Medical News

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Hantavirus Outbreak Suggests Person-to-Person Transmission

In 1995, a novel Hantavirus (Andes virus) was identified in samples from patients in southern Argentina. The patients had a Hantavirus pulmonary syndrome (HPS), a disease first described 2 years earlier in the United States, in association with the Sin Nombre virus (a New World Hantavirus).

Old World Hantavirus (Puumala, Seoul, Hantaan, and Dobrava) has been a recognized cause of hemorrhagic fever with renal syndrome for at least 40 years. It is responsible for more than 100,000 cases each year in Eurasia.

Hantaviruses are rodent-borne, viral, zoonotic agents believed to be transmitted to humans primarily by inhalation of aerosols of infected rodent excretions. Person-to-person transmission of Hantaviruses has not been reported despite extensive epidemiological studies.

Between September 22 and December 5, 1996, 18 cases of HPS occurred in residents of, or visitors to, the towns of El Bolson, Bariloche, and Esquel in southern Argentina. Two additional persons who had contact with El Bolson patients, but had not visited the area, contacted HPS during this period.

Five of the patients were physicians; three were directly responsible for the clinical care of an HPS patient. Epidemiological links between all but four of the cases and evidence of low rodent population density in the area strongly suggest person-to-person transmission of HPS during this outbreak.

The investigators concluded that the transmission of Hantavirus from patient C to her doctor (patient D) provided the best epidemiological evidence to support the hypothesis of person-to-person transmission of Hantavirus.

The investigators reported that 21 and 20 days, respectively, after the 41-year-old index case in El Bolson became symptomatic, his 70-year-old mother and one of his doctors (patient A) contracted HPS. The doctor's spouse, also a doctor (patient C), became ill with HPS 27 days after her husband's first symptoms (19 days after his death). She traveled to Buenos Aires for medical care. While in a hospital in Buenos Aires, an admitting doctor (patient D) spent 1 hour taking a clinical history and examining her. The doctor (patient D) applied pressure to a venipuncture site on the patient's arm with multiple layers of gauze; no obvious blood contact occurred. The only other contact between the doctor (patient D) and patient C occurred 2 days later, when the doctor briefly visited the hospital's intensive-care unit to attend to another patient. Twenty-four days after attending to patient C, the doctor became ill with HPS. The doctor, patient D, had not traveled outside Buenos Aires and reported no contact with rodents during the 2 months preceding the illness.

The unique pattern of person-to-person transmission in this outbreak has not been a feature of Hantavirus epidemiology. In a study performed in New Mexico in 1993, no disease or Hantavirus antibodies were found in serum specimens taken from 396 healthcare workers, including 266 who had been exposed to patients with HPS or their body fluids 2 to 4 weeks earlier.

The high case fatality rate (50%) precluded a detailed description of the exact nature of contact between cases. Consequently, the likely mode of transmission, whether through direct contact, droplets, infectious aerosols, or contaminated fomites, is not known. Genetic sequencing of viruses from patients and rodents is being determined to define more clearly the patterns of transmission.

In the absence of any clear-cut evidence for nosocomial transmission of Sin Nombre or a related virus in the United States, the authors note that it is premature to suggest changing the existing guidelines for care of HPS patients.

FROM: Wells RM, Estani SS, Yadon ZE, et al. An unusual Hantavirus outbreak in southern Argentina: person-to-person transmission? *Emerg Infect Dis* 1997;3(2):171-174.

Continued Transmission of *Legionella* Despite Control Efforts

The CDC recently reported the results of an investigation of sustained transmission of nosocomial Legionnaires' disease (LD) in two hospitals located in Arizona and Ohio, implicating the hot-water distribution system in both hospitals. In 1996, hospital A in Arizona had eight cases of nosocomial LD among cardiac and bone marrow transplant patients. After an intensified investigation, 25 cases (16 definite and 9 possible) of nosocomial LD were linked to hospitalization during 1987 to 1996. No single risk factor was identified; however, information on exposure to showers, other aerosol sources, or ingested water for some patients was unavailable. During August 1996, cultures of Lp-6, Lp-11, *Legionella anisa,* and a *Legionella*-like organism designated as D-1620 were obtained from the hot-water distribution system. Lp-1, Lp-4, Lp-6, and Lp-11 were grown from swabs and water samples from the water softeners. Water from the wellhead of a private well that supplied some of the hospital water contained Lp-1. Lp-6 was grown from samples obtained from taps and showers in patients' rooms and a carpet cleaning unit used on the transplant ward. Air samples within patient showers identified Lp-6 in respirable (1-5 μm) droplets.

Thermal decontamination of the hot-water distribution system was conducted in hospital A in July 1996, but legionellae later were isolated from potable water, and three cases occurred after thermal decontamination. In response, the hot-water distribution system was hyperchlorinated, and the water temperature was maintained at 120°F; however, following these measures, legionellae Lp-6 again was grown from potable water. As a result, additional

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