MONOGRAPH	
Phenoxymethylpenicillin (Penicillin V) Monograph - Paediatric	
Scope (Staff):	Clinical Staff – Medical, Nursing, Pharmacy
Scope (Area):	Perth Children's Hospital (PCH)

This document should be read in conjunction with this DISCLAIMER

DESCRIPTION	Phenoxymethylpenicillin (also known as penicillin V) interferes with bacterial cell wall peptidoglycan synthesis by binding to penicillin binding proteins resulting in cell lysis.[1-4]
INDICATIONS AND RESTRICTIONS	Phenoxymethylpenicillin is narrow spectrum penicillin mainly active against Gram-positive organisms and oral anaerobes but is inactivated by beta-lactamases.[2] The **treatment** indications for Phenoxymethylpenicillin are: • Treatment of acute pharyngitis or tonsillitis due to *Streptococcus pyogenes*, to prevent acute rheumatic fever (ARF). Refer to The 2020 Australian guideline for prevention, diagnosis and management of ARF and RHD (3rd Edition)[1, 5] • Treatment of acute pharyngitis or tonsillitis due to *S. pyogenes* in children with moderate to severe pharyngitis.[2] • Scarlet fever.[2] • Treatment of ARF (if intolerant of intramuscular benzathine benzylpenicillin)[5] • Dental infections (severe superficial infections).[2] The **prophylaxis** indications for Phenoxymethylpenicillin are: • Secondary prophylaxis for ARF (if intolerant of intramuscular benzathine benzylpenicillin).[5] • Prophylaxis of infection due to encapsulated organisms (e.g. pneumococcal infection) in asplenia, sickle cell anaemia, functional hyposplenia or post splenectomy.[2] • Prophylaxis following Haematopoietic stem cell transplantation (HSCT) until day 100, and no active Graft Versus Host Disease (GVHD) and all immunosuppressive agents ceased.[2, 3, 6] **Oral: Unrestricted (green) antibiotic** This is not a restricted agent. Follow standard ChAMP guidelines where appropriate.
CONTRAINDICATIONS	Phenoxymethylpenicillin is generally contraindicated in patients with a history of high risk allergy to penicillins.[1, 2, 4, 6-8]

PRECAUTIONS

Phenoxymethylpenicillin may be prescribed in selected patients with high risk allergy to another Beta-lactam sub-class (e.g. some cephalosporins, carbapenems) in discussion with immunology.

In patients with a previous low risk reaction to phenoxymethylpenicillin or another penicillin (delayed rash [>1hr after initial exposure] without mucosal or systemic involvement) the risk of subsequent reaction is low. Re-challenge may be acceptable in discussion with immunology.

FORMULATIONS

Available at PCH:

- 250mg tablets and capsules
- 50mg/mL powder for suspension

Other formulations available:

- 25mg/mL powder for suspension
- 30mg/mL suspension
- 250mg and 500mg tablets/capsules (multiple generic brands)

DOSAGE

- The doses listed below fall within the standard range.
- Higher doses may be prescribed for certain situations in consultation with an infectious diseases or clinical microbiology consultant.

Neonates (< 1 month of age):

Please refer to Neonatal Medication Protocols

Children:

Treatment:

Indication	Dose
Treatment of acute pharyngitis or tonsillitis due to *S. pyogenes* (including scarlet fever)	**All children:** 15mg/kg/dose (to a maximum of 500mg) 12 hourly for **10 days**.[1, 2, 5, 8]
Note: Antibiotics are **not** indicated for mild tonsillitis in children not at risk of ARF.[1, 8]	
Treatment of ARF (if intolerant of intramuscular benzathine benzylpenicillin)	**Child 1 month – 12 years:** 250mg/dose twice daily for **10 days**[5, 8] **Child 12 – 18 years:** 500mg/dose twice daily for **10 days**[5, 8]
Dental infections (severe superficial infections)	**All children:** 12.5mg/kg/dose (to a maximum of 500mg) four times a day for **5 days**.[8, 9]

Prophylaxis:

Indication	Dose
Secondary prophylaxis for ARF	**Child 1 month – 18 years**: 250mg/dose twice daily for 10 years.[1-3, 5]
Note: IM Benzathine benzylpenicillin is preferred for treatment and prophylaxis of ARF/Rheumatic Heart Disease (RHD) due to improved efficacy and patient compliance.[2, 5, 8]	
Prophylaxis in asplenia, sickle cell anaemia, functional hyposplenia or post splenectomy	**Child <1 year old**: 62.5mg/dose twice daily.[2] **Child 1- 5 years old**: 125mg/dose twice daily. [2] **Children ≥ 5 old**: 250mg/dose twice daily.[2, 6]
Prophylaxis following Haematopoietic stem cell transplantation (HSCT)	**Child <1 year old**: 62.5mg/dose twice daily.[2] **Child 1- 5 years old**: 125mg/dose twice daily. [2] **Children ≥ 5 old**: 250mg/dose twice daily.[2, 6] Treatment should be continued until day +100, and no active GVHD and all immunosuppressive agents have been ceased

DOSAGE ADJUSTMENT

Dosage adjustment required in renal impairment:

- No dosage adjustment is required in renal impairment, however the half-life may be prolonged in significant renal impairment.[1, 3, 4]
- The potassium content of the preparation should be considered in patients with severe renal impairment.[7]

Dosage adjustment required in hepatic impairment:

- There are no specific recommendations for dosage adjustment in patients with hepatic impairment. It appears that no dose adjustment is necessary.[3]

RECONSTITUTION

Oral powder for suspension 50mg/mL

Reconstitute the phenoxymethylpenicillin as per the product information with water as follows: Tap bottle until all the powder flows freely, add the total volume of water for reconstitution and shake vigorously to suspend the powder. Store the reconstituted suspension in a refrigerator between 2°C and 8°C and discard any remaining suspension after 10 days.

ADMINISTRATION	Phenoxymethylpenicillin may be given without regard to food, however absorption may be slightly higher if administered on an empty stomach.[1, 3]
MONITORING	Renal, hepatic and haematological function should be monitored with prolonged therapy (i.e. longer than 10 days).[1, 4]
ADVERSE EFFECTS	**Common:** diarrhoea, nausea, vomiting, *Clostridium difficile* associated disease, immunological reactions (rash, erythema, urticaria, contact dermatitis, fever, angioedema, bronchospasm, interstitial nephritis, haemolytic anaemia, eosinophilia, serum sickness-like syndrome, exfoliative dermatitis, Stevens-Johnson syndrome and toxic epidermal necrolysis).[1, 7] **Rare:** allergy, black tongue, electrolyte disturbances, neurotoxicity (with high dose e.g. drowsiness, hallucinations, coma, seizures), bleeding, blood dyscrasias (e.g. thrombocytopenia).[1, 7]
COMPATIBLE FLUIDS	Not applicable
STORAGE	**50mg/mL oral powder for suspension:** • The 50mg/mL powder for suspension should be stored at less than 25˚C prior to reconstitution. • Once reconstituted, the resultant suspension should be refrigerated between 2 and 8˚C.[7] • Refer to packaging for storage conditions of alternative brands and strengths. **Tablets and capsules:** • Tablets and capsules should be stored at less than 30˚C.[7]
INTERACTIONS	**Phenoxymethylpenicillin has drug interactions; please consult PCH approved references (e.g. Clinical Pharmacology), your ward pharmacist or Pharmacy on extension 63546 for more information** • Phenoxymethylpenicillin increases the toxicity of methotrexate by reduction of excretion, monitor closely.[1, 3-7] • Tetracycline antibiotics (e.g. doxycycline, minocycline and tetracycline) may reduce the effect of phenoxymethylpenicillin.[3, 4]
COMMENTS	
MANUFACTURER SAFETY DATA SHEET (SDS)	To access to the Manufacturer SDS for this product, use the following link to ChemAlert.

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

Related internal policies, procedures and guidelines
Antimicrobial Stewardship Policy
ChAMP Empiric Guidelines
KEMH Neonatal Medication Protocols

References

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