A HUMAN CASE OF ENCEPHALITIS DUE TO A LYSSAVIRUS RECENTLY IDENTIFIED IN FRUIT BATS

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This is a report of the first known human case of illness apparently due to the newly identified lyssavirus. The lyssavirus had previously only been identified in fruit bats (flying foxes).

A 39 year old female living in Rockhampton became unwell in late October 1996 with pain and numbness in her left arm. She had been caring for a number of fruit bats for the preceding two to four weeks and had sustained numerous scratches to her left arm. There was no history of a bite from the fruit bats. She had previously cared for a number of other animals including cockatoos, dogs, cats, an insectivorous bat and marsupials, but had been caring for fruit bats in the recent period only.

Over the subsequent two to three days she developed fevers, headaches, dizziness and vomiting, and was admitted to hospital. Lumbar puncture revealed a pleocytosis with 100 white blood cells per mm^3 (80% lymphocytes, 20% polymorphs), five red blood cells per mm^3, glucose 3.7 mmol/L, and protein 1.23 gm/L. No organisms were seen on microscopy and there was no growth on culture.

She was treated with broad-spectrum antibiotics but her condition deteriorated and she developed diplopia and swallowing difficulties with evidence of a bulbar palsy. She required intubation for airway protection and was transferred to Royal Brisbane Hospital. Broad-spectrum antibiotics and intravenous acyclovir were continued.

Over days eight to ten of her illness, she developed complete extraocular muscle palsies, progressive weakness in all limbs and eventually a depressed conscious state. On one occasion she became extremely agitated then lapsed into her previous state. CT head scan revealed no abnormalities and repeat lumbar puncture revealed similar results to the first. Magnetic resonance imaging of the brain revealed several small areas of increased signal on T2 weighted images in the brain stem but was otherwise unremarkable. By day 11 she was areflexic, unresponsive, hyperthermic (39^oC) and ventilator dependent. An electroencephalogram was consistent with a diffuse encephalitis.

Serum and cerebrospinal fluid were sent to the CSIRO Australian Animal Health Laboratory in Geelong. Serum was found to contain antibodies to the lyssavirus group. Polymerase chain reaction performed on cerebrospinal fluid with primers specific for the lyssavirus recently identified in fruit bats produced a 250 base pair product. Cultures for virus isolation are continuing. No antibodies to equine morbillivirus were identified. Acute phase serology for Murray Valley encephalitis, dengue, Kunjin, Alfuy, Kokobera, Stratford, Edge Hill, Barmah Forest, Sinbis and Ross River viruses were all negative.

The patient was administered rabies immunoglobulin. Family members were treated with rabies immunoglobulin and commenced on a rabies post-exposure prophylaxis vaccination schedule. After a period of apparent stabilisation of her clinical condition, the patient deteriorated further with progressive evidence of cerebral damage and died.

This appears to be the first case of human infection with the newly recognised lyssavirus which has been identified in five fruit bats from Ballina, New South Wales and Townsville and Robina in Queensland. Further investigations involving some of the animals in contact with this patient as well as other animals are ongoing.

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