FRIEDRICH-LOEFFLER-INSTITUT
FLI
Bundesforschungsinstitut für Tiergesundheit
Federal Research Institute for Animal Health

Monkeypox
(Monkeypox virus, MPXV)

Susceptible Species

Monkeypox virus (MPXV) can infect many different host animals. In addition to old-world and new-world monkeys, the disease has been detected in prairie dogs, various rodents and small mammals. The pathogen reservoir has not been clearly identified yet, it is suspected however that it consists of African squirrels and other rodents, so that monkeys are considered to be dead-end hosts.
Monkeypox can be transmitted to humans (zoonosis) and usually causes a smallpox-like disease.

Geographical distribution

Main infection areas are the rainforest regions of West and Central Africa. However, due to illegal import of diseased animals, there is also a risk for third countries.

Causative Agent

MPXV is classified in the genus *Orthopoxvirus*. It is genetically distinct from cowpox viruses (Cowpox virus, CPXV), which are also human pathogenic.

Transmission

The pathogen is transmitted through contact with infected animals, bites, blood, or secretions. Zoonotic infections of humans are caused by direct contact with infected animals or consumption of infected wild animals (bushmeat).

Symptoms

In non-human primates, monkeypox usually manifests as a self-limiting skin rash. After an incubation period of 17 to 21 days, the animals first develop fever. Particularly on the face, extremities and tail, small papules form as the disease progresses, which develop into pustules and eventually scab over and fall off. In severe courses, cough, nasal discharge, dyspnea, loss of appetite, edema of the face, and swollen lymph nodes have been observed. A typical monkeypox lesion has a red, necrotic, craterlike hollow in the center and is surrounded by epidermal hyperplasia.
Most naturally infected animals recover, fatal courses can occur especially in young animals. Subclinical courses are also possible. A similar course of the disease has been observed in infected prairie dogs in the USA.

Diagnostics

Both direct and indirect detection methods are suitable for the detection of MPXV. Suitable sample material can be obtained from vesicular or pustular fluid, blood or scabs. The method of choice for rapid direct detection is real-time PCR.

For further information please go to Amtliche Methodensammlung (Collection of official diagnostic methods, in German language only)

Monkeypox

Similar clinical pictures

Clinically, lesions of a monkeypox virus infection cannot be distinguished from cowpox-associated lesions.

Infections of pet animals

Reliable data on the susceptibility of domestic animals such as dogs or cats are still lacking. Transmission to pets might be possible, in particular in the case of contact with strongly virus-containing scab material.

Control

In Germany, monkeypox in animals is a notifiable disease. Currently, no licensed vaccines for animals are available in Germany.

Further information:
https://www.fli.de/en/institutes/institute-of-diagnostic-virology-ivd/reference-laboratories/nrl-for-monkeypox/
National Reference Laboratory for Monkeypox

Friedrich-Loeffler-Institut, Federal Research Institute for Animal Health
Südufer 10, D-17493 Greifswald – Insel Riems, FLI Website