

HEPATITIS A

Animal Group(s) Affected	Transmission	Clinical Signs	Severity	Treatment	Prevention and Control	Zoonotic
Humans, non-human primates	Fecal-oral route	Occasionally mild illness (anorexia, lethargy, vomiting, fever, and diarrhea); liver enzyme elevation; jaundice common in humans	Rarely fatal; most recover acute infections without permanent liver damage	Rarely indicated, supportive care	Vaccination or immune globulin potentially	Yes

Fact Sheet compiled by: Zoltan S. Gyimesi

Sheet completed on: 4 February 2011; updated 21 August 2013

Fact Sheet Reviewed by: Ed Ramsay, Linda Lowenstine

Susceptible animal groups: Humans, non-human primates (chimpanzees, Old World monkeys, New World monkeys).

Causative organism: Hepatitis A virus (HAV); *Hepatovirus* genus, *Picornaviridae* family. Both human and simian strains.

Zoonotic potential: Yes

Distribution: Worldwide

Incubation period: 15-45 days, fecal-oral transmission. Following exposure and infection, virus can be shed in feces prior to seroconversion or clinical signs.

Clinical signs: Virus rarely causes clinical disease in non-human primates. Infected individuals can be viremic for up to 30 days prior to the onset of clinical signs. Seroconversion may be associated with transient liver enzyme elevation (AST, ALT, tBIL). Nonspecific illness (anorexia, lethargy, fever) or gastrointestinal disease is possible. Duration of viremia and fecal shedding can be 2 months or more.

Post mortem, gross, or histologic findings: Hepatocellular degeneration and necrosis, Kupffer cell proliferation, and lymphocytic periportal hepatitis can be observed. Histologic changes that may be present are similar to liver lesions caused by infection with this virus in humans.

Diagnosis: Blood testing for antibody/antigen. Liver biopsy. Fecal PCR.

Material required for laboratory analysis: Whole blood, serum/plasma. Feces or liver potentially.

Relevant diagnostic laboratories:

VRL Laboratories
 7540 Louis Pasteur Road, Suite 200
 San Antonio, Texas 78229
 877-615-7275
 fax 210-615-7771
 Anthony.Cooke@vrl.net

Zoologix Inc.
 9811 Owensmouth Avenue, Suite 4
 Chatsworth, California 91311

HEPATITIS A

<p>818-717-8880 818-717-8881 fax info@zoologix.com</p>
<p>Treatment: This is not typically indicated. Supportive care can be provided.</p>
<p>Prevention and control: In humans, immune globulin (containing sufficient anti-HAV concentrations to be protective) or inactivated vaccine (typically for people at higher risk) can be administered. Vaccines can be given post-exposure during outbreaks per WHO.</p>
<p>Suggested disinfectant for housing facilities: Sodium hypochlorite or 2% glutaraldehyde.</p>
<p>Notification: Public health officials may need to be notified if zoonotic (primate to human) transmission occurs.</p>
<p>Measures required under the Animal Disease Surveillance Plan: None currently</p>
<p>Measures required for introducing animals to infected animal: HAV can remain infective in stored feces for at least 30 days. If concerned about introduction of animals to a known infected animal, animals that are seronegative (i.e. not immune), the seronegative animal could be immunized with the human HAV vaccine prior to introduction. Similarly, a seropositive animal with negative stool samples (by PCR) is probably recovered and no longer infectious to others.</p>
<p>Conditions for restoring disease-free status after an outbreak: Clinically significant outbreaks are uncommon. Disease-free status should be obtainable via appropriate environmental disinfection, and making sure primates are either seronegative or seropositive but no longer shedding HAV.</p>
<p>Experts who may be consulted: Linda J. Lowenstine, DVM, PhD, DACVP Professor of Veterinary Pathology Vet Med: Pathology, Microbiology, and Immunology VM3A 4206 University of California, Davis One Shields Avenue Davis, CA 95616 Phone: 530-752-1182 Fax: 530-752-3349 ljlownstine@ucdavis.edu</p>
<p>References:</p> <ol style="list-style-type: none"> 1. http://www.cdc.gov/hepatitis/hav/ Accessed 12 August 2013. 2. http://www.who.int/wer/2012/wer8728_29.pdf Accessed 12 August 2013. 3. Bower, W.A., O.V. Nainan, X. Han, and H. Margolis. 2000. Duration of viremia in hepatitis A virus infection. <i>J. Infect. Dis.</i> 182:12-17. 4. Brack, M. 2004. Virus hepatitis A. <i>In: Heijink, I., and M.P. Ryser-Degiorgis (eds.). EAZWV Transmissible Diseases Handbook, 2nd ed.</i> Van Setten Kwadraat, Houten, Netherlands. Pp. 427-429. 5. Dienstag, J.L., and K.J. Isselbacher. 2001. Acute viral hepatitis. <i>In: Braunwald E., A.S. Fauci, D.L. Kasper, S.L. Hauser, D.L. Longo, and J.L. Jameson (eds.). Harrison's Principles of Internal Medicine, 15th ed.</i> McGraw-Hill, New York, New York. Pp. 1721-1737. 6. Lerche, N.W. 1993. Emerging viral diseases of nonhuman primates. <i>In: Fowler M.E. (ed.). Zoo and Wild Animal Medicine, Current Therapy 3,</i> W. B. Saunders Company, Philadelphia, Pennsylvania. Pp. 340-344. 7. Mbithi, J.N., V.S. Springthorpe, and S.A. Sattar. 1990. Chemical disinfection of hepatitis A virus on environmental surfaces. <i>Appl. Environ. Microbiol.</i> 56(11):3601-3604. 8. McCaustland, K.A., W.W. Bond, D.W. Bradley, J.W. Ebert, and J.E. Maynard. 1982. Survival of

HEPATITIS A

- hepatitis A virus in feces after drying and storage for 1 month. *J. Clin. Microbiol.* 16(5):957-958.
9. Ramsay, E., and R.J. Montali. 1993. Viral hepatitis in New World primates. *In: Fowler M.E. (ed.). Zoo and Wild Animal Medicine, Current Therapy 3*, W. B. Saunders Company, Philadelphia, Pennsylvania. Pp. 355-358.
 10. Robertson, B.H. 2001. Viral hepatitis and primates: historical and molecular analysis of human and nonhuman primate hepatitis A, B, and the GB-related viruses. *J. Viral Hepat.* 8(4):233-242.