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From Zoonoses and Communicable Diseases Common to Man and Animals, Third Edition, Volume II: Chlamydioses, Rickettsioses, and Viroses.

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This section, reproduced in full from the above book, contains information on Virus Etiology, Geographic Distribution and Occurrence, The Disease in Man, Source of Infection and Mode of Transmission, Diagnosis, Control, and Bibliography.

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## BRAZILIAN HEMORRHAGIC FEVER

### ICD-10 A96.8 Other arenaviral hemorrhagic fevers

**Etiology:** Sabiá (SABV) virus, a single-stranded RNA genome virus, is a new member of the genus *Arenavirus*, family *Arenaviridae* (see the chapter on Argentine hemorrhagic fever). This virus belongs to the Tacaribe complex. In a comparison of Sabiá virus with five other viruses in the complex (Guanarito, Junín, Machupo, Pichindé, and Tacaribe), sequence analysis of 250 nucleotides of the small genomic segment revealed a divergence of 56% with respect to the Guanarito, Junín, and Machupo viruses.

**Geographic Distribution and Occurrence:** So far, little is known about the distribution and occurrence of this disease. The first case was recognized in 1994 in the Brazilian state of São Paulo, in the small town of Sabiá. A secondary case developed in a laboratory technician who was working on characterization of the virus, and a third case occurred in a researcher at Yale University in the US when a receptacle containing a suspension of the virus broke in the ultracentrifuge.

**The Disease in Man:** The index case was in a 25-year-old agronomy technician who was admitted to the hospital 12 days after coming down with fever, cephalalgia, myalgia, nausea, vomiting, and asthenia. When the patient was examined at admission, she was very ill, somnolent, and mildly dehydrated, with pronounced reddening of the oropharynx. Analyses showed leukopenia and slightly elevated aspartate aminotransferase. Despite treatment with fluids, electrolytes, and antibiotics, the patient worsened and for the next three days presented hematemesis, vaginal hemorrhaging, conjunctival petechiae, difficulty in walking, tremors, and convulsions. On the third day, she lapsed into coma and shock, and on the following day she died. Autopsy revealed diffuse pulmonary edema, congestion with intraparenchymatous hemorrhaging, focal hemorrhages and necrosis in the liver, and a massive gastrointestinal hemorrhage. The laboratory technician working on isolation of the virus developed a fever of between 38°C and 40°C, chills, malaise, sore throat, headache, myalgia, conjunctivitis, nausea, vomiting, epigastric pain, diarrhea, bleeding gums, and leukopenia. The patient recovered, and paired sera samples showed seroconversion for the Sabiá virus. In the third case, the patient had a fever of 39.5°C and was given an experimental antiviral drug that enabled him to recover.

**Source of Infection and Mode of Transmission:** The source of transmission of the index case is unknown, but it is believed that rodents were involved. The patient did most of her work in an office, but 10 days prior to developing the disease she had visited two cities in São Paulo State. The other two cases were probably acquired from the inhalation of aerosols containing the virus in the laboratory. The reservoir of the virus will be the subject of future research.

**Diagnosis:** The researchers who reported on this disease emphasized the difficulty of diagnosing it in the

presence of several diseases in the area that have a similar clinical picture and in the absence of any precedent of hemorrhagic fever caused by a new arenavirus. Isolation and identification of the virus is the only way to arrive at a definitive diagnosis.

**Prevention:** The only recommendation that can be made at this point is to ensure that work on isolating this virus, as well as all the other arenaviruses that are pathogenic for humans, is performed in laboratories that meet the highest standards of safety.

### **Bibliography**

Lisieux, T., M. Coimbra, E.S. Nassar, *et al.* New arenavirus isolated in Brazil. *Lancet* 343:391-392. 1994.