

PUBLIC HEALTH

Lymphocytic choriomeningitis virus

Background and epidemiology: In May 2005, the US Centers for Disease Control and Prevention (CDC) reported cases of lymphocytic choriomeningitis virus (LCMV) infection in 4 people who had received transplants of the liver, lungs or a kidney from a single common donor. Within 3 weeks after their surgery the organ recipients had fever, localized rash, diarrhea, hyponatremia, thrombocytopenia, hypoxia and renal failure along with dysfunction of the transplanted organ; 3 of the 4 patients died. Histopathologic findings varied, but at autopsy all 3 decedents had hepatocellular necrosis. The source of the disease was an infected hamster in the donor's home.

LCMV infection is either asymptomatic or causes a mild self-limited illness

in healthy people who are not immunocompromised. LCMV can cause aseptic meningitis, but this is rarely fatal. In the earlier trimesters of pregnancy, however, LCMV infection can cause fetal defects.¹

Serum markers for LCMV infection indicate that about 5% of the population has been infected. Normally, the disease cannot be transmitted from human to human (except vertically during pregnancy). LCMV is an arenavirus primarily affecting rodents; it is endemic worldwide among house mice. Pets can be infected after contact with wild rodents at the breeding facility, in pet stores or in the home. Although other animals could be infected by LCMV, transmission to humans has been documented only from infected hamsters, guinea pigs and mice.

Clinical management: Human infection in immunocompetent people is asymptomatic or is associated with mild, self-limited illness characterized by fever, malaise, loss of appetite, head and muscle aches, nausea and vomiting. Aseptic meningitis can occur but is rarely fatal. Infection during the first or second trimester can cause more severe illness and developmental defects in the fetus.



Photos.com

Guinea pigs (along with hamsters and pet mice) are sources of lymphocytic choriomeningitis virus. The primary reservoir of LCMV worldwide is wild mice.

Prevention: Environmental modifications should be undertaken if wild rodents are found to have entered homes or workplaces. General recommendations¹ from the CDC about pet rodents are provided in Box 1 and Box 2. Useful information on diseases in pets and how to prevent infection is also available through the CDC Web site (at www.cdc.gov/healthypets).

John Hoey
CMAJ

REFERENCE

1. Interim guidance for minimizing risk for human lymphocytic choriomeningitis virus infection associated with rodents. *MMWR Morb Mortal Wkly Rep* 2005;54(30):747-9.

DOI:10.1503/cmaj.051184

Box 1: Care of pet rodents

- Never kiss a pet rodent or hold it close to your face
- Keep cages clean and free of soiled bedding
- Clean cages outdoors or in an otherwise well-ventilated area
- Wash hands with soap and water after handling pet rodents, or cleaning their cages or other areas where the pets have been
- Supervise young children closely when they are handling pet rodents or cleaning cages, and assist them in washing their hands afterward
- Never allow a pet rodent to come into contact with wild rodents, their droppings or their nests

Box 2: Tips for pregnant women

- While pregnant, avoid contact with all rodents
- Keep pet rodents in an area of the home separate from where you tend to reside
- Have other family members clean the cages
- Stay only briefly in any room where a rodent resides