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NIPAH VIRUS

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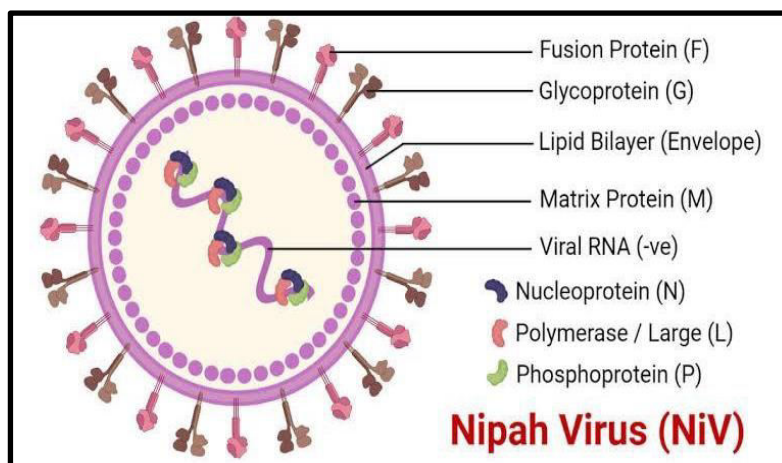
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ABSTRACT: The effects of nipah virus infection is increasing day by day in today's scenario and more no. Of cases are found in various countries. The primary pathway of transmission is from bats to people. It's found in both species of human as well as animals, more no. Of death was found in both species hence zoonotic. Laboratory investigation at the time of outbreaks didn't show or identify an infectious agent.

I. INTRODUCTION

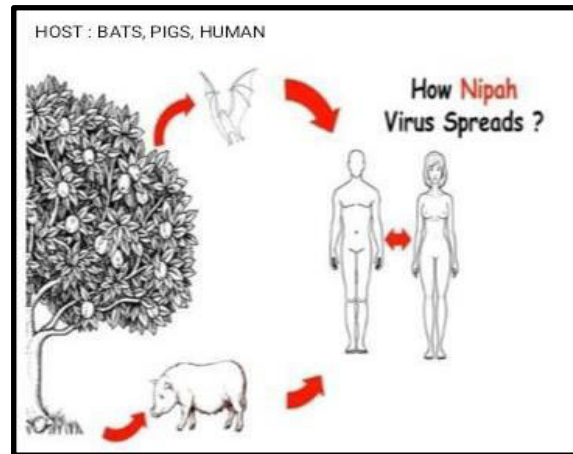
Nipah virus is an enveloped, negative-sense, single stranded RNA virus. It is a zoonotic virus, an emerging infectious disease caused by virus of the family paramyxoviridae, genus henipavirus. It got its name from the village in Malaysia where the person from whom the virus was first isolated succumbed to the disease in the year 1999.

STRUCTURE OF NIPAH VIRUS :



II. PROBLEM STATEMENT

Nipah virus infection was initially isolated and identified in 1999 during an outbreak of encephalitis and respiratory illness among pig farmers in Malaysia and Singapore. In 2001, it was again identified as the causative agent in the outbreak of human disease in Bangladesh and India. Since then it has been reported almost annually in Bangladesh and many times in India. In India, Kerala in the month of May 2018 recorded 19 cases with 17 deaths. In August 2021 recorded cases in Kerala. A recent outbreak in India was in Kerala in the month of September 2023, recorded 6 cases with 2 deaths. Virus was isolated from cerebrospinal fluid after death. Kerala in the month of September 2023, recorded 6 cases with 2 deaths. Virus was isolated from cerebrospinal.



RESISTANCE TO PHYSICAL AND CHEMICAL ACTION :

- **TEMPERATURE** : other animal paramyxoviruses are inactivated by 60° C/60 minutes.
- **PH** : stable between PH 4.0 and 10.0.
- **CHEMICALS / DISINFECTANTS** : paramyxoviruses are susceptible to common soaps and disinfectants, lipid solvents (alcohol and ether) and sodium hypochlorite solutions were used effectively in outbreaks for cleaning and disinfection.
- **SURVIVAL** : Survives for a long period of time in favorable conditions, survives for days in fruit bats urine and contaminated fruit juice.

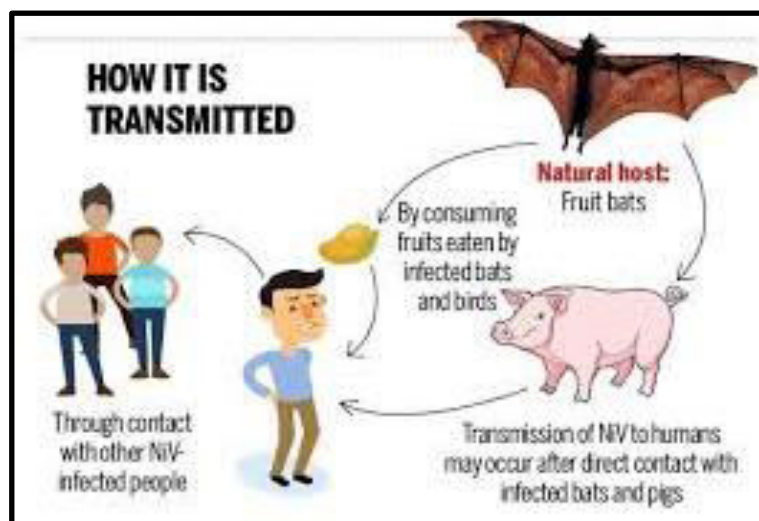
EPIDEMIOLOGY :

HOST :

- Primary reservoirs of nipah virus are fruit bats of genus pteropus.
- Domestic swine are extremely susceptible to infection, and act as Amplifying host.
- Infection has also been reported in dogs , cats, horses and goats. .

III. MODE OF TRANSMISSION

Transmission of nipah virus to humans may occur after direct contact with infected bats, infected pigs, or from another nipah virus infected person (as reported in Bangladesh and India) where it is seen in the family and caregivers of the infected patients.



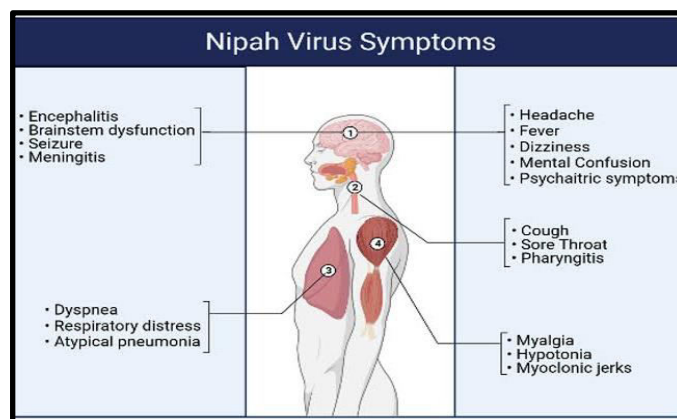
- Transmission also occurs from direct exposure to infected bats. Example is consumption of raw date palm sap contaminated with infectious bats secretions and excretions.
- Fruit bats of the family Pteropodidae, particularly species belonging to the pteropus genus, are the natural host.
- Movements of animals incubating diseases or or non demonstrating clinical signs is principle means of extending nipah virus geographically.
- Vertical transmission across the Placenta, by iatrogenic means and in semen has been suggested but not conformed in swine.
- Intranasal Or oral inoculation of cate with virus experimentally produced diseases.

SOURCES OF INFECTION :

- Nipah virus has been found in urine and uterine fluid of wild pteropid bats, experimentally isolated from urine, kidney and Or uterus of infected bats.
- Viruses may be found in fruit contaminated with bat saliva or urine.
- Other logical sources of infection are contaminated drinking water and access to aborted bats foetuses Or their fluid/tissue of parturition.
- Once infected, pigs shed nipah virus in respiratory secretion and saliva , urine of infected swine should also be considered a risk.
- Role of other animals as a source of virus in outbreaks is less clear though virus has been isolated from feline respiratory secretions, urine, the placenta and embryonic fluids.
- Sources if infective material for humans include swine respiratory secretions or via fruit or juice contaminated by bat secretions (eg. Unpasteurised date palms or juice)

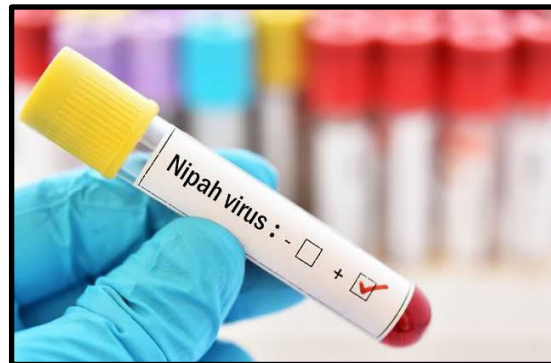
INCUBATION PERIOD : usually 4 to 14 days in humas. it can be as short as two days Or as long as a month.

CLINICAL FEATURES :



- Human infection ranges from asymptomatic infection to acute respiratory infections and fatal encephalitis. Infected people initially develop fever, headache, malaysia, vomiting and sore throat.
- This can be followed by drowsiness, dizziness, altered consciousness and neurological sign that indicate acute Encephalitis .Some people can also experience atypical pneumonia and severe respiratory problems, including acute respiratory distress.
- Encephalitis and scissors occur in severe cases , progressing to coma within 24 to 48 hours. Most people who survive acute encephalitis make a full recovery. The case fatality rate is estimated at 40% to 75%.

DIAGNOSIS : Nipah virus infection can be diagnosed with clinical history during the acute and convalescent phase of the disease.



- The main tests are real time polymerase chain reactions.
- RT - PCR from bodily fluid and antibody detection via ELISA.
- Other tests used include polymerase chain reaction assay, and virus isolation by cell culture.
- Virus neutralization
- Nucleic acid based recognition methods
- Henipavirus antigen detection in fixed tissue - immunochemistry.

COMPLICATIONS :

- Septicaemia
- GI bleeding
- Renal impairment
- Relapse or late onset of encephalitis
- Residual neurological deficits.

TREATMENT :

- to the world Health Organization (WHO) , there is presently no treatment available for nipah virus.furthermore ,no preventive vaccine exists up till now to avert nipah virus infection, which make it essential for patients with symptoms to be taken to hospital at once for timely diagnosis and remedial measures.
- The only methods to treat the nipah virus disease are supportive care, with the patient being admitted in hospital, observing their vitals, ensuring they get ample rest , hydration to recuperate from sickness, furthermore , antiviral drugs are prescribed to alleviate nausea, vomiting, convulsions and other accompanying symptoms as they developed

PREVENTION :

In the absence of vaccine , the only way to reduce or prevent the infection in people is by,

Sanitary prophylaxis :

- strict biosecurity swine installations with aim of avoiding contact with fruit bats and their secretion is essential, including: fruit tree set-back using screens at open air access and appropriate disposal of root run-off.
- An active surveillance program with rapid detection and immediate culling of seropositive swine is critical in preventing spread of disease and infection of humans.



- Effective quarantine and control of animal movement must also be implemented early in an outbreak.
- All materials and equipment from the affected farm should be cleaned and disinfected before transport.
- control of any access to swine by wild or domestic animals must be enacted.

Medical prophylaxis :

- No vaccines yet exist. The only methods to treat the disease are by supportive care.

HOMOEOPATHIC MEDICINE :

1.CUPRUM METALICUM :

- Tonic and clonic spasm , convulsions and epileptic attacks.
- In epilepsy the aura being in the knees to the Epigastrium.

2.HELLEBORUS NIGER :

- General muscular weakness , which may go on to complete paralysis.
- Bores head into pillow beats hand on forehead due to headache, meningitis.
- Headache culminates in vomiting.

3. BELLADONNA :

- A high feverish state, with comparative absence of Toxemia.
- Starring wide open pupils dilated (meningitis) .
- Blood rush to face, distorted (epilepsy).

other medicine :

- Aconitum Napellus.
- Arsenicum album.
- Phosphorus.
- Gelsemium.
- Apis mellifica .

IV. CONCLUSION

Nipah virus is a zoonotic virus, an emerging infectious disease caused by a virus of the family paramyxoviridae, genus henipavirus. It can spread between animals and human. Has been a major cause of encephalitis outbreak with high mortality.

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