**Japanese encephalitis is a mosquito-borne viral infection. It is the leading cause of viral encephalitis in Asia. Humans can get the disease when they are bitten by a mosquito that carries the virus. Japanese encephalitis virus cannot be transmitted from one person to another.**

The Japaneseencephalitis virus (JEV) is related to the viruses of St. Louis encephalitis and Murray Valley encephalitis, to the West Nile virus and to dengue and yellow fever.

Encephalitis is an inflammation of the brain which can cause fever, headache, confusion, seizures, and, in some cases, death.

Fewer than 1% of people infected with the virus develop symptoms. However, according to the World Health Organization (WHO), it is fatal for 30% of those who do develop symptoms.

The number of fatalities from Japanese encephalitis is estimated to be between 13,600 and 20,400 a year.

Japanese encephalitis is a virus of the flavivirus family. It is passed on by the Culex mosquito.

Japanese encephalitis is carried by mosquitoes.

Not only humans are affected by the virus. Mosquitoes can also infect horses and pigs, leading to encephalitis in horses and abortion in pigs.

Wild birds are probably the natural hosts, and mosquitoes are the vectors. A vector does not cause a disease but passes it on.

When mosquitoes infect an animal, the animal can become a carrier of the virus. When other mosquitos feed on these newly infected animals, they take up the virus and can go on to infect other animals or humans.

People in rural areas where the virus is common are at highest risk. Japanese encephalitis does not usually happen around towns and cities.

It is more likely to affect children, because adults in areas where it is endemic generally become immune as they get older.

**Where is Japanese encephalitis found?**

Japanese encephalitis is most common in Japan but it is thought to be widespread throughout Southeast Asia.

China, Korea, Japan, Taiwan, and Thailand have had outbreaks in the past, but they have mainly controlled the disease by vaccination. Vietnam, Cambodia, Myanmar, India, Nepal, and Malaysia still experiences epidemics occasionally.

There have been cases in northern Australia, but in mainland Australia, the risk is considered low.

In the United States, a few cases of infection have been reported in people who have traveled to places where the disease exists.

Overall, the chance of catching Japanese encephalitis while traveling in Asia is extremely low, but it depends on the season, where the person is traveling, how long for, and what they will be doing.

The risk is highest during the transmission season, but this varies from place to place.

In temperate regions, transmission is highest during the summer and early fall, roughly from May to September.

In subtropical and tropical areas, the season depends on the rainfall and patterns of bird migrations.

In some tropical areas, transmission may occur at any time of the year, depending partly on agricultural practices.

It is more common in areas where rice is grown and less likely in urban areas.

**What are the symptoms of Japanese Encephalitis?**

A person with Japanese encephalitis will probably have no symptoms at all, but if there are symptoms, they will appear 5 to 15 days after being infected.

A person with a mild infection may have only a fever and a headache, but in more severe cases, symptoms can develop quickly.

There may be a headache, high fever, tremors, nausea, vomiting, stiff neck and spastic paralysis. Signs of altered mental status include stupor, disorientation, and coma. Children may have convulsions. There may be swelling of the testicles.

If the brain is involved, life-long neurological defects can result, such as deafness, uncontrollable emotions, and weakness on one side of the body.

The chance of survival varies, but children are most at risk.

**How does Japanese encephalitis spread?**

Mosquitoes become infected by feeding on wild birds and domestic pigs that have been infected with the virus.

The mosquitoes then pass the virus to humans and animals. Birds and other animals cannot transmit the infection to humans. Only infected mosquitoes can pass it on.

The mosquitoes mainly live in agricultural and rural areas. Their larvae breed in pools of water, for example, flooded rice fields.

**Diagnosing Japanese encephalitis:**

To diagnose Japanese encephalitis, the doctor will take into account the patient's symptoms, where they live, and anywhere they have been visiting. This can help to determine the likelihood of having the disease.

If a doctor suspects encephalitis, the patient will undergo tests such as a computed tomography (CT) scan or magnetic resonance image (MRI) of the brain.

A lumbar puncture or spinal tap may be used to draw fluid from the spine. The results can show which virus is causing the encephalitis.

Immunofluorescence tests can detect human antibodies. The antibodies show up after being tagged with a fluorescent chemical.

**Treatment and prevention of Japanese encephalitis**

There no treatment or cure for Japanese encephalitis, but there is a safe and effective vaccine that can prevent infection.

Travelers should take precautions in areas where Japanese encephalitis is endemic.

The vaccine is recommended for people traveling to areas where the disease is endemic, for those on short-term trips lasting less than a month, for people visiting areas where there is an outbreak, and for those participating in outdoor activities.

Once a person has the disease, treatment can only relieve the symptoms. Antibiotics are not effective against viruses, and no effective anti-viral drugs have been discovered.

People who spend time outdoors in rural areas should use protective clothing, bed nets, and repellents, and they should sleep in air-conditioned or well-screened rooms.

A person who is new to an area of prevalence does not usually have a natural immunity to the Japanese encephalitis virus.

This means that travelers of all ages are more vulnerable to infection than those who have always lived in an area where the disease is found.

In the case of an outbreak, people who live in affected communities should remove pools of standing water, where mosquitoes can breed, and they should use an insect repellant. The most effective insect repellants contain a chemical called DEET.