

CAPILLARIASIS

| ANIMAL GROUP AFFECTED | TRANSMISSION | CLINICAL SIGNS | FATAL DISEASE ? | TREATMENT | PREVENTION & CONTROL |
|-----------------------------|---|--|-----------------|-----------------------------|--|
| All nonhuman primate genera | Perorally – ingestion of infected liver tissues or possibly infected ground beetles | Usually none, in severe infections /massive death of helminths occasionally sudden death | Rarely | Albendazole or Fenbendazole | <i>In houses</i> Rodent control <i>in zoos</i> Rodent control |

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| Fact sheet compiled by Manfred Brack, formerly German Primate Center, Göttingen/Germany | Last update 22.11.2008 |
| Susceptible animal groups All nonhuman primates can be infected, primary hosts : rodents (<i>Peromyscus maniculatus</i> , <i>Clethrionomys gapperi</i> , <i>Rattus norvegicus</i> , <i>R.rattus</i> , <i>Mus musculus</i>). | |
| Causative organism <i>Capillaria hepatica</i> (syn.: <i>Calodium hepatica</i>) in <i>Pan paniscus</i> also <i>C.brochieri</i> . | |
| Zoonotic potential Yes, > 30 human cases reported. | |
| Distribution Worldwide. | |
| Transmission Peroral uptake of 2-8 cell stage eggs trapped in liver tissues of rodents, transmission via ground beetles as vectors are possible. | |
| Incubation period 52 hs. | |
| Clinical symptoms In nonhuman primates usually none, occasionally sudden death. Capillariasis recorded in died mountain gorillas in Rwanda. In man abdominal pain and weight loss reported. | |
| Post mortem findings Focal hepatocyte necrosis, cellular infiltration and fibrosis of migration tunnels in the liver tissues. In fatal cases hepatitis. Rarely intestinal capillariasis reported in nonhuman primates. | |
| Diagnosis Histological demonstration of adult helminths or of biopercolate eggs in the liver (percutaneous needle biopsy) or occasionally intestinal tissues. Serology: indirect immunofluorescence assays. | |
| Material required for laboratory analysis Liver/intestines | |
| Relevant diagnostic laboratories Local veterinary laboratories | |
| Treatment Fenbendazole (35 mg/kg for 3 days : cave: massive destruction of helminths in the liver may induce hepatitis. In intestinal capillariasis Albendazole 10 – 20 mg/kg/day recommended. | |
| Prevention and control in zoos Rodent control | |
| Suggested disinfectant for housing facilities | |
| Notification | |
| Guarantees required under EU Legislation | |
| Guarantees required by EAZA Zoos | |

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| 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 <ol style="list-style-type: none">1. Brack, M. 1987. Agents Transmissible from Simians to Man. Springer, Berlin.2. Brack, M., H. Gass, and E. Stirnberg. 1994. Intestinal capillariasis in New World monkeys. <i>J. Med. Primatol.</i> 23: 37 – 41.3. Childs, J. E., G. E. Glass, and G. W. Korch, jr. 1988. The comparative epizootiology of <i>Capillaria hepatica</i> (Nematoda) in urban rodents from different habitats of Baltimore, Maryland. <i>Can. J. Zool.</i> 66: 2769 - 2775 .4. Ferna'ndez – Bellon, H. M., A. J. Ramis, J. Torres, M. Gracenea, and J. Fernandez – Moran. 2001. Fatal acute hepatic capillariasis in a white fronted marmoset (<i>Callithrix geoffroyi</i>). <i>Verh. ber. Erkr. Zootiere</i> 40 : 77 – 79.5. Graczyk, T. K., L. J. Lowenstine, and M, R. Cranfield (1999). <i>Capillaria hepatica</i> (Nematoda) infections in human – habituated mountain gorillas (<i>Gorilla gorilla beringei</i>) of the Parc National de Volcans, Rwanda. <i>J. Parasitol.</i> 85 : 1168 – 1170.6. Jensen, J. M., and S. L. Huntress. 1982. <i>Capillaria hepatica</i> infestation in a gelada baboon (<i>Theropithecus gelada</i>) troop. 1982. <i>Am. Assoc. Zoo Vet. Annu. Proc.</i> 1982: 48 – 49.7. Juncker-Voss, M., H. Prosl, H. Lussy, U. Enzenberger, H. Auer, and N. Nowotny. 2000. Serological detection of <i>Capillaria hepatica</i> by indirect immunofluorescence assay. <i>J. Clin. Microbiol.</i> 38: 431 – 433.8. Justine, J. L. 1988. <i>Capillaria brochieri</i> n.sp. (Nematoda : Capillariinae) parasite intestinal du chimpanzé <i>Pan paniscus</i> au Zaire. <i>Ann. Parasitol. Hum. Comp.</i> 63: 420 – 438.9. Klenzak, J., A. Mattia, A. Valenti, and J. Goldberg. 2005. Hepatic capillariasis in Maine presenting as a hepatic mass. <i>Am. J. Trop. Med. Hyg.</i> 72 : 651 – 653.10. Kokai, G. K., S. Misic, V. N. Perisic, and S. Grujovska. 1990. <i>Capillaria hepatica</i> infestation in a 2 – year old girl. <i>Histopathology</i> 17: 275 – 277.11. Meagher, S. 1998. Physiological responses of deer mice (<i>Peromyscus maniculatus</i>) to infection with <i>Capillaria hepatica</i> (Nematoda). <i>J. Parasitol.</i> 84: 1112 – 1118.12. Mueller, J. G., T. Kirchner, J. Pannenbecker, und H. K. Müller-Hermelink. 1990. Hepatische Capillariasis. Morphologie und Differentialdiagnose. <i>Pathologie</i> 11: 300 – 303.13. Sawamura, R., M. I. M. Fernandes, L. C. Peres, L. C. Galvao, H. A. Goldani, S. M. Jorge, G. de Melo Rocha, and N. M. de Souza . 1999. Hepatic capillariasis in children : report of 3 cases in Brazil. <i>Am. J. Trop. Med. Hyg.</i> 61: 642 – 647. |