

Japanese Encephalitis



Causative agent

Japanese encephalitis is a mosquito-borne disease caused by the Japanese encephalitis virus. The disease occurs mainly in the rural and agricultural areas of Asia and the Western Pacific Region, especially in hot seasons. In the subtropics and tropics, transmission can occur year-round, often with a peak during the rainy season.

Clinical features

Most infections occur without apparent symptoms or with mild symptoms such as fever and headache. More severe infection is characterised by rapid onset of headache, high fever, neck stiffness, impaired mental state, coma, convulsions (especially in children), spastic paralysis and even death.

Mode of transmission

Japanese encephalitis virus is principally transmitted by the bites of infected mosquitoes. The principal type of mosquito that transmits the disease is the *Culex* species, especially *Culex tritaeniorhynchus*. The mosquito breeds where there is abundant water such as rice paddies and becomes infected by feeding on pigs and wild birds infected with the Japanese encephalitis virus. The infected mosquito transmits the virus to humans and animals while biting. While Japanese encephalitis is principally mosquito-borne, a human case transmitted by blood transfusion was recorded in Hong Kong. In addition, overseas scientific literature showed that, based on the nature of similar flaviviruses, organ transplant is also considered to be a potential mode of transmission.

Incubation period

Symptoms usually start around 4 – 14 days after being infected.

Management

There is no specific treatment for this disease. Supportive therapy is the mainstay of treatment. The case-fatality rate can be as high as 30% among those with symptoms. Of those who survive, 20% – 30% suffer permanent intellectual, behavioural or neurological problems such as paralysis, recurrent seizures or inability to speak.

Prevention

To prevent contracting the disease, one should take general measures to prevent mosquito bites and avoid going to rural areas from dusk till dawn when the mosquitoes spreading this virus are most active. People planning to travel to areas in which Japanese encephalitis is endemic should take special note.

Vaccination for Japanese Encephalitis

Japanese encephalitis vaccination is safe and effective in preventing the disease. Vaccination for Japanese encephalitis is available in Hong Kong but it is generally not recommended to members of the general public. Vaccination is recommended for travellers who plan to stay one month or longer in endemic areas, particularly in rural areas; and for short-term (less than one month) travellers if they plan to have significant/ extensive outdoor or night-time exposure in rural areas during the transmission season of the disease. For further information on Japanese encephalitis vaccination and outbreak news in other countries, please visit the Hong Kong Travel Health Service website at <https://www.travelhealth.gov.hk/eindex.html>

General measures on preventing mosquito-borne diseases

(I) Prevention of mosquito bites

1. Wear loose-fitting, light-coloured, long-sleeved tops and trousers.

2. Use diethyltoluamide (DEET)-containing insect repellent on exposed skin and clothing, always follow label instructions.

- Pregnant women and children of 6 months or older can use DEET-containing insect repellent.

3. Take additional preventive measures when engaging in outdoor activities:

- Avoid using fragrant cosmetics or skin care products

- Re-apply insect repellents according to instructions

- If both insect repellents and sunscreen are used, apply insect repellents after sunscreen



(II) Prevention of mosquito proliferation

1. Prevent accumulation of stagnant water

- Change the water in vases once a week
- Avoid using saucers underneath flower pots
- Cover water containers tightly
- Ensure air-conditioner drip trays are free of stagnant water
- Put all used cans and bottles into covered dustbins

2. Control vectors and reservoir of the diseases

- Store food and dispose of garbage properly

For more information about control and prevention of mosquito breeding, please visit the website of the Food and Environmental Hygiene Department (FEHD) at https://www.fehd.gov.hk/english/pestcontrol/handbook_prev_mos_breeding.html

(III) Advice for travelers

1. Take preventive measures to avoid mosquito bites. For children who travel to countries or areas where mosquito-borne diseases are endemic or epidemic and where exposure is likely, children aged 2 months or above can use DEET-containing insect repellents with a concentration of DEET up to 30%. For details about the use of insect repellents and the key points to be observed, please refer to 'Tips for using insect repellents' (<https://www.chp.gov.hk/en/features/38927.html>).
2. If going to affected areas or countries, especially during rainy seasons, arrange medical consultation at least 6 weeks before the trip, and have extra preventive measures to avoid mosquito bites.
3. If travelling in endemic rural areas, carry a portable bed net and apply permethrin (an insecticide) on it. Permethrin should NOT be applied to the skin. Seek medical attention promptly if feeling unwell.
4. If you have symptoms of Japanese encephalitis or are feeling unwell during your visit abroad or after return, seek medical advice immediately and provide travel details to the doctor.



Centre for Health Protection Website www.chp.gov.hk

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