

GROUP C – STREPTOCOCCOSIS

ANIMAL GROUP AFFECTED	TRANSMISSION	CLINICAL SIGNS	FATAL DISEASE ?	TREATMENT	PREVENTION & CONTROL
<i>Mandrillus sphinx</i> , <i>Macaca silenus</i> , <i>Saguinus labiatus</i> , <i>Callimico goeldii</i> , <i>Tupaia glis</i>	Probably aerogenously	Peracute sudden death	Yes	Antibiotics (Penicillin, Amoxicillin, Oxacillin)	<i>In houses</i> No horsemeat feeding, no contact to persons with sore throat <i>in zoos</i> no horsemeat feeding, no contact to persons with sore throat

Fact sheet compiled by Manfred Brack, formerly German Primate Center, Göttingen / Germany.	Last update 22.11.2008
Susceptible animal groups <i>Mandrillus sphinx</i> , <i>Macaca silenus</i> , <i>M.mulatta</i> , <i>Saguinus labiatus</i> , <i>Callimico goeldii</i> , <i>Tupaia glis</i> .	
Causative organism <i>Streptococcus equi</i> , subsp. <i>zooepidemicus</i> . <i>S. equi</i> subsp. <i>zooepidemicus</i> is differentiated from <i>S. equi</i> subsp. <i>equi</i> by its positive sorbit – metabolism.	
Zoonotic potential Yes.	
Distribution In Equidae World-wide	
Transmission Probably aerogenously. <i>Str. zooepidemicus</i> causes pharyngitis and fatal septicaemia and endocarditis in man, the streptococci are carried in the pharynx of man and rhesus monkeys.	
Incubation period 2 – 3 days.	
Clinical symptoms Peracute, purulent conjunctivitis, rhinitis, pharyngitis, respiratory distress, sudden death.	
Post mortem findings Haemorrhages on abdominal and throacic serosal surfaces, pleuritis, epi- and pericarditis, splenomegaly.	
Diagnosis Cultivation, Lancefield-group serology.	
Material required for laboratory analysis Specimens from internal organs.	
Relevant diagnostic laboratories <ol style="list-style-type: none"> 1. Inst. f. Mikrobiologie und Immunologie Friedrich-Wilhelm-Universität Bonn und Nationales Referenzzentrum für Streptokokken Bonn, Germany 2. Nationales Referenzzentrum für Streptokokken am Institut für Medizinische Mikrobiologie der Rheinisch-Westfälischen Technischen Hochschule Aachen, Pauwelstr. 30 D 52057 AACHEN Tel.: 0241 80 89510 	



“ “ 89511 “ “ 88441 Fax: “ “ 82483 e-mail: webmaster@streptococcus.de reinert@rwth-aachen.de
3. Local veterinary and medical laboratories.
Treatment Antibiotics (Penicillin, Amoxicillin, Oxacillin).
Prevention and control in zoos No feeding of raw horsemeat in mixed collections, no admission of persons suffering from pharyngitis .
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 1. Prof. Dr. R. Lütticken, NRZ, Aachen, 2. PD R. R. Reinert, “ “ 3. Frau Dr. C. Brandt, “ “
References 1. Barnham, M., G. Cole, A. Efstratiou, J. R. Tagg, and S. A. Skjold. 1987. Characterization of <i>Streptococcus zooepidemicus</i> (Lancefield group C). <i>Epidemiol. Infect.</i> 98 : 171 – 182. 2. Brack, M., H. Günther, H. Gilhaus, W. Salzert, and J. Meuthen. 1997. An outbreak of <i>Streptococcus equi</i> subsp. <i>zooepidemicus</i> infection of probable human origin in wanderoos (<i>Macaca silenus</i>) – Case report. <i>Zent. bl. Bakteriolog.</i> 286 : 441 – 446. 3. Edwards, A. T., M. Roulson, and M. J. Ironside. 1988. A milk – borne outbreak of serious infection due to <i>Streptococcus zooepidemicus</i> (Lancefield group C). <i>Epidemiol. Infect.</i> 101 : 43 – 51. 4. Efstratiou, A. 1989. Outbreaks of human infections caused by pyogenic streptococci of Lancefield groups C and G. <i>J. Med. Microbiol.</i> 29 : 207 – 219. 5. Flügger, M., und M. Brack. 1998. Todesfälle durch <i>Streptococcus equi</i> subspecies <i>zooepidemicus</i> und Klebsiellen in einer Mandrillgruppe. (<i>Papio sphinx</i>). <i>Verh. ber. Arb. tag. Zootierärzte Dtsch. sprach. Raum.</i> 17 : 73 – 76. 6. Mätz – Rensing, K., A. Schrod, T. Becker, J. Winkelmann, I. Seegmüller, S. Köndgen, F. Leendertz, and F. J. Kaup (2008). Outbreak of <i>Streptococcus equi sp. zooepidemicus</i> infection in a group of rhesus monkeys (<i>Macaca mullatta</i>). <i>Eur. Assoc. Zoo Wildl. Vet. Sci. Meet. Proc.</i> 7: 55 – 57. 7. Meier, F. A., R. M. Centor, L. Graham, and H. P. Dalton . 1990. Clinical and microbiological evidence for endemic pharyngitis among adults due to group C streptococci. <i>Arch. Intern. Med.</i> 150 : 825 – 829. 8. Rudensky, B., and M. Isacson. 1989. β – hemolytic group C streptococci and pharyngitis. <i>Rev. Infect. Dis.</i> 11 : 668. 9. Schiller, C. A., M. J. Wolff, L. Munson, and R. J. Montali. 1989. <i>Streptococcus zooepidemicus</i> infections of possible horsemeat source in red – bellied tamarins and goeldi’s monkeys. <i>J. Zoo Wildl. Med.</i> 20 : 322 – 327. 10. Shaw, M., R. J. Montali, and M. Bush. 1984. <i>Streptococcus zooepidemicus</i> in small mammals fed uncooked horsemeat. <i>J. Zoo Anim. Med.</i> 15 : 161 – 164. 11. Vandamme, P., B. Pot, E. Falsen, K. Kersters, and L. A. Devriese. 1996. Taxonomic study of Lancefield streptococcal groups C, G, and L (<i>Streptococcus dysgalactiae</i>) and proposal of <i>S. dysgalactiae</i> subsp. <i>equisimilis</i> subsp. nov. <i>Int. J. Syst. Bacteriol.</i> 46 : 774 – 781.