## MICROSPORIDIOSIS

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<th>ANIMAL GROUP AFFECTED</th>
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<td>Cebidae, Gorilla beringei</td>
<td>Primarily aerogenous, occasionally congenital</td>
<td>Depending on microsporidia involved encephalitis, abortion or diarrhea</td>
<td>In Callitrichids</td>
<td>Albendazole, Fumagillin</td>
<td>In houses in zoos</td>
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**Fact sheet compiled by**
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**Susceptible animal groups**
In *E. cuniculi*: primarily rabbits and birds, occasionally *Saimiri sciureus, Saguinus imperator, Leontopithecus rosalia, Callimico goeldii*.
In *E. intestinalis*: donkeys, dogs, pigs, cows. Goats, also in wild-living *Gorilla beringei beringei*.
In *E. bieneusi*: occasionally *M. Mulatta*, particularly after SIV-infection.

**Causative organism**
*Encephalitozoon cuniculi, Enterocytozoon (Septata) intestinalis, Enterocytozoon bieneusi* in nonhuman primates and man, other microsporidia in other animals.
All microsporidia are obligate intracellular parasites, the entire phylum microspora lacks mitochondria.

**Zoonotic potential**
Yes, particularly in immunocompromised (AIDS, diabetes mellitus) patients.

**Distribution**
World-wide

**Transmission**
Primarily perorally through contaminated food or water, congenital infections

**Incubation period**

**Clinical symptoms**
In *E. cuniculi*: encephalitis, abortion, in *E. intestinalis* and *E. bieneusi*: diarrhea

**Post mortem findings**
*E. cuniculi*: granulomatous encephalitis, nonsuppurative meningitis, granulomatous inflammations of other organs including granulomatous placentitis.
*E. intestinalis*: cytoplasmic clusters of microsporidia in duodenal, ileal, colonic and rectal enterocytes and goblet cells without accompanying inflammation.
*E. bieneusi*: microsporidial clusters in intestinal and biliary tract cells

**Diagnosis**
PCR, Western blot, immunohistochemistry (indirect immunofluorescence using monoclonal antibodies!)
Electron microscopy, ELISA, in situ hybridization, chromotrope 2 R staining, calcofluor staining

**Material required for laboratory analysis**
For cultivation: fresh brain/kidney tissues,
For PCR: fresh or paraffin-embedded tissues,
For serology: serum

**Relevant diagnostic laboratories**

**Treatment**
In man: albendazole 200 – 400 mg twice daily perorally,
Fumagillin: 0.03 % solution topically (eye).
In nonhuman primates fenbendazole possibly unsuccessful (Wenker et al.2002)

**Prevention and control in zoos**
Strict hygiene
Suggested disinfectant for housing facilities

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


