



A SUCCINCT REVIEW ARTICLE ON "NIPAH VIRUS INFECTION (NIV)"

Dr. Balaji M S*	Assistant Professor, Department of Medical Surgical Nursing, Adichunchanagiri University, B G Nagara, Karnataka, India. *Corresponding Author
Chandrashekar H C	Principal & Head, Department of Community Health Nursing, Adichunchanagiri College of Nursing, Adichunchanagiri University, B G Nagara, Karnataka, India.
Keshavamurthy C D	Professor & Head, Department of Mental Health Nursing, Adichunchanagiri University, B G Nagara, Karnataka, India.
Ramya R	Assistant Professor, Department of Obstetrics & Gynaecology, Adichunchanagiri College of Nursing, Adichunchanagiri University, B G Nagara, Karnataka, India.
Dipankar Maiti	Nursing Tutor, Sushrutha College of Nursing, Rajiv Gandhi University of Health Sciences, Bangalore, Karnataka, India.

ABSTRACT

WHO has identified NIPAH as one of the deadliest disease can cause epidemic situation in future after the Ebola epidemic for crucial research and expansion before and during an epidemic toward new diagnostic tests, vaccines and medicines. Nipah virus scientific name is *Nipah henipavirus*, is a bat-borne virus sourced Nipah virus infection in humans and some other animals, having exceedingly mortality rate. The symptoms start to appear within 5-14 days from the day of exposure to the virus. Preliminary symptoms are fever, headache, and drowsiness, shadowed by disorientation and mental confusion. Nipah virus (NiV) infection can be diagnosed during illness & also recoverable disease. NiV infection can be diagnosed by using different tests. All assumed cases of Nipah virus infection to be isolated. While some evidence supports the use of ribavirin, it has not yet been studied in people with the disease. Specific antibodies also very helpful in an animal model with probable benefit. Favipiravir, acyclovir, and remdesivir have been evaluated as potential antivirals against Nipah virus.

KEYWORDS : Nipah virus (NiV), & WHO.**INTRODUCTION:**

The name "Nipah" designates the place, Sungai Nipah in Port Dickson, Negeri Sembilan, the source of the human case from which Nipah virus was first secluded.^{1,2} WHO has identified NIPAH as one of the deadliest disease can cause epidemic situation in future after the Ebola epidemic for crucial research and expansion before and during an epidemic toward new diagnostic tests, vaccines and medicines.^{3,4} **Nipah virus** scientific name is *Nipah henipavirus*, is a bat-borne virus sourced Nipah virus infection in humans and some other animals, having exceedingly mortality rate. Several disease outbreaks caused by Nipah virus have arisen in South and Southeast Asia. Nipah virus belongs to *Henipavirus* genus along with the Hendra virus, which has also triggered disease outbreaks.

Like other henipaviruses, the Nipah virus genome is a single (nonsegmented) negative-sense, single-stranded RNA of over 18 kb, which is considerably longer than that of other paramyxoviruses^{1,2}. The enveloped virus particles are flexible in shape, and can be filamentlike or spherical; they contain a helical nucleocapsid.¹ Six structural proteins are generated: M (matrix), N (nucleocapsid), F (fusion), G (glycoprotein), P (phosphoprotein) and L (RNA polymerase). The P open reading frame also encodes three non-structural proteins, C, V and W. There are two envelope glycoproteins. The viral anti-receptor or attachment protein are created by assembling the G glycoprotein as a tetramer, which muddles to the receptor on the host cell. The F glycoprotein forms a trimer, which mediates membrane fusion.^{5,6}

Incidence:

In the year 1998 the first cases of Nipah virus infection has been disclosed, when an outbreak of neurological and

respiratory disease on pig farms in peninsular Malaysia caused 265 human cases, with 105 deaths.⁷

Between the middle of 1999 year, more than 265 human cases of encephalitis, including 105 deaths, had been reported in Malaysia, and 11 cases of either encephalitis or respiratory illness with one fatality were reported in Singapore⁸

Mode of transmission:**Nipah virus (NiV) can blowout to people from:**

- Direct contact with infected animals like bats or pigs or their body fluids (such as blood, urine or saliva)
- Consuming food products contaminated by body fluids of infected animals (such as palm sap or fruit contaminated by an infected bat)
- Close contact with a NiV infected person or their body fluids (including nasal or respiratory droplets, urine, or blood).⁹

Clinical Manifestation

The symptoms start to appear within 5-14 days from the day of exposure to the virus. Preliminary symptoms are fever, headache, and drowsiness, shadowed by disorientation and mental confusion. Respiratory issues can exist during the early stages. Coma symptoms can be finding within 24 to 48 hours. Inflammation of the brain (Encephalitis), is a hypothetically fatal complication of Nipah virus infection. Nipah patients who facing breathing difficulty are more likely than those without respiratory illness to spread the virus, as are those who are more than 45 years of age. The disease is suspected in symptomatic individuals in the context of an epidemic outbreak.^{10,11,12}

Diagnosis:

Nipah virus (NiV) infection can be diagnosed during illness &

also recoverable disease. NiV infection can be diagnosed by using different tests. At primary stages of the illness, laboratory testing can be conducted by using real time polymerase chain reaction (RT-PCR) by taking swab samples from throat and nasal, cerebrospinal fluid, urine as well as blood. For advanced stage diagnosis enzyme-linked immunosorbent assay (ELISA) test is used.

Early diagnosis of NiV infection can be thought-provoking due to the non-specific early symptoms of the illness. Early detection as well as diagnosis of NiV infected individuals are very complicated as it can stay asymptotically. To prevent transmission to other people also to manage outbreak response efforts.¹³

Treatment:

In the year 2020 one specific treatment of NiV has been invented. The mainstay of treatment is supportive care. Standard & specific infection control habits along with proper barrier nursing techniques are recommended to avoid the blowout of the infection from one person to another. All assumed cases of Nipah virus infection to be isolated. While some evidence supports the use of ribavirin, it has not yet been studied in people with the disease. Specific antibodies also very helpful in an animal model with probable benefit. Favipiravir, acyclovir, and remdesivir have been evaluated as potential antivirals against Nipah virus.^{14,15,16,17.}

Prevention:

Nipah virus (NiV) infection has been infected to the countries Bangladesh, India, Malaysia and Singapore.

People should follow the steps to prevent NiV infections like:



Ethical clearance-

This article is a purely a narrative review article hence it's not required an ethical clearance.

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Conflict of Interest – Nil

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