

HERPESVIRUS HOMINIS (Types 1 and 2)

ANIMAL GROUP AFFECTED	TRANSMISSION	CLINICAL SIGNS	FATAL DISEASE ?	TREATMENT	PREVENTION & CONTROL
Pongidae, Hylobatidae, Cebidae, Callitrichidae, Aotidae, Lemuridae, Scandentia.	Aerogenously, contact.	Mostly silent, occasional -ly recurrent labial herpes, coryza, conjunctivitis, salivation, ataxia, dermatitis, death	Rarely in Pongidae, more often in sakis, Callitrichidae and tree shrews.	Nucleoside analogues, Trisodium phosphonofornate	<i>in houses</i> Avoidance of contact to people suffering from clinically apparent recurrent herpes; <i>in zoos</i> the same

Fact sheet compiled by Manfred Brack, formerly German Primate Center, Göttingen/Germany.	Last update 22.11.2008
Susceptible animal groups Pongidae, Hylobatidae, Cebidae, Callitrichidae, Aotidae, Lemuridae, Scandentia.	
Causative organism <i>Herpesvirus hominis</i> types 1 and 2.. Indigenous <i>H.hominis</i> type 2-like alphaherpesvirus in wild living chimpanzees and gorillas	
Zoonotic potential So far, no retransmission to man has been reported.	
Distribution World – wide.	
Transmission Between human beings primarily aerogenously, transmission to nonhuman primates by direct contact to persons clinically affected by recurrent herpes simplex.	
Incubation period In children (gingivostomatitis) : 3 – 5 days.	
Clinical symptoms In man usually silent infections, occasionally recurrent herpes simplex, in perinatal infections fatal disease, in CNS-infections herpes-encephalitis; In nonhuman primates species - specific differences were observed: in pongids and <i>Ateles</i> sp. the course is similar to human infections with occasional oral / pharyngeal ulcers, in <i>Hylobates</i> sp. CNS-symptoms (Ataxia, myoclonus, encephalitis) predominated, in <i>Aotus trivirgatus</i> a fatal disease characterized by coryza, ulcerative dermatitis, conjunctivitis, and incoordination resulted, which in <i>Pithecia pithecia</i> was accompanied by oral and perioral ulcerations. Infections of Callitrichids resulted in rapidly fatal perioral vesicles and ulcers, whereas in <i>Lemur catta</i> lethargy, salivation, incoordination, debilitation and abortus were observed. Finally in tree shrews the virus caused conjunctivitis, keratitis and death.	
Post mortem findings In pongids and <i>Ateles</i> sp. vesicular lesions at arms, chest, legs, soles, and face, in neonatal infections focal myocardiac-, pulmonary-, hepatic-, splenic-, adrenal- or CNS-necroses with Cowdry type A intranuclear inclusion bodies. In <i>Hylobates</i> spp. excoriations, vesicles or ulcers at labial commissures, nonsuppurative encephalitis. In <i>Aotus trivirgatus</i> focal necroses in all organs including the brain, in <i>Pithecia pithecia</i> and callitrichids oral and labial ulcerations and inclusion body encephalitis.	
Diagnosis Virology: immunoperoxidase, in situ hybridization, Serology: neutralization, immunofluorescence.	
Material required for laboratory analysis Materials from vesicles or other lesions for virological tests, serum or whole blood for serology.	

Relevant diagnostic laboratories 1. Local medical laboratories. 2. Konsiliarlaboratorium für HSV,VZV Klinikum der Friedrich Schiller Universität Jena Institut für Antivirale Chemotherapie Winzerlaer Straße 10 07745 JENA Tel.: 03641 6573 00 Fax: “ “ 01 e-mail: peter.wutzler@med.uni-jena.de
Treatment Nucleoside analogues or Trisodium phosphonoformate (see <i>H.simiae</i>), Acyclovir reported as non- effective in <i>Pithecia pithecia</i> .
Prevention and control in zoos Restriction of people suffering from recurrent herpes simplex from contact with nonhuman primates
Suggested disinfectant for housing facilities Lipid solvents, soap, UV-light, heat.
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 1. Prof. Dr. P. Wutzler, Konsiliarlaboratorium Jena, 2. Frau Prof. Dr. I. Färber, “ “ , 3. Dr- A. Sauerbrei, “ “ ,
References 1. Ball, M. J., E. Lewis, and A. T. Haase. 1987. Detection of herpesvirus genome in Alzheimer's disease by in situ hybridization: a preliminary study. <i>J. Neural Transm.</i> 24 (Suppl.) 219 – 225. 2. Bedrossian, U. K. , E. A. Lozano de Arce, and C. W. M. Bedrossian. 1984. Immunoperoxidase method to detect herpes simplex virus in cytologic specimen. <i>Lab. Med.</i> 15: 673 – 676. 3. Brack, M. 1987. <i>Agents Transmissible from Simians to Man.</i> Springer, Berlin. 4. Flügger, M. and J. Pfeiffer. 1992. Eine kommentierte Biographie zu den Erkrankungen der Lemuren. <i>In</i> : Ceska, V., H. – U. Hoffmann und K. H. Winkelstraeter (eds.). 1992 <i>Lemuren im Zoo.</i> Parey, Berlin. Pp. 273 – 303 5. Hatt, J. – M., P. Grest, H. Posthaus, and W. Bossart. 2004. Serologic Survey in a colony of captive common marmosets (<i>Callithrix jacchus</i>) after infection with Herpes simplex type 1 – like virus. <i>J. Zoo Wildl. Med.</i> 35 : 387 – 390. 6. Juan – Salles, C., J. A. Ramos – Vara, N. Prats, J. Sole – Nicolas, J. Segales, and A. J. Marco. 1997. Spontaneous herpes simplex virus infection in common marmosets (<i>Callithrix jacchus</i>). <i>J. Vet. Diagn. Invest.</i> 9: 341 – 345. 7. Luebcke, E., E. Dubovi, D. Black, K. Ohsawa, and R. Eberle. 2006. Isolation and characterization of a chimpanzee alpha herpesvirus. <i>J. Gen. Virol.</i> 87 : 11 – 19. 8. Mätz-Rensing, K., K. D. Jentsch, S. Rensing, S. Langenhuyzen, E. Verschoor, H. Niphuis, and F. – J. Kaup . 2003 . Fatal <i>herpes simplex</i> infection in a group of common marmosets (<i>Callithrix jacchus</i>). <i>Vet. Pathol.</i> 40 : 405 – 411.



9. Mootnick, A. R., M. Reingold, J. J. Holshuh, and R. R. Mirkovic. 1998. Isolation of a herpes simplex virus type 1 – like agent from the brain of a mountain agile gibbon (*Hylobates agilis agilis*) with encephalitis. *J. Zoo Wildl. Med.* 29: 61 – 64.
10. Osborn, K. G. 1990. Recent cases and outbreaks of viral disease in captive nonhuman primates. *Am. Assoc. Zoo Vet. Annu. Conf. Proc.* 1990: 176 – 177.
11. Raick, A. N. and M. T. Mello. 1987. Lesions of herpesvirus infection in tongue of *Callithrix jacchus*. *Int. J. Primatol.* 8: 556.
12. Schrenzel, A. M., K. G. Osborn, A. Shima, R. B. Klieforth, and G. A. Maalouf. 2003. Naturally occurring fatal herpes simplex virus 1 infection in a family of white – faced Saki monkeys (*Pithecia pithecia pithecia*). *J. Med. Primatol.* 32 : 7 – 14.