

BITE-SIZE GUIDE

In this issue Dr Chris King gets under the skin of malaria, one of the globe's biggest killers.



Malaria is a parasitic infestation by the genus *Plasmodium* which is transmitted to humans through the bloodstream by the female anopheles mosquito in a cycle of infected blood from a previously bitten person to another, as they are bitten. Mosquitoes usually bite between dusk and dawn.

Malaria has a huge impact on global health with an estimated 300 million people in 90 different tropical and sub-tropical countries being affected on an annual basis. The number of deaths worldwide per year is in the order of one million. Ninety per cent of these occur in sub-Saharan Africa where the

'VFRs' (visiting friends and relatives). These tend to be migrants from low-income countries who reside in high-income countries and who return to their country of ethnic origin to visit friends and relatives. Their friends and relatives also travel back to see them.

VFRs are less likely to present for pre-travel advice and many may not complete immunisation schedules. Children in this group are particularly at risk and there may be the added problem of language difficulties.

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mosquito *Plasmodium falciparum* causes more severe symptoms. Malaria is the biggest killer of under five year olds where 40 per cent of the health budget in these countries is spent.

The risks

Each year one billion people cross international frontiers. Travellers to tropical and exotic destinations are increasing which means that the malaria epidemic is expanding.

Travellers who do not seek pre-travel advice are at the greatest risk. One survey has suggested that only one in three travellers to malaria-affected areas was taking preventive medication and only 50 per cent had taken pre-travel advice.

One group that aircrew will come into contact with on a daily basis are those visiting friends and relatives, so called

In 2008 there were 1,370 cases of malaria in the UK acquired abroad and six deaths; 83 per cent had not taken any antimalarial medication and 77 per cent were visiting friends or relatives.

With aircraft being the mode of transport, one can see that aircrew are at a crossroads of malaria transmission. It is important that they are aware of the risks to themselves at their foreign destinations as well as being aware of the fact that any person travelling from a malaria zone who presents with a fever may have malaria.

All such individuals should be encouraged to seek medical advice as soon as possible after landing.

The symptoms

Other than fever, symptoms include headache, chills, muscle pain and abdominal pain. Severe symptoms include hypoglycaemia (low blood sugar), jaundice and coma with possible fatal consequences.

Symptoms can occur anything from seven days to several

weeks after being bitten by an infected mosquito.

Diagnosis is by looking at a smeared blood film under the microscope and visualising the malarial parasites. Oral medication is available for treatment and all patients with malaria should be treated in hospital as soon as possible.

In spite of all this gloom and doom, malaria is by and large manageable. The cornerstone is prevention, and this is by using mosquito nets, repellents, long sleeves and long trousers and preventive medication.

The prevention

- **The mainstay of prevention in the aviation world for adults is Malarone which should be taken once daily starting 24 to 48 hours before entering the endemic zone, continuing during stay and for seven days after leaving. It is recommended that it is not taken for more than 28 days continuously.**
- **Chloroquine and Paludrine are permitted in combination, but these have been superseded by Malarone.**
- **Doxycycline is permitted by the CAA but can cause photosensitivity (skin reaction in bright light), which could be a problem for aircrew.**
- **The CAA does not permit Lariam as it can cause heart arrhythmias and other problems.**
- **In pregnancy special care with these medications is required.**

In summary, remember the ABC of malaria:

Awareness of risk i.e. destination.

Bite prevention – nets, repellents, and long-sleeved clothes and trousers.

Chemoprophylaxis – antimalaria preventive medication.

Diagnosis – seek early medical attention if there are any suggestive symptoms. ■