



Legend:
 Yellow: Areas infested with *Aedes aegypti*
 Red: Areas with *Aedes aegypti* and dengue epidemic activity

Avoiding the risk of Dengue Fever



Background



Dengue fever is a viral condition transmitted by mosquitoes to humans. The disease is widespread in the tropics and subtropics and occurs in areas below about 2000ft commonly in Asia, coastal tropical Africa and Latin America between 30°N and 40°S. Approximately 100 million cases occur each year throughout the world.

Transmission

The disease is transmitted to humans through the bite of the mosquito. In most cases the mosquitoes which transmit Dengue tend to bite during the daytime. This is different to the normal biting habits of many other mosquitoes which prefer to bite at the cooler times of the day (normally around dawn and dusk). They also are easily found in major urban centres and so those staying in cities may also be at risk.

Protection

No vaccine is available against Dengue Fever and so the main form of defence rests in protection against mosquito bites. For further information please refer to 'Protection against Insect Bites' by the Tropical Medical Bureau.

Types of Disease

There are four different types of Dengue virus recognised at this time. These are referred to as serotype 1, 2, 3 and 4. These various types are found in different regions of the world and following infection with one serotype the infected individual will maintain a long-standing immunity against this particular version of the disease. Unfortunately no protection will be gained against one of the other strains of the disease.

initial Course of the illness

In an individual bitten by an infected mosquito there will usually be no symptoms (apart from the bite) for between 2 to 7 days. During this incubation period the disease is usually multiplying actively in the nearest lymph glands before invading into the deeper organs. The disease usually then presents with an abrupt onset of high fever (40°C). This fever tends to spike and the patient typically develops severe muscle pains and other significant 'flu symptoms. Joints are usually very painful to move and this gives rise to the other name for the condition - "**Break Bone Fever**". An early soft coloured skin rash may be seen and the patient typically will have a splitting headache, be very unwell and have to lie down often in a darkened room. Meningitis may be considered as a possible diagnosis under these circumstances.

Second phase of illness

After a few days the patient will begin to recover and then frequently become ill again with the second phase of the illness. This biphasic pattern is often seen and helps in making a diagnosis. A more significant skin rash occurs (which blanches on pressure) and the patient's joints may become somewhat swollen and uncomfortable. Headache and significant lethargy/collapse are also commonly seen at this time. In most cases the severe stages of the disease last for about 2 to 3 weeks but most of those infected will recover. However, this recovery stage may last for many months and frequently patients will experience significant debility. Mental depression is common.

Dengue Haemorrhagic Fever (DHF)

This is the extremely severe form of the disease and causes at least 45,000 deaths each year throughout the world. It is very common in South-East Asia but more recently has been recognised in both the Pacific and the Caribbean region. At this time DHF has not been recognised in Africa however this may change. The actual cause of the severe form of the disease is still not fully recognised. It has been suggested that infection with different forms of the disease within a six month period may cause a severe sensitivity of the individual leading to the very pronounced effects. Basically with DHF the blood vessels of an infected individual lose their integrity and allow body fluids to ooze out into the surrounding tissues. This rapidly leads to profound shock, high temperatures and a severe skin rash. Death commonly occurs with this manifestation of the disease.

Diagnosis

Dengue is mainly diagnosed from the patient's history of exposure, in a region where the disease is recognised, coupled with the clinical signs (headache, fever, joint pains and skin rash). There are a number of other similar conditions (Chikungunya Virus, Ross River Encephalitis etc) so confirmation requires a blood test to show the presence of antibodies in the patient. The result may not be available for some weeks after symptoms commence.

Current Outbreaks

Most of the recent reports are from SE Asia (tourist resorts in Viet Nam, Thailand etc) and also throughout much of the Caribbean and along the Brazilian coast down as far as at least Rio de Janeiro. The disease is very rare in Africa.

What to do

If you believe you may have been exposed to the disease and are developing symptoms you should obtain medical advice urgently. *Don't use Aspirin type drugs to control any symptoms as these can make you significantly worse.* Fluid balance must be maintained and the temperature may need to be controlled. In some regions it may be difficult to differentiate the disease from Typhus and so the doctors may consider using tetracycline antibiotics until the blood results are through.

Avoiding a second infection

Patients who have been correctly diagnosed with Dengue Fever should remember that a second exposure (probably within a 6 month period) may lead to the more severe, and often fatal, form of the disease (DHF). In general it is wise not to consider unessential re-exposure for at least this critical 6 month period where at all possible. If this option is not present then patients should ensure constant protection against mosquitoes at all times throughout the day and night - even when travelling in major urban centres.

General

Please remember that the information contained in this leaflet is of a very general nature. Patients should always seek urgent competent medical advice well in time before they travel abroad. On return home if in any doubt about any aspect of their personal health this should be reported to their travel health advisor. The Tropical Medical Bureau's web pages provide up-to-date information on disease outbreaks and travel related news stories from throughout the world www.tmb.ie

National Travel Vaccine Appointment Tel 1-850-48 76 74

Web Address: www.tmb.ie

This leaflet has been prepared using information supplied from W.H.O. Center for Disease Control (US) and other International sources.

Dengue/TMB/modified3May2006

- ✓ Travel Accessories
- ✓ Tropical Diagnostic Laboratory
- ✓ Tropical Disease Screening Centre
- ✓ W.H.O. registered Yellow Fever Vaccination Centre
- ✓ International Vaccination and Malaria Advice Centres

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