### MELIOIDOSIS

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<td>Macaques, Pan troglodytes, Gorilla gorilla, Presbytis melalophos, Callitrichidae Gorilla gorilla</td>
<td>Soil saprophytes, Infection through skin lesions, Aerogenously, Perorally, Venereally (noso-Comial routes also suspected)</td>
<td>Bronchopneumonia, Subcutaneous abscesses, Pyoderma, Lymphadenitis</td>
<td>Yes</td>
<td>Carbapenemes</td>
<td>In houses in zoos Incineration of infected soil and of infected animals.</td>
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Susceptible animal groups

Macaca spp., Pan troglodytes, Gorilla gorilla, Presbytis melalophos, Callitrichidae.

Causative organism

*Burkholderia pseudomallei.* (Pseudomonadaceae). Soil isolates produce less exoenzymes, and are less cytolethal than strains isolated from patients. Soil isolates additionally differ in their biochemical characteristics from clinical isolates., the nonvirulent species is now named *B.thailandensis*, it can be differentiated from *B.pseudomallei* by simultaneous use of 2 monoclonal anti-lipopolysaccharide based latex agglutination test systems.

Zoonotic potential

Yes, fatal in man.

Distribution

Originally in South-East Asia and Australia, cases also in France ,Great Britain, USA, and Guadeloupe.

Transmission

*B. pseudomallei* is a soil saprophyte in endemic areas, but can survive in soil also in temperate climates. The main entrance route is through skin lesions, but aerogenous, peroral, nosocomial and venereal pathways have also been postulated. Infections occur particularly at the end of the dry season.

Incubation period

Up to several years.

Clinical symptoms

Bronchopneumonia, subcutaneous abscesses, pyoderma, lymphadenitis. n gorillas: coma, fever.

Post mortem findings

Yellowish coloration of the subcutaneous tissues, white, milky subcutaneous abscesses. Histopathology: Acute necrotizing – granulomatous inflammations containing giant macrophages with phagocytosed leukocytes and intracellular bacteria.

Diagnosis

Selective enrichment media: Threonine – basal salt solution, Ashdown’s agar; Latex agglutination test, PCR, lymphocyte proliferation tests, RAPD (Random amplification of polymorphic DNA), MEE-, tests (multilocus enzyme electrophoresis). Serology: ELISA- tests.

Material required for laboratory analysis

Altered tissues, serum, cell cultures, urine.

Relevant diagnostic laboratories

Konsiliarlaboratorium für Pseudomonas und Mukoviszidose-Bakteriologie
Treatment
Carbapenems: Biapenem, Imipenem. *B. pseudomallei* is resistant to aminoglycosides and macrolides, but susceptible to Chloramphenicol, and Doxycycline

Prevention and control in zoos
Necropsy and examination of all died animals, especially equides. Incineration of suspected carcasses and of all contaminated soil.

Suggested disinfectant for housing facilities
Drying of soil to less than 10 % water content (>70 days), UV-light at 465y (> 7.75 min)

Notification

Guarantees required under EU Legislation

Guarantees required by EAZA Zoos

Measures required under the Animal Disease Surveillance Plan

Measures required for introducing animals from non-approved sources

Measures to be taken in case of disease outbreak or positive laboratory findings

Conditions for restoring disease-free status after an outbreak

Experts who may be consulted

References