Agent: Ebola-like Virus (Ebola Reston)

A filovirus, antigenically similar to Ebola virus, was first isolated from sick and dead cynomolgus monkeys (*Macaca fascicularis*) imported into the United States (Reston, VA) from the Phillipines in November, 1989. A second outbreak was reported in cynomolgus monkeys from the Phillipines in Texas in 1996. The illness, in the monkeys, consisted of fever, depression, coma and death. Steady increases in serum LDH reaching levels of 15,000 to 30,000 U/dL were a consistent antemortem finding. At necropsy, monkeys had prominent splenomegaly, hemorrhages in the liver and other organs and blood and fluid in body cavities. The virus was shown to be transmissible when three experimentally-inoculated monkeys developed the disease.

Potential Hazard: The ecology, natural history and mode of transmission of filoviruses in nature is unknown. The only known episode of transmission of a filovirus from monkeys to humans occurred from direct handling, with protective measures such as gloves, or blood and tissues from monkeys infected with Marburg virus. Animal caretakers of infected monkeys did not become infected. However, experiences with filovirus infections in humans (Ebola in Africa and Marburg in Germany) indicates that human infection can lead to serious and possibly fatal disease. Serologic studies of cynomolgus, rhesus and African green monkeys from multiple sources showed that about 10% had prior exposure to Ebola-like viruses.

At least 173 persons in the United States were in contact with infected monkeys, or their blood or tissues, during the 1989 outbreak and no person developed Ebola hemorrhagic fever although four have developed antibodies suggestive of exposure or silent infection. At least one person working at a monkey importation site, however, was shown to have antibodies to Ebola virus. Additionally, examination of 45 monkey handlers in the Phillipines showed one to be positive for antibodies. These data indicate that there is a low risk for human infection with Ebola-like virus in the course of handling and managing recently wild-caught or imported monkeys.

Recommended Precautions: Good quarantine practices at the point of entry to the country and similarly good quarantine and management practices at research institutions are effective in preventing human exposure to filoviruses. Adherence to standard precautions for bloodborne diseases in the management of primates reduces risk and protects humans against infection. Animal biosafety level 2 practices, containment and facilities are recommended for activities with newly imported primates. Vaccines and specific therapy for filoviruses are not available and treatment is supportive.

References:

Hinman A and Murphy F. CDC Memorandum: Ebola hemorrhagic fever virus infection in recently imported primates. December 6, 1989.


CDC. Update: filovirus infection in animal handlers. MMWR 1990;39:221.