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A review on Nipah Virus past outbreaks and future containment

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Nipping Virus (NiV) is a bat-borne newly emerging first identified in Malaysia in 1998. It has an alarming mortality rate ranging from 40% to 75% in humans. The ubiquitous nature of the reservoir host, increasing deforestation, multiple modes of transmission, high case fatality rate, and lack of effective therapy or vaccines make NiV's pandemic potential increasingly significant. The virus causes encephalitis in humans and pigs in which it spreads horizontally from bat to pig, pig to pig, pig to human, bat to human, and human to human. The mode of transmission from pig-to-pig, pig-to-human, and human-to-human is facilitated by direct contact with Nipah Virus containing nasal and oropharyngeal secretions. The Indo-Bangladesh outbreaks were associated with the consumption of raw date palm sap contaminated by fruit bats. Fever, vomiting, dizziness, brain stem abnormalities are the main clinical features. The virus can be diagnosed by RT-PCR from bodily fluids as well as antibody detection via enzyme-linked immunosorbent assay (ELISA) and virus isolation by cell culture as well. Destruction of bats' habitat and making them stressed and hungry enforce bats to come to the people residents and pig farms so that spillover can occur. Therefore preventing the spill over of the virus has irreplaceable significance to interrupt the epidemic potential of NiV. The understanding and prevention of spillover require multiple scientific skills with expertise ranging from viral protein structure and adaptation to immunology, behavior, and physiology of the reservoir hosts.



Figure: Schematic representation of modes of Nipah Virus spread

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Biography

Fentahun Wondmnew is researching for his MSc in veterinary Epidemiology at Haramaya University currently. He has been training veterinary technicians in the national vocational college in Ethiopia since November 2016. He has been working as a consultant in regional animal health surveillance from April 15 to November 2016.