

Nipah Virus: Recent Emerging Zoonoses

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World Zoonoses Day is celebrated on 6th July worldwide to increase awareness amongst the public regarding the importance of zoonotic infections (Infections wherein animals are the reservoirs of the pathogen) and the precautionary measures that should be taken to keep this impending plague at bay. Emerging zoonotic infections are defined in the 2004 Geneva convention, as 'a zoonosis that is newly recognised or newly evolved animal to human transmitted disease, or that has occurred previously but shows an increase in incidence or expansion in geographical, host or vector range' by the World Health Organization (WHO), Food and Agriculture Association of the United States (FAO), and the World Organization for Animal Health (OIE) [1].

Nipah virus (NiV) is yet another infamous emerging zoonotic virus recently in news for the death of persons in Kerala, Southern India due symptoms ranging from respiratory distress to encephalitis [2]. In this recent outbreak, NiV belonging to family paramyxovirus and genus Henipavirus was thought to be transmitted to humans through the droppings from *Pteropus* fruit bat, a natural host as well as due human to human transmission. The virus has been since been successfully controlled by quarantine measures and ensuring public health concerns.

NiV outbreaks in humans are recorded since 1999 in Sungai Nipah village in Malaysia, where infected pigs were thought to be the reservoir of the infections leaving 100 human deaths and economic losses to many due to swine culling [3]. In 2001, a different NiV strain affecting Bangladesh and eastern India was reported in sporadic outbreaks [4]. The consumption of raw food products such raw date palm fruit juice infected with urine or saliva of infected fruit bats was considered as the cause of transfer of infections to humans [5]. Thereafter, the infections spread due to human to human transmission through human excretions as well as secretions. Incubation period (time from infection to appearance of symptoms) of NiV infection, may range from 4 to 14 days. Humans infected with NiV may show initial symptoms of mild fever, headache, myalgia typically of respiratory infection which may followed by signs of acute encephalitis such as dizziness, neurological conditions progressing to seizures and coma in 24 - 48h in severe cases. There is no vaccine or drug available currently for the treatment of NiV infection and intensive support care is provided to ease infection symptoms.

Population overcrowding, urbanization, poor sanitation, deforestation, invading human settlements in breeding and feeding areas of wild animals, overlap between terrains of wild and domestic fauna creates niches wherein pathogen gets an opportunity to attempt interspecies transitions and adapt to new hosts and ecosystems [1]. The initial transmission of virus may occur due to consumption of food contaminated with the excretion or secretions of the fruit bat/reservoir animals that is followed by a transition in transmission through human contact. The fruit bat implicated for the spread of the virus has a wide geographical distribution and surveys are being conducted to determine the reservoir pool of the virus in their natural host [6]. Based on experience in handling previous infections and other emerging viral zoonotic infections include swine flu virus infection, the use of effective sanitization around domestic animals, space management between humans and animals to control the development and spread of zoonotic infections is recommended [7].

The 2018 WHO blueprint has already added NiV to growing list of emerging zoonoses such as Ebola Virus, Zika Virus, Middle East Respiratory Syndrome Virus, Lassa and Crimean Cogo Hemorrhagic Fever Virus which will prioritize research funding in the areas of diagnostics, therapeutics and preventive control measures [7,8]. With the emergence of several such new zoonotic infections in the past decade, it has become imperative to increase public awareness as well put in place systems that can alerted for the swift control of the spread of the pathogens [8,9]. With the concept of One Health, recognition that human health is connected to the health of our environment and the animals around us at grass root levels may help mankind in facing future threats of fatal emerging diseases (<http://www.onehealthinitiative.com/>).

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