African Swine Fever

Susceptible species

African Swine Fever (ASF) is a virus infection which affects domestic pigs and wild boar. Furthermore, the virus can be transmitted by soft ticks of the genus *Ornithodoros*, which mainly play a role on the African continent and in the Mediterranean area. ASF is no zoonosis and therefore represents no danger for humans.

Distribution area

In 2007, ASF, that has its roots in a so-called sylvatic cycle in Africa, was introduced into Georgia. Subsequently, the virus spread in the Transcaucasian region and reached the Russian Federation in 2008. From Russia, the virus moved on and entered the European Union in 2014. Currently, Lithuania, Estonia, Latvia, Bulgaria, Moldova, Poland, Romania, Serbia, Slovakia, Ukraine and Hungary are affected in the European region. Outbreaks of ASF in wild boar in the Czech Republic and Belgium were successfully controlled. Since September 2020, Germany has also been affected by ASF in wild boar. The outbreak areas are located along the Polish border in Brandenburg and Saxony. In addition, the disease also reached the world's largest pig producer, China, in August 2018 and is now spreading to various Asian countries. Most recently, Papua New Guinea on the doorstep of Australia, and India were also affected in 2020. Thus, ASF has gained unprecedented spread and importance in the last 13 years, and the current pandemic has also affected more distant industries. In particular, the disease situation in Asia has highlighted vulnerabilities in the veterinary and agricultural sectors, as well as various direct and indirect links between the swine industry and the utilization and exploitation of by-products. Affected is not only the supply of heparin and the availability of gelatine for food and confectionery, but also the utilization of animal fats, hides and bristles.

Causative agent

The causative agent of ASF is a large, complex DNA virus. So far, it is the only representant of the genus *Asfivirus* within the family *Asfarviridae*.

Transmission

Transmission of the virus is possible by direct contact between animals, but also indirectly by vectors. In Africa, the virus is transmitted from warthogs to the domestic pig population by soft ticks (O. *moubata*). Once the virus has been introduced into the domestic pig population, vectors are no longer necessary for transmission. In Central European countries ticks are of no importance for the spread of the disease. Here, direct transmission occurs via contact with infected pigs, via animal products, and also via food waste. Contact with blood is the most efficient transmission route. Without that, contagiosity very often is only moderate, so that no explosive spread of the disease will be observed.

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Clinical picture

The currently circulating virus isolates cause severe, unspecific symptoms after an incubation period of approx. four days (high fever, anorexia, respiratory and gastrointestinal symptoms, discoloration of the skin, in particular when excited), which as a rule lead to the death of the affected animal within little more than one week. Less virulent isolates can cause transient infection with very mild symptoms. Chronic infection has also been described. In the blood of convalescent animals genetic information of the virus may remain detectable for a long period of time (several months).

Diagnostics

Pathogen detection is performed by real-time PCR or virus cultivation on macrophage cultures. For pathogen detection during acute infection EDTA blood samples are most suitable. In particular tonsils, lymph nodes, lung or spleen are suitable organ samples for diagnostics. Antibody detection is performed in serum samples.

For more detailed information please refer to the "Amtliche Methodensammlung" (in German language only).

Similar clinical pictures

Based on the clinical symptoms the disease cannot be differentiated from Classical Swine Fever (CSF) and other severe generalized diseases.

Control

African Swine Fever is a notifiable disease in Germany and control is based on the Regulation on the Protection against Swine Fever and African Swine Fever (Swine Fever Regulation). Early disease detection and rapid laboratory diagnosis are an integral part of the control measures. The possible involvement of ticks leads to shorter time limits and increased restrictions (search for the vector, possibly longer restocking bans). Currently, no vaccine against African Swine Fever is available!

For further information please refer to the FLI website.

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