



AYURVEDIC MANAGEMENT OF NIPAH VIRUS (NiV) INFECTION

*Dr. Sukhpreet Kaur (Assistant Prof.)

India.

*Corresponding Author: Dr. Sukhpreet Kaur (Assistant Prof.)

India.

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ABSTRACT

Nipah virus (NiV) is a zoonotic virus (it is transmitted from animals to humans) and can also be transmitted through contaminated food or directly between people. In infected people, it causes a range of illnesses from asymptomatic (subclinical) infection to acute respiratory illness and fatal encephalitis. The virus can also cause severe disease in animals such as pigs, resulting in significant economic losses for farmers. Fruit bats of the Pteropodidae family are the natural host of Nipah virus. There is no treatment or vaccine available for either people or animals. The primary treatment for humans is supportive care. The 2018 annual review of the WHO R&D Blueprint list of priority diseases indicates that there is an urgent need for accelerated research and development for the Nipah virus.

KEYWORDS: *Ayurveda*, Nipah virus, *Rasayana*.

INTRODUCTION

Nipah virus (NiV) is a paramyxovirus transmitted to humans from animals, which have been affected by this virus. It can also be transmitted from infected humans to other humans through direct contact. NiV causes a symptomatic or mild infection in some of the patients, but most of the clinical cases present with acute neurological signs and symptoms.

Signs and symptoms

Human infections range from asymptomatic infection to acute respiratory infection (mild, severe), and fatal encephalitis. Infected people initially develop symptoms including fever, headaches, myalgia (muscle pain), vomiting and sore throat. This can be followed by dizziness, drowsiness, altered consciousness, and neurological signs that indicate acute encephalitis. Some people can also experience atypical pneumonia and severe respiratory problems, including acute respiratory distress. Encephalitis and seizures occur in severe cases, progressing to coma within 24 to 48 hours.

The incubation period (interval from infection to the onset of symptoms) is believed to range from 4 to 14 days. However, an incubation period as long as 45 days has been reported.

Most people who survive acute encephalitis make a full recovery, but long term neurologic conditions have been reported in survivors. Approximately 20% of patients are left with residual neurological consequences such as

seizure disorder and personality changes. A small number of people who recover subsequently relapse or develop delayed onset encephalitis.

The case fatality rate is estimated at 40% to 75%. This rate can vary by outbreak depending on local capabilities for epidemiological surveillance and clinical management. In humans, the case fatality rate ranges from 9 to 75 percent. In *Ayurvedic* perspectives, it comes under the category of *Vata Shlaishmik Jwara* initially, which further extends to *Sannipataja Jwara*.

Diagnosis

Initial signs and symptoms of Nipah virus infection are nonspecific, and the diagnosis is often not suspected at the time of presentation. This can hinder accurate diagnosis and creates challenges in outbreak detection, effective and timely infection control measures, and outbreak response activities.

In addition, the quality, quantity, type, timing of clinical sample collection and the time needed to transfer samples to the laboratory can affect the accuracy of laboratory results.

Nipah virus infection can be diagnosed with clinical history during the acute and convalescent phase of the disease. The main tests used are real time polymerase chain reaction (RT-PCR) from bodily fluids and antibody detection via enzyme-linked immunosorbent assay (ELISA).

Other tests used include polymerase chain reaction (PCR) assay, and virus isolation by cell culture.

Preventive Management

- Avoid contact with pigs and pig handlers, bats and horses.
- Maintain personal hygiene and intensive hand washing practices
- Avoid consuming raw fruits and fruits should be washed thoroughly and peeled or cooked properly.
- Avoid eating or buying fruit and vegetables at unhygienic places or fruit fallen on the ground, Consume only well cooked clean homemade food till the outbreak settles down.
- Avoid unpasteurized juices
- Preferably use N95 mask while travelling or working in public places to avoid person to person transmission.
- Person, who generally comes in contact with potentially infected animals, including laboratory personnel and health-care workers, should wear protective clothing, impermeable gloves, masks, goggles, and boots.
- Patients infected with NiV should be isolated and barrier nursing should be used while caring for infected patients because the virus can be transmitted from person to person.

Prophylactic Measures/Immunomodulatory drugs

- Measures should be taken to strengthen the immune system through healthy dietetic habits.
- Amlaki Rasayana 3 gm, twice a day with water.
- Ashwagandadi Avaleha 10 gm twice a day with lukewarm milk.
- Haridra khand 5 gm twice a day with lukewarm milk.
- Samshamani vati 500 mg twice a day.
- Tulasi 3-5 leaves should be consumed a fresh or in tea twice in a day.
- Indukantha kashaya 10 ml with 40 ml of warm water twice a day before food.