

4 Chapter 4 Travel-Related Infectious Diseases

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Henipaviruses

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INFECTIOUS AGENT

Enveloped, single-stranded RNA viruses in the genus *Henipavirus*, family Paramyxovirus. Of the 5 identified *Henipavirus* spp., Hendra virus and Nipah virus are highly virulent emerging pathogens that cause outbreaks in humans and are associated with high case-fatality ratios. Three additional species—Cedar virus, Ghanaian bat virus, and Mojiang virus—are not known to cause human disease.

TRANSMISSION

Pteropid fruit bats (flying foxes) are the reservoir hosts. Hendra virus is transmitted through direct contact with infected horses or body fluids or tissues of infected horses; horses are infected through exposure to bat urine. Hendra virus is not transmitted person to person or directly from bats to humans. Nipah virus is transmitted through contact with infected pigs or bats (a common exposure is consumption of date palm sap contaminated with bat excretions). Person-to-person transmission of Nipah virus has been reported through close contact (including respiratory droplets) with infected people; transmission is facilitated by cultural and health care practices in which friends and family members care for ill patients.

EPIDEMIOLOGY

Henipavirus outbreaks in humans have occurred in northern Australia and Southeast Asia; Nipah virus outbreaks in humans were reported in 1999 in Malaysia and Singapore and are reported almost annually in India and Bangladesh. However, pteropid bats can be found throughout the tropics and subtropics, and henipaviruses have been isolated from these bats in Central and South America, Asia, Oceania, and East Africa. Hendra virus has been reported nearly annually since 1994 in the eastern states of Australia.

CLINICAL PRESENTATION

Incubation period is approximately 5–16 days (and rarely up to 2 months). Both Hendra and Nipah virus infections can cause a severe influenzalike illness with fever, myalgia, headache, and dizziness. This may progress to severe encephalitis with confusion, abnormal reflexes, seizures, and coma; respiratory symptoms may also be present. Relapsing or late-onset encephalitis can occur months or years after acute illness. The case-fatality ratio of Hendra virus is 57% (among 7 known human cases, 4 were fatal). Case-fatality ratios for Nipah virus infection are 40%–70% but have been 100% in some human outbreaks.

DIAGNOSIS

Laboratory diagnosis is made by using a combination of tests, including ELISA of serum or cerebrospinal fluid (CSF); RT-PCR of serum, CSF, or throat swabs; and virus isolation from CSF or throat swabs.

TREATMENT

There is no specific antiviral treatment for henipavirus infections; therapy consists of supportive care and management of complications. Ribavirin has shown in vitro effectiveness but its clinical usefulness is unknown. A monoclonal serotherapy has been proposed for Hendra in Australia.

PREVENTION

Travelers should avoid contact with sick horses, pigs, bats, or their excretions. Travelers should not consume raw date palm sap or products made from raw sap. A Hendra virus vaccine for horses has been licensed in Australia and has potential future benefit to prevent henipavirus infection in humans.

CDC website: www.cdc.gov/vhf/hendra/index.html and www.cdc.gov/vhf/nipah/index.html

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