

EMERGENCY MALARIA TREATMENT

Rapid medical attention is required for any **rise in body temperature** (above 38°C in the armpit) lasting longer than 24 hours that occurs during or up to three months after a stay in an area where malaria occurs, must be regarded as an attack of malaria, until proven otherwise. Make sure that you always have a thermometer to hand and regularly check your body temperature whenever you feel unwell, even if you think that you do not have a high temperature! Many infectious diseases in fact begin with the same symptoms (influenza-like feeling, with or without fever), which means that if you have a high temperature, the possibility of other infectious diseases should also be considered. You should therefore always seek medical help and a thick smear examination and a thin blood smear should be carried out. If there are **warning symptoms** such as fever lasting longer than 3 days or the urine is of a dark colour or if jaundice, shortness of breath or diminished consciousness occur, urgent admission to hospital is indicated.

The following treatment schemes are effective. The use of emergency treatment on one's own initiative after returning home may lead to dangerous errors and is to be absolutely discouraged!

SCHEME A.

A new effective medicine for uncomplicated malaria is the product **Malarone**[®] (contains two active ingredients in one tablet: 250 mg atovaquone + 100 mg proguanil). This is on the market in Belgium (price approximately 43.38 Euro). One carton contains 12 tablets. Children weighing over 40 kg and adults take 4 tablets in one dose per day, on three consecutive days at the same time each day, with some food

For children (above 11 kg bodyweight) a modification of the dose is necessary:

- 11-20 kg: 1 tablet/day, 3 consecutive days
- 21-30 kg: 2 tablets/day in one dose, 3 consecutive days
- 31-40 kg: 3 tablets/day in one dose, 3 consecutive days
- > 40 kg: 4 tablets/day in one dose, 3 consecutive days

SCHEME B

QUININE (usually capsules of 500 mg quinine sulphate): for an **adult** 1 dose of 500 mg quinine every 8 hours (hence 3 per 24 hours), for at least 4 days. The dose for children is 10 mg per kg bodyweight every 8 hours, with a maximum of 500 mg per dose. As the fever

diminishes slowly, it is best to continue taking the quinine for a few days longer after this, at the rate of 1 dose every 12 hours. In Southeast Asia and in the Amazon region you should always take quinine for 7 days.

You also start taking (waiting until the 3rd day if you have a tendency to vomit) **DOXYCYCLINE (e.g. VIBRAMYCINE®, VIBRATAB®, DOXYLETS®)** two 100 mg tablets (= 3.5 mg/kg) on the 1st day, followed by one 100 mg tablet (= 2 mg/kg) per day for the next 6 days. Not for children under 8 years old and not for pregnant women.

- This combination is still 100% effective in Africa and Latin America and very nearly 100% in Asia.
- Quinine sulphate must be prepared by the pharmacist. If the capsules are packed in a tightly closed, brown glass bottle with a drying cap(sule), they can be kept for **1 year**. This time is much shorter if the capsules are kept just in a carton.
- If you attempt to treat the malaria attack with quinine alone (e.g. only with Quinimax®) there is a small but real risk of getting a repeat attack of malaria later, as this drug does not always eliminate all the parasites.
- Doxycycline by itself is too weak as an antimalaria agent. It must therefore **always be combined with quinine**.
- If you vomit the medication, quinine must be administered via intravenous infusion for a few days, in the same dose, every 8 hours, each dose being given over 4 hours by drip (as quinine dihydrochloride solution). As soon as you are better, quinine is taken orally, supplemented with doxycycline.
- If an infusion is not possible, quinine can be given intramuscularly (in the thigh muscle), in the same dose, every 8 hours (= 3 injections per day). (NEVER INJECT DOXYCYCLINE / QUININE OR ALLOW THEM TO BE INJECTED INTRAVENOUSLY WITH A SYRINGE, AS WITH THIS THERE IS A RISK OF CARDIAC ARREST OR FATAL LOWERING OF BLOOD PRESSURE).
- Ingestion of doxycycline can elicit cutaneous hypersensitivity reactions upon exposure to sunlight. You should therefore be careful not to get exposed to sunlight.
- Doxycycline is not permitted for **children under 8 years old** or for **pregnant women** (due to possible tooth discoloration). If no alternative is available, quinine can continue to be given to this group of patients for 7 to 10 days.

NOTE

Halofantrine (HALFAN ®): is no longer used as emergency treatment!

Mefloquine (LARIAM®)

The World Health Organization recommends the following dose for an average adult taking Lariam® as emergency treatment: two 250 mg tablets, followed by two 250 mg tablets after 8 hours. An adult weighing less than 60 kg takes only 3 tablets in total (first 2, then 1). This dose is smaller than that stated in the package insert. This dose adjustment is made because Lariam® (in a much higher dose than for prophylaxis) frequently has unpleasant side effects (gastrointestinal upset, dizziness, excitation, cardiac palpitations, nightmares and insomnia), which occur less frequently with this lower dose. You should of course also seek adequate help as quickly as possible for the further treatment of (suspected) malaria. If you are seriously ill, it is also advisable to be treated with QUININE for only a few days. The administration of Lariam® is then delayed for 12 hours after the last dose of quinine.

All of this is in itself sufficient reason for not taking Lariam® as curative self-medication if you are not under medical supervision !

Artemisinin and its derivatives are now available in various countries in the Far East (including Vietnam, Thailand and Burma), as well as in a number of countries in Sub-saharan Africa. Brand names include artemether + lumefantrine = Co-artem ® (Africa) / Riamet® (in Switzerland); artesunate = Artenam® / Arinate® (in Africa, though there are many other local brand names). None of these products is yet registered in Belgium. These very effective medicines may replace quinine in the various cited combinations for treatment of resistant malaria. The dose for Co-artem/Riamet® is 4 tablets at the time of diagnosis, 4 tablets 8 hours later, and subsequently 4 tablets every 12 hours over a further 2 days. The dose for Artenam / Arinate® is 200 mg on the first day, followed by 100 mg per day for the next 4 days. When this medicine is used alone there is a small risk of relapse. If relapse occurs, the combination of doxycycline, or even mefloquine with for example quinine, is recommended (certainly in the Far East).