

FATAL CASE OF HUMAN RABIES (DUVENHAGE VIRUS) FROM A BAT IN KENYA: THE NETHERLANDS, DECEMBER 2007

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On 19 November 2007, a 34-year-old woman was admitted to the Academic Medical Center of the University of Amsterdam in the Netherlands with dysarthria, hypesthesia of both cheeks and unsteady gait, all of which started the day before. She had also experienced dizziness, nausea and general malaise since 16 November.

On 24 October, at the start of a two-week holiday trip through Kenya, a small bat had flown against her face. While she was hitting away the animal, it made two bleeding scratches on the right side of her nose. The incident took place in a camping site between Nairobi and Mombasa, at dusk, while she was brushing her teeth. The wound was washed with soap and cleaned with an alcohol solution. The warden of the campsite and medical personnel of the neighbouring health centre were not aware of the existence of rabies in bats in the area and no further action was recommended. The woman and her husband then continued the holiday trip.

Treatment

On admission, passive and active post-exposure prophylaxis (PEP) for rabies was initiated. The patient's neurological clinical picture deteriorated quickly. As rabies was very likely, on day seven of admission, the "Wisconsin rabies treatment protocol" was initiated, an experimental treatment protocol that has resulted in the survival of the only patient who recovered from rabies infection without prior vaccination [1]. As this treatment is experimental, clinical evidence is still lacking, and patients subsequently treated in a similar or modified way in Thailand [2], United States [3], and Germany [4] did not survive. The treatment was only started after consultation of the family and with their agreement. The diagnosis of infection with lyssavirus, genotype 4 - Duvenhage virus (DUVV) was confirmed in a nuchal biopsy taken on the second day of admission. This confirmation by cloning and sequencing of the PCR products was obtained three days after the treatment had begun, when the patient was still alive. Despite all efforts, the patient died on 8 December, 23 days after the onset of illness.

Preventive measures for contacts

There are no laboratory-confirmed cases documenting the transmission of rabies from rabies-infected patients to healthcare

providers or household contacts, either by direct contact or by fomites or environmental surfaces, possibly due to extensive prophylactic treatment of these contacts [5,6,7]. In the case described here, the patient had been in close contact with several family members during the first days of illness. On admission, protective measures were taken but it was regarded as prudent to advise all close family contacts (n = 11) and attending hospital employees (n = 30) to receive passive and active post-exposure prophylaxis (PEP). Five days before the onset of illness, the patient had spent a weekend with friends, with possible exposure to saliva. Chances of infection at that stage were practically nil, but for various reasons it was decided to offer this group of six people the vaccine series of five injections without HRIG (human anti-rabies immunoglobulin). Literature shows that approximately 50 contacts per case required PEP, and in one case the number exceeded 200 [8].

Conclusion

Rabies is a fatal zoonotic disease in humans, preventable if adequate measures are applied shortly after a suspected infection. The main reservoir of rabies (lyssavirus, genotype 1) are dogs and other animals belonging to the *Canidae* family, but all mammalian animals in endemic areas are capable of contracting and transmitting the disease [9].

The Duvenhage virus is associated with insectivorous bats and has so far been isolated from two human cases bitten by bats in South Africa (in 1970 and 2006), and two insectivorous bats in South Africa (1981) and Zimbabwe (1986) [10]. To date, no cases of rabies infection from a bat have been described in Kenya.

This fatal incident shows that in a rabies endemic area PEP has to be applied in case of every, however minor, bite or scratch exposure to a mammalian animal, including bats [10].

A clinical case report and a report on the virological, immunological and histopathological results will be presented as soon as ongoing investigations are finished.

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