years, pig farming in Kazakhstan is not very popular. The main reservoir of trichinosis in Kazakhstan is the corsac population, whose infection rate was high compared to other species.

All of the above indicates the need for a complex of therapeutic and preventive measures aimed at combating this invasive disease. Therefore, it is necessary to have information about the spread of helminths and the diseases caused by them in specific conditions.

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