



West Nile Encephalitis

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History

West Nile fever virus (Flavivirus, family Flaviviridae) was first isolated from the blood of a febrile Ugandan in 1937. It was subsequently shown to have a very wide area of distribution that included most of Africa, southern Europe, the Middle East, and even parts of the Far East. In its natural cycle, the virus is transmitted primarily between pigeons and crows by *Culex* mosquitoes. Classically West Nile fever virus causes a non-specific febrile illness, and until recently nervous system manifestations were considered a rarity. However, in recent years the epidemiology has changed with the virus spreading to new areas and causing different disease patterns. In 1996 an epidemic of West Nile encephalitis affected several hundred people in Romania, and in 1999 the virus caused an epidemic in New York. Although there were only around 60 cases, this outbreak of West Nile encephalitis caused considerable alarm because the virus had not previously reached the Americas, or indeed anywhere in the Western hemisphere. How it arrived there is the subject of much speculation.

West Nile virus is an “arbovirus”

Viruses that are transmitted from one animal host to the next by insects (arthropods) are known as ‘arboviruses’ (arthropod-borne). They have evolved from a variety of backgrounds, belong to different families, and cause a wide spectrum of diseases. Viruses comprise small pieces of genetic material (nucleic acid) whose sole purpose in life is to self-replicate. Because they don’t have all the enzymes they need to do this, they have to muscle into ‘host’ cells, and borrow bits of their machinery. The host develops an immune response to fight off this unwanted invasion, and the rest follows as a consequence of this eternal struggle.

Infection

People can get infected from the bite of a mosquito that is infected with the virus. The virus is not transmitted from person to person. There is no evidence that a person can get the virus from handling live or dead infected birds. However it is still recommended that barehanded contact with dead animals is avoided.

The incubation period of a West Nile virus infection is usually 5 - 15 days.

Mild infections are common and include fever, headache and body aches, often with skin rash and swollen lymph glands.

Encephalitis results when the virus invades the central nervous system destroying the brain substance with accompanying inflammation. The clinical features range from muscle weakness and paralysis; mild confusion and behavioural changes (which may be mistaken for hysteria); convulsions (fits) and deep coma.

Treatment and Prevention

There is no specific treatment for West Nile virus. Current management consists of treating the complications of the disease such as high fever and aches, low blood pressure, blood loss, convulsions, or raised intracranial pressure.

The simplest preventative measure is to avoid bites from the mosquitoes that carry the virus. This means wearing long sleeves and trousers, especially during the evening when the mosquito bites and avoiding areas where stagnant water can be found, mosquito larvae need still water to develop. For further protection use an insect spray containing at least 30% DEET (N,N-diethyl-3-methylbenzamide) and sleep under bed-nets.

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Summary of Advice for Travellers

Minimise the risk of mosquito bites by wearing appropriate clothing, using DEET insect repellent and impregnated bed nets.

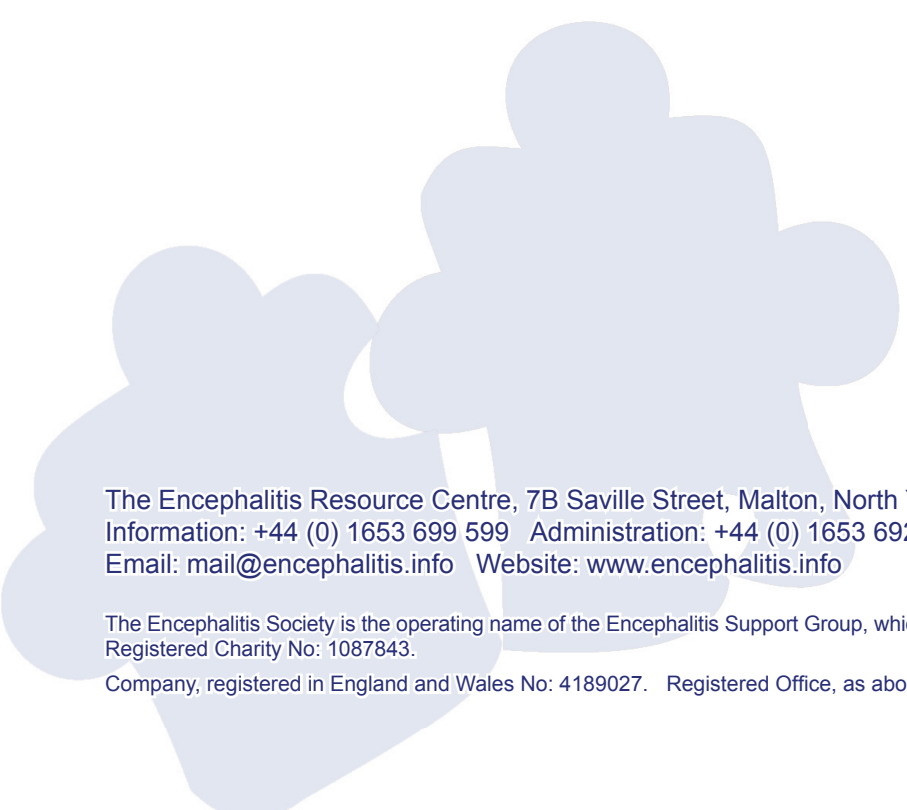
There is no vaccine at present to protect against West Nile virus.

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