Guidelines for Management of Adults Diagnosed with Malaria in the Emergency Department

Epidemiology and characteristics

6 species infecting humans: P. falciparum, P. vivax, P. ovale (2 species), P. malariae, P. knowlesi

P. falciparum and P. vivax account for the vast majority of cases

P. falciparum and P. knowlesi can cause severe malaria

P. vivax or P. ovale species have dormant liver-stage parasites ("hypnozoites") that may reactivate. Patients who have recovered from the first episode of illness with these species may suffer "relapses" after months or even years without symptoms.

Incubation period variable: 1–6 weeks

Fever paroxysm + headache are central features; myriad other symptoms possible (can be false localising)

Features of severe malaria

- Cerebral malaria – abnormal behaviour, impairment of consciousness, seizures, coma, or other neurologic abnormalities
- Prostration: generalised weakness so the patient is unable to sit, stand or walk without assistance
- Respiratory distress / tachypnoea
- Acute pulmonary oedema / acute respiratory distress syndrome
- Circulatory collapse / hypotension or shock
- Acute kidney injury
- Coagulation abnormalities
- Hypoglycaemia
- Metabolic acidosis
- Hyperlactataemia (lactate > 5 mmol/L)
- Haemolysis with severe anaemia (Hb < 70 g/L, packed cell volume < 20%) and haemoglobinuria
- Jaundice
- Hyperparasitaemia – more than 5% of red blood cells infected by malaria parasites for P. falciparum and 2% for P. knowlesi

⚠ **Severe malaria is a medical emergency and should be treated urgently and aggressively.**

Principles of Management

- **Refer patients with severe malaria to ICU early.**
- All patients infected with P. falciparum or P. knowlesi should be admitted to hospital (MAU) due to risk of deterioration.
- Patients who can be discharged home should be followed up either by their own GP OR in the ID outpatient clinic (referral to be sent only after discussion with the on-call ID Registrar or Consultant).

They all need:

- Daily parasite count until negative.
- FBC and malaria microscopy at 7 and 28 days after completion of therapy, to assess for recrudescence of malaria parasites.

Discharge letter to include any treatments given or started and follow-up requirements.

Treatment of Uncomplicated Malaria

- Check Therapeutic Guidelines for updates before initiating treatment
- Contact ID for specific advice – malaria is a complex disease and treatment often needs variation
- Uncomplicated malaria caused by P. falciparum or P. knowlesi carries a risk of rapid deterioration – treatment should be initiated as soon as possible, in hospital
- Atovaquone+proguanil should not be used if it was already taken as prophylaxis
- Recurrent infections with P. malariae have occurred after artemether+lumefantrine therapy, as have infections with P. falciparum acquired from the Greater Mekong Subregion (Thailand, Vietnam, Cambodia, Laos and Myanmar)
- Treatment regimens for uncomplicated malaria do not eliminate hypnozoites, which can occur with P. vivax and P. ovale infections

Medications

Artemether+lumefantrine 20+120 mg – 4 tablets PO at 0, 8, 24, 36, 48 and 60 hours

OR

Atovaquone+proguanil 250+100 mg – 4 tablets PO daily for 3 days

OR

Quinine sulfate 600 mg (adult less than 50 kg: 450 mg) PO 8-hourly for 7 days

PLUS EITHER Doxycycline 100 mg PO 12-hourly for 7 days (can start after day 1 of quinine therapy)

OR (for pregnant women)

Clindamycin 450 mg PO 8-hourly for 7 days

Treatment of Severe Malaria

Treatment is initiated in ED and continued on the ward.

Seek advice from ID for patients with severe P. falciparum malaria acquired in the Greater Mekong Subregion (Thailand, Vietnam, Cambodia, Laos and Myanmar), where the prevalence of artemisinin resistance is increasing.

Medications

Artesunate 2.4 mg/kg IV on admission and repeat at 12 hours and 24 hours (then once daily until the patient has clinically improved and can tolerate oral therapy)

OR (if parenteral artesunate is not immediately available)

Quinine dihydrochloride loading dose: 20 mg/kg IV over 4 hours, followed by (starting 4 hours after the loading dose is completed): 10 mg/kg IV over 4 hours, 8-hourly until the patient has clinically improved and can tolerate oral therapy

AND – Adjunctive therapy with ceftriaxone 2 g IV and paracetamol is recommended

⚠ **Check requirements for quinine administration – side effects are common.**

Reference: Therapeutic Guidelines 2025. Antibiotic. Malaria. *Guideline designed by Dr Ioana Vlad (ED) & Dr Eric Chu (ID) – July 2026*