Medical News

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Droplet Spread of Ebola Virus

Secondary transmission of Ebola virus infection in humans is known to be caused by direct contact with infected patients or body fluids. Dr. N. Jaax and colleagues from the United States Army Medical Research Institute of Infectious Disease in Frederick, Maryland, recently reported the transmission of Ebola virus (Zaire strain) to two of three control rhesus monkeys (Macaca mulatta) that did not have direct contact with experimentally inoculated monkeys held in the same room. The two control monkeys died from Ebola virus infections at 10 and 11 days after the last experimentally inoculated monkey had died.

The monkeys were housed in cages in the biocontainment laboratory, and strict procedures were followed to prevent unintended transmission of the virus from the experimentally inoculated animals to the control animals, eg, all medical procedures and cage cleaning procedures were performed first on the control animals.

Virologic and histopathologic examinations of lung tissue found virus titers and lesion patterns consistent with those previously reported in monkeys exposed to aerosolized Ebola virus. The researchers believe that the most likely route of infection of the control monkeys was aerosol, oral, or conjunctival exposure to virus-laden droplets secreted or excreted from the experimentally inoculated monkeys. They advise at-risk personnel to use precautions to protect against ocular, oral, and nasopharyngeal exposure to the virus. The CDC incorporated recommendations for eye and mucous membrane protection in its updated guidelines for the management of viral hemorrhagic fever patients.

FROM: Jaax N, Jahrling P, Geisbert T, et al. Transmission of Ebola virus (Zaire strain) to uninfected control monkeys in a biocontainment laboratory. *Lancet* 1995;346:1669-1671.

Inactivated Polio Vaccine Recommended

The US Immunization Practices Advisory Committee (ACIP) recently voted to change the basic infant immunization series and supplement the long-standard oral polio vaccine. The new series would begin with two doses of enhanced-potency inactivated vaccine, given at ages 2 and 4 months, followed by two doses of oral live-attenuated polio vaccine, given at 6 months and 12 to 18 months of age.

The transmission of natural polio virus from person to person has been eradicated in the Western Hemisphere since 1991. But eight to 10 cases of polio are diagnosed in the United States each year as a result of the live-attenuated oral vaccine itself. One half of the cases occur in children who received the vaccine and the rest in people having close contact with vaccine recipients. No cases have been associated with the inactivated vaccine.

Experts agree that the new sequential schedule, with use of inactivated vaccine followed by oral vaccine, probably would reduce the cases of vaccine-associated polio. The inactivated vaccine is unlikely to cause paralytic polio, and giving that vaccine ahead of the oral polio vaccine probably would provide a level of immunity sufficient to examine the risk of contracting polio from the oral vaccine.

ACIP announced that this was only an intermediate step toward entirely replacing the oral vaccine with the inactivated vaccine. One rationale for this approach is that the oral vaccine is considered the most effective against wild polio, which, although eradicated in the United States, continues elsewhere in the world, particularly in India, and could be brought in by visitors. It is expected that this transition will take approximately 1 year.

FROM: Discussion at the US Public Health Service Advisory Committee on Immunization Practices, October 18-19, 1996; and US Panel calls for change in mix of polio immunization. *New York Times* October 19, 1996, p A8.

Hepatitis A Linked to Clotting Factor Concentrates

Three cases of hepatitis A occurring between September and November 1995 in recipients of factor VIII concentrates recently were reported by the CDC. The lot factor of VIII concentrate implicated in these cases (Alphanate TM, lot number AP5014A Alpha Therapeutic Corp, Los Angeles, CA) was removed from the market voluntarily by the manufacturer on December 8, 1995. In addition, one case of hepatitis A in a recipient of factor IX concentrate (AlphaNine S-D TM, also from Alpha Therapeutic Corp) is under investigation. On January 11, 1996, the manufacturer voluntarily withheld four lots (CA5410A CA5412A, CA5413A, and CA5421A) of this product.

Hepatitis A outbreaks associated with receipt of clotting factor concentrates have been reported previously in Europe but not in the United States. This is the first time hepatitis A virus (HAV) transmission has been documented through clotting factor concentrates in the United States. Most cases of hepatitis A in the United States occur in communitywide outbreaks through person-to-person transmission by the fecal-oral route. However, because viremia occurs during the prodromal phase of the illness, asymptomatic blood donors have been the source of HAV infection transmitted by transfusion.

In Europe, investigations of hepatitis A outbreaks among recipients of factor VIII concentrates implicated products prepared by a manufacturing method that included a solvent detergent (S-D) viral inactivation step. The largest outbreak occurred in Italy, involving 52 patients