



Encephalomyocarditis (EMC)- Virus Disease

ANIMAL GROUP AFFECTED	TRANSMISSION	CLINICAL SIGNS	FATAL DISEASE ?	TREATMENT	PREVENTION & CONTROL
Simiiae Prosimiiae	Perorally (food,water), diaplacental	Sudden death, tachycardia	Yes – in nonhuman primates		<i>In houses</i> Rodent control <i>in zoos</i> Rodent control, prevention of contacts with infected persons or animals

Fact sheet compiled by Manfred Brack, formerly German Primate Center, Göttingen/Germany.	Last update 22.11.2008
Susceptible animal groups Primarily Suidae, but also Camelidae, rodents, elephants, Hippopotamidae, kangaroos, nonhuman primates.	
Causative organism Encephalomyocarditis-Virus (Picornaviridae, Cardioviruses).	
Zoonotic potential Yes.	
Distribution Worldwide, particularly in Southern USA.	
Transmission Fecal excretion, peroral infection through food or water. In baboons transplacental infection possible.	
Incubation period In experimental infections of rodents 4 – 41 days.	
Clinical symptoms Usually sudden death from congestive cardiac failure. Otherwise sluggishness, anorexia, tachycardia, paralysis, convulsions.	
Post mortem findings Cardiomegaly, Myocarditis, myocardial necrosis, ascites, pleural and pericardial effusions, pulmonary oedema.	
Diagnosis Tissue culture, immunomagnetic separation and one step RT-PCR, Serology: HI-tests.	
Material required for laboratory analysis Altered tissues, faecal samples.	
Relevant diagnostic laboratories The Simian Diagnostic Laboratory at Virus Reference Laboratories, Inc. 7540 Louis Pasteur Road SAN ANTONIO /Tx. 78229 Tel.: (210) 614 – 7350 Fax (210) 614 - 7355	
Treatment	
Prevention and control in zoos Rodent Control. Vaccination (B-propranolol – killed EMC-virus, genetically engineered Mengo-Virus.	
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 <ol style="list-style-type: none">1. Backues, K. A., R. F. Aguilar, M. Hill, A. C. Palmenberg, and K. F. Soike. 1997. A new modified liove virus vaccine for encephalomyocarditis (EMC) virus protection , preliminary trials at the Audubon Zoo. Am. Assoc. Zoo Vet. Annu. Conf. Proc. 1997 : 166 – 167.2. Backues, K. A., M. Hill, A. C. Palmenberg, C. Miller, K. F. Soike, abd R. Aguilar. 1999. Genetically engineered mengo virus vaccination of multiple captive wildlife species. J. Wildl. Dis. 35 : 384 – 387.3. Blanchard, J. L., K. Soike, and G. B. Baskin. 1987. Encephalomyocarditis virus infection in African green and squirrel monkeys : Comparison of pathologic effects. Lab. Anim. Sci. 37 : 635 – 639.4. Brack, M. 1987. Agents Transmissible from Simians to Man. Springer, Berlin.5. Carey, K. D., G. B. Hubbard, K. Soike, J. Levin, and T. M. Butler. 1988. An encephalomyocarditis virus epizootic in a baboon colony. Lab. Anim. Sci. 88 : 493.6. Citino,, S. B., B. L. Homer, J. M. Gaskin, and D. J. Wickham. 1988. Fatal encephalomyocarditis virus infection in a Sumatran orangutan (<i>Pongo pygmaeus abeli</i>). J. Zoo Anim. Med. 19 : 214 – 218.7. Emerson, C. C., and J. L. Wagner. 1996. Antibody responses to two encephalomyocarditis virus vaccines in rhesus macaques (<i>Macaca mulatta</i>). J. Med. Primatol. 25 : 42 – 45.8. Gutter, A.,E. 1993. Encephalomyocarditis in zoo animals. In Fowler, M. E. Zoo and Wild Animal Medicine . Current Therapy 3. W. B. Saunders, Philadelphia. Pp 50 – 51.8 Hubbard, G. B., K. F. Soike, T. M. Butler, K. D. Carey, H. Davis, W. I. Butcher, and C. J. Gauntt.. 1992. An encephalomyocarditis virus epizootic in a baboon colony. Lab. Anim. Sci. 42 : 233 – 239.9 Kassimi, L. B., M. Gonzague, A. Boutrouille, and C. Cruciere. 2002. Detection of encephalomyocarditis virus in clinical samples by immunomagnetic separation and one – step RT-PCR. J. Virol. Methods 101 : 197 – 206.10 Osorio, J. E., G. B. Hubbard, K. F. Soike, M. Girard, S. van der Werf, J. – C. Moulin, and A. C. Palmenberg. 1996. Protection of non – murine mammals against encephalomyocarditis virus using a genetically engineered Mengo virus. Vaccine 14 : 155 – 161.11 Wells, S. K., A. E. Gutter, K. F. Soike, and G. B. Baskin. 1989. Encephalomyocarditis virus : Epizootic in a zoological collection. J. Zoo Wildl. Med. 20. 291 – 296.