Nipah virus

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Nipah virus is at present not considered to be an arbovirus but is included in this chapter because of its close resemblance to Japanese Encephalitis.

From September ’98 to March ’99 a new paramyxovirus appeared in Malaysia. It was given the name Nipah virus and is related to Hendra virus which in 1994 caused fatal infections in horses and people in Australia. Nipah virus causes an encephalitis that clinically is indistinguishable from Japanese Encephalitis. An incubation period of 4-18 days is followed by 3-14 days of fever, headache, vomiting, reduced consciousness, meningism, myoclonus, convulsions, areflexia and hypotonia, tachycardia, abnormal pupils, nystagmus. There is often a considerable effect on the brain stem, often resulting in an abnormal oculovestibular reflex (abnormal “doll’s eye reflex”). Sometimes there is a non-productive cough. In man the mortality rate is high. During the first epidemic more adults than children were affected, mainly those who were working as pig-farmers. Pigs can be infected and develop a cough. In animals infection often results in death, unlike with Japanese Encephalitis. Flying foxes (large bats, including *Pteropus hypomelanus*) are thought to be the reservoir. The virus has been isolated from their urine and saliva.

Bats and zoonoses

There are multiple reasons why several zoonotic diseases originate in bats (rabies, Nipah virus, Hendra virus, SARS-CoV, Marburg, …). About a quarter of all mammal species on the planet are bats. The genetic diversity among the more than 1000 species of bats creates numerous niches for viruses. Bats live from 5 to 50 years, which is much longer than most small mammals. This could be useful for viruses seeking stable reservoirs. Many species roost packed together in large clusters, making it easy for a virus to spread through a colony. Cave-sharing among different species also facilitates infection across species, which in turn increases the chances of viral recombination. Some bats can fly up to 20 km a day, foraging, and some species are migratory. Such animals have the capacity of widely transporting a pathogen over a relatively short period. Some bats seem to be able to carry and shed a virus for a long time without getting sick and without clearing the infection, but more study is required.

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