



JAPANESE ENCEPHALITIS

Map: www.who.int/ith - disease distribution maps

Japanese Encephalitis is a serious viral disease in Asia. It involves an influenza-like condition that can lead to very serious cerebral inflammation (diminished consciousness, paralysis, coma) in a few days. The ratio of symptomatic to asymptomatic cases varies between 1 in 50 and to 1 in 1000 infections. The mortality rate among the symptomatic cases with signs of inflammation of the brain is approximately 25%. If a patient survives the illness, there is a 30% chance of neurological and/or psychiatric residual damage. There is no treatment for the virus.

The infection is transmitted exclusively by *Culex mosquitoes*. These mosquitoes bite from dusk until dawn. In endemic areas only 1 to 3% of the *Culex* mosquitoes are infectious. Pigs and certain bird species form the reservoir of the virus.

The disease is endemic in **rural** areas of **Southern and South-east Asia** (from India to Japan), especially in parts of Bangladesh, Burma (Myanmar), Brunei, Cambodia, China, India, Indonesia (only on Java, Bali, Irian Yaja and Borneo; not on the other islands), Hong Kong, Japan, Thailand, Vietnam, Nepal (in the Terai, the lowland areas below 765 m), the Philippines, Korea, Laos, Singapore, Sri Lanka (only on the extreme northern tip of the island), Malaysia and a small region of Pakistan. The virus recently crossed the strait of Torres between Papua New Guinea and the extreme North of Queensland (Australia).

The infection occurs seasonally in most areas, mainly from April-May to October-December. The incidence reaches its peak in the temperate climate zones around the end of the summer and the beginning of autumn; in the tropical climate zones at the beginning of the monsoon. However, in a number of areas transmission is possible whole year, particularly in the three archipelagos (Philippines, Indonesia, Malaysia), but also elsewhere, depending on local ecological factors. The disease occurs especially in rural areas, where humans and pigs live in close proximity, and particularly in areas where there are rice paddies, as these make ideal breeding grounds for the mosquitoes. Infections can very occasionally occur on the outskirts of the big towns. In several endemic countries the number of cases has been considerably reduced thanks to an efficient vaccination policy and vector control.

In general terms, the risk for travellers to the Far East is extremely low (less than 1 in 1,000,000 tourists who have been travelling for 1 month). Depending on the season, the destination and travel conditions, the risk can increase to up to 1 in 5,000 per month.

PREVENTION

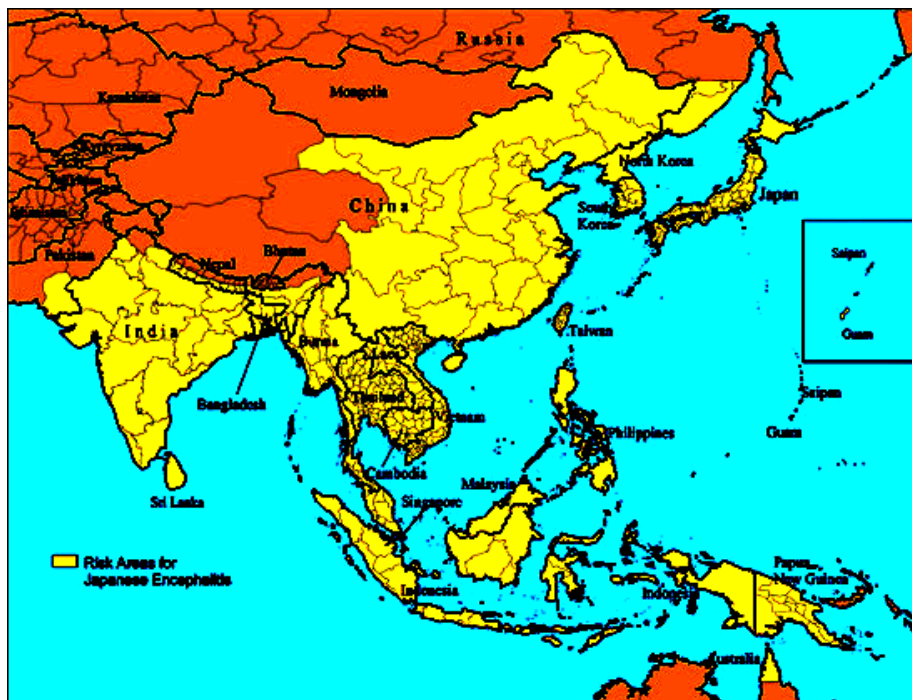
a) Vaccination

At present, the vaccine against Japanese encephalitis is only available at the international yellow fever vaccination centres. Since July 2009, a new inactivated vaccine, **Ixiaro**[®] (€83,28 ; 2x), is used at the Institute of Tropical Medicine for **adults (from the age of 18 years)**. The vaccination scheme consists of 2 injections in the upper arm muscle (1 ml) with an interval of 28 days. One single dose gives no sufficient protection. The first booster is administered after 12 to 24 months. No data are available about further boosters.

For **children (from 1-17 years)** the new vaccine is still in a test phase, but temporary results are very encouraging. In this age category one adult dose of Ixiaro[®] is administered to children from **4-17 years** and half a dose for children **1-3 years** (not yet registered for the moment, but this may change quickly). The vaccine will not be administered to children under the age of 1 year. For the moment the vaccine against Japanese encephalitis is only available in the international yellow fever vaccination centres.

Vaccination is not recommended for ordinary tourists or business travellers. Some controversy exists over the correct indication for other categories of travellers. Most specialists agree that vaccination is generally only recommended for individuals travelling for at least 3-4 weeks through rural areas (staying in villages and farms, especially in areas where wet rice fields are located next to pig breeds). In any case, the vaccination should be discussed with people going to live in rural areas or in towns. It is therefore best to first consult the experts about the indications. For example, in the last few years there have been reports of an increase in cases of Japanese Encephalitis in the Nepalese Terai and even in the Katmandu valley. Vaccination has been advised by some authorities for a stay between August and October (1997).

b) Protective measures against mosquito bites, such as for malaria, are an effective alternative!



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