

COWPOX

V23.04

OIE BALAI EU AHL

VIRUS

*Orthopoxvirus, Poxviridae*ZOOONOSIS

SUSCEPTIBLE ANIMAL GROUPS	TRANSMISSION	CLINICAL SIGNS	SEVERITY	TREATMENT	PREVENTION AND CONTROL
Rodents (endemic hosts) Domestic cats Wild animals: elephants, wild felids, rhinos, tapirs, okapis, antelopes, macaques, new world monkeys, others	Direct contact with infected animals (skin wounds or bite wounds)	Local or generalized vesicular lesions of skin and mucous membranes Systemic disease (mainly pneumonia) possible	Disease severity dependent of virus strain, species infected and individual health status Fatalities rare in humans	Generally self-limiting Supportive care needed in severe cases Antibiotics for secondary infections	Pest control of wild rodents Attenuated modified vaccinia virus Ankara strain protective in elephants and rhinos Separation and isolation of ill and suspected cases

FACT SHEET COMPILED BY Parc Animalier d'Auvergne, France	LAST UPDATE December 2017
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DISEASE AGENT Cowpox virus, genus <i>Orthopoxvirus</i> , subfamily <i>Chordopoxvirinae</i> , family <i>Poxviridae</i> . Also referred to as elephantpox, catpox or ratpox.	
SUSCEPTIBLE ANIMAL GROUPS Wide host range. Circulates mainly in wild rodents, all other animals are accidental hosts. Wild rodent reservoirs (endemic hosts): voles, wood mice, gerbils, ground squirrels, rats (to a lesser extent). Domestic animals: mainly cats, dogs also. Infection in cattle rather incidental. Wild animals: mostly seen in elephants and wild felids, but also in llamas, okapis, antelopes, tapirs, wild boars, red pandas, mongooses, martens, rhinos, anteaters, beavers, macaques and new world monkeys.	
ZOOONOTIC POTENTIAL Human infection is rare (incidental host), and happens mainly via direct contact with infected cats (or wild rodents). Potentially dangerous for immunocompromised patients. <i>Orthopoxvirus</i> vaccination gives cross-protection against cowpox infection.	
DISTRIBUTION North West Europe and neighboring regions of Western Asia.	
TRANSMISSION Direct contact with infected wild rodents, via skin wounds or fresh bite wounds. In zoos, rats bred for food are a possible	

<p>source of infection.</p> <p>Human infections are mainly related to contact with diseased domestic cats.</p>
<p>INCUBATION PERIOD</p> <p>Between 5 and 14 days, commonly 9-10.</p>
<p>CLINICAL SIGNS</p> <p>Disease severity dependent of virus strain, species infected and individual health status.</p> <p>Reservoir hosts: little disease signs.</p> <p>Cats: widespread skin lesions, small erythematous nodules growing in size and becoming scabbed ulcers. Generally self-limiting disease but systemic clinical signs and pneumonia are possible.</p> <p>Wild animals: mild localized or multiple vesicular ulcerative lesions of the skin and mucous membranes. Systemic disease is possible, mainly pneumonia and generalized rash.</p> <p>Humans: usually localized lesions mainly on fingers, hands or face. Generally self-limiting but severe generalized infections can occur in immunocompromised patients. Fatalities rare in humans.</p>
<p>PATHOLOGY AND POST MORTEM FINDINGS</p> <p>Gross lesions usually progress through the classical poxvirus cascade of macula, papule, vesicle, and pustule phase before becoming scabbed. Histology shows ballooning degeneration of keratinocytes with occasional eosinophilic homogenous intracytoplasmic inclusion bodies.</p>
<p>DIAGNOSIS</p> <p>Histopathologic examination (viral inclusion bodies), electron microscopy (poxvirus particles), PCR (viral DNA).</p> <p>Serology: immunofluorescence assay, plaque reduction test, ELISA.</p>
<p>SAMPLES REQUIRED FOR LABORATORY ANALYSIS</p> <p>Formalin fixed biopsy samples of cutaneous lesions, swabs from skin or mucous membrane lesions, serum.</p>
<p>TREATMENT</p> <p>Generally self-limiting, but in severe cases supportive care and antibiotic treatment for secondary infections are indicated. The use of glucocorticoids is counter-indicated.</p>
<p>PREVENTION</p> <p>Pest control of wild rodent population, monitor health conditions of rats destined for food.</p> <p>Elephants and rhinos can be vaccinated with the attenuated modified vaccinia virus Ankara strain. Very little is known about successful vaccinations in other exotic animals.</p>
<p>CONTROL</p> <p>Separation and isolation of clinically ill animals.</p> <p>Suggested disinfectants for housing facilities: sensitive to phenol (2%), ether (20%), chloroform, formalin (1%), Virkon® 2%, iodine compounds (1:33 dilution), sodium hypochlorite (2-3%), sodium dodecyl sulfate and quaternary ammonium compounds (0.5%).</p>
<p>LEGISLATIVE REQUIREMENTS</p> <p>Not notifiable under OIE 2019, BALAI (Council Directive 92/65/ECC) or AHL (Regulation EU 2016/429). However, health authorities should be informed.</p>
<p>CONTACTS FOR FURTHER INFORMATION</p> <p>1. The Pirbright Institute (Dr. Pip Beard), OIE reference lab for Chordopoxviruses</p>

RELEVANT DIAGNOSTIC LABORATORIES

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