



Emerging and Reemerging Infectious Diseases, Region of the Americas

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Human Rabies Transmitted by Bats in Pará State, Brazil

Background

Rabies is an infectious disease of acute viral etiology transmitted via mammals. The disease presents two principal transmission cycles: urban and wild. It is of major importance in that it has a case-fatality rate of 100%. However, it is amenable to elimination in its urban cycle as long as efficient prevention measures are taken to eliminate the source of infection to humans.

The principal sources of infection in the urban transmission cycle are dogs and cats. Bats are the primary source of infection in the wild cycle.

Cases of human rabies occur mainly as a result of being bitten by an infected animal, following the introduction of the virus contained in the animal's saliva. The disease can also enter the system through the mucous membranes, though less frequently, via scratches and licking. There also exists a remote possibility of vertical transmission or of infection through the respiratory tract, sexual contact, or the digestive tract (in animals).

In Brazil, in the period from 1986 to 2003, 675 cases of human rabies were reported, with most cases occurring in the northeastern (59%) and northern (21%) regions. In the period from 1986 to 1994, there was a significant reduction in the number of cases, extending up to the present (2003 data), with an average of 23 cases. Over the same period (1994-2003), the predominant species responsible for attacks was the dog, bringing about 80% of all human cases, followed by bats (8.2%). Historical data on human rabies cases by attacking species shows that, during the same period, the number of cases of human rabies transmitted by bats did not exceed 4 cases throughout the entire country.

In 2003, 17 cases of human rabies were reported, 14 transmitted by dogs and 3 by bats. So far this year, cases transmitted by these species have occurred in Bahia, Maranhão and Espírito Santo.

Current Situation in Portel, Pará

During the month of March 2004, the Department of Health of the State of Pará (Secretária da Saúde/SES-PA) and the Secretariat of Surveillance in Health (Secretária de Vigilância em Saúde/SVS) reported an outbreak of human rabies transmitted by bats in the city of Portel. The first case occurred on 4 March and the last case on 26 March. Following the reports to the SES and SVS, once epidemiological research was begun, five deaths had already occurred prior to any material being collected for diagnosis.

To date, the distribution of cases and deaths is as follows:

	Confirmed	Suspected	Ruled out	Total
Number of cases	5	11	3	19
Number of deaths	5	8	0	13

Note: The number of deaths is included in the number of cases.
Sources: Department of Health of the State of Pará (*Secretária da Saúde/SES-PA*) and the Secretariat of Surveillance in Health (*Secretária de Vigilância em Saúde/SVS*).

Should all suspected cases emerge as confirmed, which would elevate the number of confirmed cases to 16, this situation would represent the greatest outbreak of human rabies transmitted by bats ever to be registered in the country. The causes of this extremely rare event are being investigated by the municipal health authorities, SES-PA, SVS, and State Secretary of Agriculture. Aggression by bats occurred predominantly in the months of September and October 2003. Meanwhile, these episodes have been reported as frequent in the rural area around the Acuti Pereira River, the area where the affected persons were living. Initial evaluations indicate the existence of more than one bat colony in the affected localities.

Measures Taken

The epidemiological investigation included the interview of all persons attacked by bats along with the review of suspected cases of human rabies and deaths in the city appearing to occur as a result of compatible symptomology. Based on the identification of the persons attacked, a prophylaxis protocol (antirabies serum plus vaccine) was implemented for rabies in the city. All those attacked by bats were vaccinated. For other people exposed to the risk of rabies along the Acuti Pereira River, a regime of pre-exposure vaccination prophylaxis was instituted.

For all suspected cases detected after the epidemiological investigation medical care was made available in the city, with two suspected cases being sent to the Barros Barreto Hospital in Belém, Pará. Biological material was collected from the affected persons for diagnostic purposes, the samples being sent to the Evandro Chagas Institute for diagnostic testing.

Teams from the local health department have been working to identify the bat colonies and to control vampire bats in the areas where attacks have occurred.

Teams from both the city and state are vaccinating all dogs and cats against rabies in the focal area and are intensifying their vaccination efforts in the other rural and urban areas.

An orientation program is being offered for health professionals, training technicians on prophylactic treatment. Educational colloquia are being held for teachers, nursing auxiliary staff, and community health workers. There is a local media campaign to educate the public, and leaflets and technical notes are being prepared on bat attacks for distribution in the city.

Source: Report sent to PAHO by the Ministry of Health, Secretary of Health Surveillance (*Ministério da Saúde, Secretária de Vigilância em Saúde*) of Brazil, Brasília.