

Japanese Encephalitis

Introduction:

Japanese encephalitis is a viral infection transmitted by mosquito bites. It causes severe inflammation of the brain. The disease is prevalent in larger parts of Asia. Irrigation of the semi-arid lands leads to an increase in the mosquito population as a result of flooding. These infected mosquitoes transmit the virus to humans thus spreading the infection. The disease cannot spread from human to human. The incubation period of the virus is about 4-14 days.

Cause:

Japanese encephalitis is caused by a virus belonging to the family Flaviviridae. This virus hosts domestic animals such as pigs, horses, donkeys, etc. and multiplies within them without causing any infection. The mosquitoes become infected with the virus on biting the infected animals. On turn, the mosquitoes transmit the infection to humans. The virus eventually affects the central nervous system of the individual causing inflammation of the membranes around the brain.

Symptoms:

Most people affected with encephalitis have mild flu or influenza like symptoms. In severe forms of the infection, the symptoms are:

- High fever.
- Severe headache.
- Neck stiffness.
- Diarrhoea.
- Seizures.
- Change in consciousness.
- Tremors (uncontrolled shaking of certain body parts).

- Difficulty in controlling the eye movements or facial muscles.
- Bulging of the eye ball due to an increased pressure inside the brain.
- Coma.

In children, gastrointestinal pain and dysfunction occurs in the earlier phase of the infection. Acute flaccid paralysis is a poliomyelitis like paralysis in one or more limbs that occurs in spite of a normal level of consciousness.

Diagnosis:

Diagnosis of Japanese encephalitis is generally made based on a complete review of the individual's history, signs and symptoms accompanied with a few laboratory tests such as a Japanese encephalitis virus-specific IgM-capture ELISA test or Enzyme-Linked Immunosorbent Assay (a laboratory test which detects the presence of antibodies or proteins that are formed in reaction to a foreign substance in the body). This test is carried on cerebro spinal fluid or serum of the individual.

Scans such as CT and MRI are carried out in case the infection spreads to the brain.

Treatment:

The treatment for Japanese encephalitis is generally symptomatic and managing complications. Symptomatic treatments such as treating the raised temperature, swelling in the brain, etc. is carried out with the help of specific medicines.

Prevention:

Japanese encephalitis can be prevented by avoiding mosquito bites by using mosquito repellents, using insecticide treated mosquito nets, wearing clothes covering almost every part of the body, getting vaccinated while visiting affected areas. The Japanese encephalitis vaccination is recommended for individuals planning to travel to an infected area and staying for a month or

so. It can be given in individuals of 17 years of age or older. The vaccine requires two doses given at the interval of 28 days along with a booster dose after one year.

Complications:

If left untreated Japanese encephalitis can lead to mild disabilities causing shaking of the arms, muscle weakness, paralysis of a limb to severe disabilities such as stiffness of the arms and legs, difficulty in learning new things, etc.

More Information:

Medline Plus (2011), *Japanese Encephalitis Vaccine*, [Online], Available: <http://www.nlm.nih.gov/medlineplus/druginfo/meds/a607019.html>, [Accessed: 2013, April 16].

NHS Choices (2012), *Japanese Encephalitis*, [Online], Available: <http://www.nhs.uk/Conditions/Japanese-encephalitis/Pages/Introduction.aspx>, [Accessed: 2013, April 16].

National Network for Immunization Information (2012), *Japanese Encephalitis*, [Online], Available: <http://www.immunizationinfo.org/vaccines/japanese-encephalitis>, [Accessed: 2013, April 16].

World Health Organisation (2013), *Water-Related Diseases*, [Online], Available: http://www.who.int/water_sanitation_health/diseases/encephalitis/en/, [Accessed: 2013, April 16].



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