

Treatment of malaria

Uncomplicated malaria

Uncomplicated malaria can usually be treated with oral therapy. Initial hospital treatment is recommended for malaria caused by *Plasmodium falciparum* and *Plasmodium knowlesi*.

Artemether+lumefantrine (Riamet; an artemisinin-based combination) is the treatment of choice for uncomplicated malaria. Chloroquine is no longer recommended for the treatment of malaria because high-grade chloroquine-resistant *P. falciparum* malaria has spread to most malaria-endemic areas of the world, and high-grade chloroquine-resistant *Plasmodium vivax* malaria occurs in several areas of the Asia-Pacific region, particularly in Papua New Guinea and Indonesia.

Do not use atovaquone+proguanil (Malarone) to treat malaria if it was used for prophylaxis.

For uncomplicated malaria, use:

artemether+lumefantrine tablets 20+ 120 mg

adult and child more than 34 kg: 4 tablets per dose (child 5 to 14 kg: 1 tablet; 15 to 24 kg: 2 tablets; 25 to 34 kg: 3 tablets) orally with fatty food or full-fat milk (to ensure adequate absorption of lumefantrine), at 0, 8, 24, 36, 48 and 60 hours, making a total adult dose of 24 tablets in 6 doses.

or

atovaquone+proguanil tablets 250+ 100 mg (adult formulation)

adult and child more than 40 kg: 4 tablets per dose (child 11 to 20 kg: 1 tablet; 21 to 30 kg: 2 tablets; 31 to 40 kg: 3 tablets) orally with fatty food or full-fat milk (to ensure adequate absorption of atovaquone), daily for 3 days.

or the combination of

quinine sulfate 600 mg (adult less than 50 kg: 450 mg) (child: 10 mg/kg up to 600 mg) orally, 8-hourly for 7 days

plus either

doxycycline 100 mg (child 8 years or older: 2 mg/kg up to 100 mg) orally, 12-hourly for 7 days (which can start after day 1 of quinine therapy)

or (for pregnant women or children younger than 8 years)

clindamycin 300 mg (child: 5 mg/kg up to 300 mg) orally, 8-hourly for 7 days.

Note that artemisinin resistance has been reported in some areas of the Greater Mekong subregion (Thailand, Vietnam, Cambodia, Laos and Myanmar) resulting in reduced efficacy of artemisinin-based combination therapy against *P. falciparum*. In patients with *P. falciparum* malaria acquired from this region who respond slowly to artemether+lumefantrine (i.e. persisting parasitaemia after 72 hours of therapy), it is recommended to switch to oral quinine sulfate plus either doxycycline or clindamycin as above, for 7 days.

Eliminating liver forms of *Plasmodium* spp.

P. vivax and *Plasmodium ovale* can exist as dormant parasites (hypnozoites) in the liver, which can reactivate to cause relapse of malaria. Concurrent additional treatment with primaquine is required for malaria caused by these species to eliminate hypnozoites.

For *P. vivax* infection, once G6PD deficiency has been excluded, use concurrently: **primaquine 30 mg** (child: 0.5 mg/kg up to 30 mg) orally, daily, or if nausea occurs 15 mg (child: 0.25 mg/kg up to 15 mg) orally, 12-hourly. Treat for a minimum of 14 days or, in adults more than 70 kg, until a total cumulative dose of 6 mg/kg is reached

For *P. ovale* infection, once G6PD deficiency has been excluded, use concurrently: **primaquine 15 mg** (child: 0.25 mg/kg up to 15 mg) orally, daily for 14 days. If a relapse of malaria occurs despite treatment with primaquine, seek expert advice.

Exclude glucose-6-phosphate dehydrogenase (G6PD) deficiency prior to the use of primaquine, as severe haemolysis may occur in these patients.

For severe malaria

Urgent treatment of severe malaria is essential if the patient has any of the following:

- any degree of altered consciousness, jaundice, oliguria, severe anaemia or hypoglycaemia,
- a parasite count above 100,000/mm³ (greater than 2% of red blood cells parasitised),
- the patient is vomiting or clinically acidotic.

Treatment in this circumstance requires intravenous artesunate (preferred if available) or intravenous quinine dihydrochloride.

For clinical enquires please contact the microbiologists on (07) 3377 8666.