

Nipah virus: a re-emerging public health concern

The Nipah virus (NiV) is a highly virulent, single-stranded RNA virus of the Paramyxoviridae family.¹ It causes a widespread zoonotic illness that first emerged among pig farmers in northern Peninsular Malaysia in 1998, and has regularly and repeatedly led to many epidemics since 2001 in Bangladesh, India, Singapore, Malaysia, and other countries.² According to a report³ of an outbreak in Bangladesh from Dec 15, 2004, to Jan 31, 2005, individuals were infected with NiV after consuming date palm sap tainted with bat urine, following a 2-week to 3-week incubation period. On Aug 30, 2023, the largest known outbreak of the Nipah virus disease occurred in Kerala, India, with a high fatality rate of 40–75% and 30 cases of infection.⁴ Approximately half of the cases in Kerala involved human-to-human transmission.

WHO reports that the outbreak in 2023 will be Kerala's fourth NiV outbreak in the past 5 years. However, zoonotic viruses such as NiV, SARS-CoV, and MERS-CoV can spread directly from person to person or through contact with infected animals, resulting in lethal encephalitis and respiratory infection symptoms. In particular, viral strains in India and Bangladesh have more potential for human-to-human transmission than the Malaysian virus isolates and thereby lead to a wider pandemic,⁵ as the Malaysian strain was a zoonotic strain, with almost no transmission between people. There are no licensed vaccines or specific medications for NiV, and little is known about the pathophysiology and biology of the virus.⁶ The risk of infection in the population is substantially high because of the wide distribution of NiV in southeast Asia and Australia, lengthy incubation period of the disease, and atypical patient symptoms. Therefore, future epidemics and outbreaks might pose challenges for public health.

In brief, limiting the spread of NiV is essential for lowering the risk of infection. To prevent and limit the spread of NiV, especially in the early phases of suspected NiV outbreaks, further direct contact with virus carriers such as bats and intermediate hosts such as pigs and cattle should be avoided. In the event of a verified case, stringent isolation policies should be implemented to stop the pandemic from spreading globally. To respond to a global pandemic quickly and efficiently, public awareness regarding NiV prevention should be increased, and coordination is required between government and organisational capabilities to formulate wildlife management plans, particularly for the conservation of bat habitats and those of other wildlife.

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