FRIEDRICH-LOEFFLER-INSTITUT
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Federal Research Institute for Animal Health

Equine Infectious Anemia

Susceptible species

Equine Infectious Anemia (EIA) is a systemic virus infection which affects horses, ponies, donkeys, mules, and zebras. The disease represents no danger for humans.

Distribution area

This incurable infectious disease of equids mainly occurs in North and South America, Africa, Asia, Australia as well as in Southern and Eastern Europe. In Germany, only sporadic cases are reported.

Causative agent

The EIA virus is a Lentivirus within the family of Retroviruses, which replicate in monocytes and macrophages. The pathogen can be detected in blood and in all organs. In saliva, urine, feces, semen, and milk the virus is detected occasionally.

Transmission

The infection mainly is transmitted by exchange of blood. Main transmitters are large blood-sucking insects such as horseflies and stable flies which can transmit the virus from diseased animals but also from healthy appearing virus carriers. Transmission by insect vectors over distances of more than 100 to 200 m has not been observed. Direct transmission between animals requires very close contact between the animals. Intrauterine infections and infections via breast milk have been described.

Clinical Picture

Disease may be acute or chronic, and can in single cases be fatal. The acute course of disease manifests as fever, apathy, movement disorders, tachycardia, and petechiae on the underside of the tongue, on mucous membranes and lid conjunctiva. The chronic form is characterized by recurrent fever, impaired physical condition, as well as edema of the lower abdomen and extremities. Anemia after infection with EIAV is mainly due to immunopathological lysis of red blood cells. In 30 to 90 percent of cases no symptoms of disease are observed. The animals appear healthy but remain lifelong virus carriers and thus a potential source of infection.

Diagnostics

Specific antibodies against EIAV are detectable two to three weeks (in exceptional cases up to 90 days) after infection. Virus detection is not always successful and is only conclusive if positive, particularly in live animals.

Similar clinical pictures

Symptoms similar to EIA may also occur in Babesiosis, Ehrlichiosis and Leptospirosis. Equine Viral Arteritis (EVA) may also be similar to acute forms of EIA infection. Edema which are typical for chronic courses of disease are also observed in cases of hepatological or nephrological diseases, heart and blood circulation disorders and strong worm infestation.

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Control

The disease is notifiable and is regulated in Germany by the Regulation for Protection against Equine Infectious Anemia (issued 2010, Federal Gazette I p. 1326), which prescribes mandatory culling of positive animals as well as ban and investigation of affected holdings and contact holdings. Therapy and immunoprophylaxis are neither available nor permitted.

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