LETTER TO THE EDITOR

Nipah virus; an overview and potential for outbreak in Pakistan

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Nipah Virus (NiV) is a paramyxovirus of the genus Henipavirus. It is a zoonotic virus, carried by the vector fruit bat (genus Pteropus), also called the flying fox.

The virus can be transmitted to humans if they encounter the infected animal or its body fluids—thus causing a spillover event. Once infected, the person-to-person spread of NiV can also occur.

The first outbreak of NiV occurred in 1999 in Malaysia and Singapore and affected humans and pigs. This outbreak resulted in nearly 300 cases and more than 100 deaths. Causing substantial economic impacts as over one million pigs were killed to control the outbreak.[1]

Since the initial outbreak in Malaysia, outbreaks have been recorded almost annually in India and Bangladesh.[2] In these areas, human-to-human spread plays a vital role, raising concerns about the potential of NiV to become a pandemic.

The incubation period of the virus is from four days to two months, with most of the cases developing symptoms in the first two weeks.[3] Prodromal symptoms of headache, dizziness, lethargy, and altered sensorium are common. Neurological involvement may lead to encephalitis, aseptic meningitis, brainstem dysfunction, or cerebellar involvement. Other Clinical features include Myocarditis, cardiac arrest, and ARDS.[4]

Fruit bats are the natural reservoirs for NiV. In the case of the outbreak in Malaysia, pigs were the intermediate hosts in transmitting the virus to humans. These pigs fed on the partially eaten fruits by the fruit bats and then transmitted the virus to humans through direct contact, aerosols, and bodily secretions.[5]In the outbreaks seen in Bangladesh and India, nosocomial transmission from human-to-human contact was the major source of transmission.[6]

There are many reasons why the Nipah virus outbreak remains a concern in Pakistan. First, the Indian flying fox species of bat is also found in Pakistan. In one study, 70% of respondents in the provinces of Punjab and Khyber Pakhtunkhwa reported the presence of bats in their area and the presence of fruits discarded by these bats.[7] Secondly, Pakistan shares a common border with India, where outbreaks of the Nipah virus have been reported recently. Another concern is international travel and the incubation period of the virus, allowing for human-to-human transmission before the symptoms develop. Due to these reasons, it is important to take steps to control large populations of reservoir hosts, increase public awareness, and implement a monitoring programme to screen fruit bats in high-risk areas.

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