



MONOGRAPH

Primaquine Monograph - Paediatric

Scope (Staff):	Medical, Pharmacy, Nursing
Scope (Area):	All Clinical Areas

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this [DISCLAIMER](#)

QUICKLINKS

Dosage/Dosage Adjustments	Administration	Compatibility	Monitoring
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DRUG CLASS

Antimalarial.⁽¹⁾

INDICATIONS AND RESTRICTIONS

- Primaquine is used to eradicate the intrahepatic forms (hypnozoites) of *Plasmodium vivax* and *Plasmodium ovale*. It is also used to eliminate the transmissible stage of *Plasmodium falciparum* in malaria receptive regions of Australia (just south of Broome, Tennant Creek to above Townsville – north of 19°S latitude).^(2, 3)
- Primaquine is also used as a second line agent in the treatment of *Pneumocystis jiroveci* pneumonia in combination with clindamycin, however this combination is associated with considerable toxicity.^(1, 3)

Oral: Monitored (orange) antiprotozoal

- If the use is consistent with a standard approved indication, this must be communicated to ChAMP by documenting that indication on all prescriptions (inpatient and outpatient).
- The ChAMP team will review if ongoing therapy is required and/or if the order does not meet [ChAMP Standard Indications](#).
- If use is not for a standard approved indication, phone approval must be obtained from ChAMP before prescribing.

CONTRAINDICATIONS

- Hypersensitivity to primaquine, 8-aminoquinolines or any component of the formulation.^(4, 5)
- Primaquine is contraindicated in patients with severe glucose-6-phosphate dehydrogenase (G6PD) deficiency.^(1, 4-7)
- Primaquine is contraindicated in acutely unwell patients who have a tendency to develop granulocytopenia (e.g. rheumatoid arthritis or systemic lupus erythematosus).^(1, 3, 4, 7, 8)
- Primaquine is contraindicated in patients currently receiving medications that may depress bone marrow or agents that may cause haemolytic anaemia due to the increased risk of myelosuppression.⁽⁴⁾
- Primaquine is contraindicated in pregnancy.⁽³⁻⁵⁾
- Primaquine must not be given concurrently with quinacrine, or to patients who have recently taken quinacrine due to the significant increased risk of toxicity.^(3, 4)

PRECAUTIONS

- Primaquine is associated with a definite risk of haemolysis in individuals with mild to moderate G6PD deficiency and should be avoided. In cases of mild to moderate G6PD deficiency a weekly dosage regimen may be tolerated. Discuss with the Infectious Diseases team.^(1, 3-6)
- Patients with nicotinamide adenine dinucleotide (NADH) methemoglobin reductase deficiency have reported methaemoglobinaemia with primaquine use.^(3, 4)
- Use primaquine with caution in patients with conditions that may increase the risk of QT prolongation.^(4, 5, 7)
- Primaquine should be avoided in children less than 6 months old due to the risk of methaemoglobinaemia.⁽¹⁾
- Discontinue primaquine promptly if signs of haemolytic anaemia occur (e.g. darkening urine, marked fall in haemoglobin).⁽⁵⁾
- 7.5 mg of primaquine base is equivalent to 13.2 mg of primaquine phosphate.^(1, 3)

FORMULATIONS

Listed below are products available at PCH, other formulations may be available, check with pharmacy if required:

- 7.5mg (primaquine base) oral tablet.

Imprest location: [Formulary One](#)

DOSAGE & DOSAGE ADJUSTMENTS

Children MUST be screened for G6PD deficiency before commencing therapy.^(1-4, 7, 8)
All doses are expressed as primaquine base.

Neonates and children less than 6 months of age:

- Not routinely used in neonates or infants less than 6 months of age due to the risk of methaemoglobinaemia. Contact Infectious Diseases consultants for advice.⁽¹⁾
- For children > 4 weeks of age doses of 0.5 mg/kg/dose once daily for 14 days have been given for radical cure / prevention of relapse.⁽⁴⁾

Oral:**Children ≥ 6 months of age:****Radical cure of *P. vivax* or *P. ovale* infection:**

- Should be used in conjunction a standard course of malaria therapy.^(1, 3, 9)

P. vivax

- **≥ 6 months of age and ≥ 70kg:** 30 mg once daily, until a total dose equalling 6 mg/kg is given.^(3, 6)
- **≥ 6 months of age and < 70kg:** 0.5 mg/kg/dose (to a maximum of 30 mg) once daily for 14 days.^(3, 4, 9) 0.25 mg/kg/dose (to a maximum of 15 mg) can be given twice daily for 14 days in patients with nausea.⁽²⁾

***P. ovale*:**

- **≥ 6 months all weights:** 0.25 mg/kg/dose (to a maximum of 15 mg) once daily for 14 days.^(2, 4, 8)

Elimination of transmissible stage of *P. falciparum*:

- A single dose of primaquine should be given in addition to standard malaria therapy to eliminate the transmissible stage of *Plasmodium falciparum* in malaria receptive regions / low transmission areas of Australia just south of Broome, Tennant Creek to above Townsville – north of 19°S latitude).^(2, 3)
- This dose is best given with the initial treatment to ensure transmission is blocked as soon as possible.⁽⁶⁾
- 0.25 mg/kg as a single dose (to a maximum of 15 mg).^(3, 4, 9)

***Pneumocystis jiroveci* [carinii] pneumonia:** 0.25 mg/kg (to a maximum of 15 mg) once daily for 21 days in conjunction with oral clindamycin. This combination is associated with considerable toxicity and is not considered first line.⁽⁶⁾

Dosing in Overweight and Obese Children:

- There is limited information regarding the optimal dosing of malaria therapies in obese patients. Discuss dosing for obese or overweight children with the Infectious Diseases team.

Renal impairment:

- [eGFR calculator](#)
- No dosage adjustment appears to be necessary in renal impairment, however use with caution in patients with severe renal impairment.^(3, 4)

Hepatic impairment:

- As primaquine is metabolised by the liver, it should be used with caution in patients with hepatic impairment and liver function tests should be checked weekly.^(3, 4)

ADMINISTRATION

- Tablets should be given with food to mask the bitter taste and reduce gastrointestinal symptoms.^(3, 4, 6)
- When being used for the treatment of malaria, an additional dose should be given if the patient vomits within 1 hour of oral administration.⁽¹⁾

MONITORING

- G6PD deficiency **must** be excluded before commencing treatment courses. Exclusion of G6PD deficiency is not necessary for single doses.^(1, 3, 7, 8)
- Full blood count (FBC) should be conducted before commencing treatment and regularly with ongoing treatment.^(1, 3, 4)
- Visual colour check of urine should be conducted periodically during treatment as an indicator of haemolytic anaemia.^(3, 4)
- If primaquine is used in patients with cardiac disease or other QT prolonging drugs, ECG should be conducted.^(3, 7)

ADVERSE EFFECTS

Common: abdominal pain, dose related nausea and vomiting (generally less if taken with food), epigastric distress, dizziness, headache, leucocytosis.^(1, 4)

Infrequent: methaemoglobinaemia, haemolytic anaemia in G6PD deficiency.^(1, 8)

Rare: skin reactions, hypertension, arrhythmias, anaemia, leucopenia, granulocytopenia and agranulocytosis, cardiac arrhythmias, prolonged QT interval.^(1, 3, 4, 8)

STORAGE

Store tablets below 25°C.^(3, 5)

INTERACTIONS

This medication may interact with other medications; consult PCH approved references (e.g. [Clinical Pharmacology](#)), a clinical pharmacist or PCH Medicines Information Service on extension 63546 for more information.

****Please note: The information contained in this guideline is to assist with the preparation and administration of primaquine. Any variations to the doses recommended should be clarified with the prescriber prior to administration****

Related CAHS internal policies, procedures and guidelines

[Antimicrobial Stewardship Policy](#)

[ChAMP Empiric Guidelines and Monographs](#)



[KEMH Neonatal Medication Protocols](#)

[PCH Emergency Department Guidelines - Malaria](#)

References

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File Path:	W:\Safety & Quality\CAHS\CLOVERS MEDICAL Pharmacy\Procedures Protocols and Guidelines\ChAMP\Word		
Document Owner:	Head of Department – Infectious Diseases		
Reviewer / Team:	Children’s Antimicrobial Management Program Pharmacist		
Date First Issued:	October 2013	Last Reviewed:	December 2023
Amendment Dates:	December 2017, November 2020, December 2023	Next Review Date:	January 2027
Approved by:	Drug and Therapeutics Committee	Date:	January 2024
Endorsed by:	Chair, Drug and Therapeutics Committee	Date:	January 2024
Aboriginal Impact Statement and Declaration (ISD)		Date ISD approved:	31/08/2023
Standards Applicable:	NSQHS Standards:  NSMHS: N/A Child Safe Standards: N/A		
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 <h2 style="margin: 0;">Healthy kids, healthy communities</h2> <div style="display: flex; justify-content: space-around; margin: 5px 0;"> Compassion Excellence Collaboration Accountability Equity Respect </div> <p style="margin: 0; font-size: small;">Neonatology Community Health Mental Health Perth Children’s Hospital</p>			