

BENZYL PENICILLIN

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Formulary: Unrestricted	
Presentation	Vial: 600 mg
Classification	Penicillin antibacterial
Indication	<ul style="list-style-type: none"> • Empirical treatment of suspected early onset sepsis in combination with an aminoglycoside. • Directed treatment of infections and meningitis caused by susceptible organisms including: <ul style="list-style-type: none"> • Group B streptococcus (GBS), • Non-beta lactamase producing congenital syphilis.
Special Considerations	<ul style="list-style-type: none"> • Contraindicated for patients with hypersensitivity to penicillin. • Use with caution in patients with hypersensitivity to cephalosporins. • Use with caution in patients with renal impairment, as electrolyte disturbance and CNS toxicity may occur with high doses and rapid infusions. See Dosage and Administration sections for further information. • Consider sodium load, especially in renal impairment – a dose of 120 mg/kg/day provides 0.36 mmol/kg/day of sodium.
Monitoring	Monitor electrolytes specifically sodium and renal function with high doses and long-term treatment.
Compatibility	<p>Fluids: Water for injection, sodium chloride 0.9%, glucose 5%.</p> <p>Refer to KEMH Neonatal Medication Guideline: Y-Site IV Compatibility in Neonates.</p>
Incompatibility	IV aminoglycoside antibiotics, including gentamicin, are inactivated by IV cephalosporins, penicillins and teicoplanin. Ensure lines are adequately flushed between antibiotics.
Side Effects	<p>Rash, diarrhoea.</p> <p>Serious/Rare: CNS toxicity including seizures and electrolyte disturbances associated with renal impairment and high doses/rapid infusions.</p> <p>Bone marrow suppression, granulocytopenia, hepatitis.</p> <p>Hypersensitivity (not reported in neonates).</p>
Storage & Stability	<p>Vial: Store at room temperature, below 25°C. Protect from light.</p> <p>CIVAS syringe: Refrigerate, do not freeze.</p>
Comments	<ul style="list-style-type: none"> • Also known as penicillin G. • 60 mg = 100 000 units of penicillin.

**Presentation
(for IV use)**

Vial: 600 mg
Available from CIVAS (KEMH Only): 60 mg/mL



Sepsis

Corrected Gestational Age	Postnatal Age	Dose	Frequency
Less than 45 weeks	Less than 7 days	60 mg/kg/dose	Every 12 hours
	7 days and greater	60 mg/kg/dose	Every 8 hours
45 weeks and greater	All	60 mg/kg/dose	Every 6 hours

Dosage

Meningitis

Postnatal Age	Dose	Frequency
All ages	90 mg/kg/dose	Every 8 hours

Congenital Syphilis

Postnatal Age	Dose	Frequency
7 days or less	30 mg/kg/dose	Every 12 hours
Greater than 7 days	30 mg/kg/dose	Every 8 hours

Usual duration of treatment is 10 days, contact microbiologist for patient specific recommendation.

Dose adjustment – renal impairment:

Dose reduction may be required in severe renal impairment to reduce the risk of CNS toxicity and electrolyte imbalance, consult pharmacy and microbiology.

Use solution prepared in CIVAS where available.

Preparation

Vial: 600 mg

Step 1 Reconstitution:

Add 5 mL of water for injection to the 600 mg benzylpenicillin vial.

Step 2 Dilution:

Withdraw the entire contents of the above solution (≈ 5 mL) and make up to 10 mL with water for injection.

Concentration now equal to 60 mg/mL

Administration

IV push – for doses of 60 mg/kg and less:

- Inject slowly over 5 to 10 minutes.
- Use caution in patients with severe renal impairment. Administer IV push over 10 minutes or if possible, administer as an IV infusion.

IV infusion – for doses greater than 60 mg/kg:

- Infuse via syringe driver pump over 15 to 30 minutes.



INTRAMUSCULAR

Presentation	Vial: 600 mg			
Dosage	Sepsis			
	Corrected Gestational Age	Postnatal Age	Dose	
	Less than 45 weeks	7 days or less	60 mg/kg/dose	Every 12 hours
		Greater than 7 days	60 mg/kg/dose	Every 8 hours
	45 weeks and over	All	60 mg/kg/dose	Every 6 hours
	Meningitis			
	Postnatal Age	Dose	Frequency	
	All ages	90 mg/kg/dose	Every 8 hours	
	Congenital Syphilis			
	Postnatal Age	Dose	Frequency	
7 days or less	30 mg/kg/dose	Every 12 hours		
Greater than 7 days	30 mg/kg/dose	Every 8 hours		
Usual duration of treatment is 10 days, contact microbiologist for patient specific recommendation.				
Dose adjustment – renal impairment: Dose reduction may be required in severe renal impairment to reduce the risk of CNS toxicity and electrolyte imbalance, consult pharmacy and microbiology.				
Preparation	Vial: 600 mg Add 1.6 mL of water for injection to 600 mg vial. <i>Concentration = 600 mg/2 mL = 300 mg/mL</i>			
Administration	<ul style="list-style-type: none"> • Draw up the prescribed dose. • Inject as per the Medication Administration Guideline. 			

Related Policies, Procedures, and Guidelines

Clinical Practice Guidelines:

[CAHS Sepsis: Neonatal](#)

[CAHS Syphilis: Investigation and management of the neonate born to a mother with syphilis](#)

Pharmaceutical and Medicines Management Guidelines:

[CAHS Neonatology – Medication Administration Guideline](#)

[WNHS Cold Chain Management for Medications and Vaccines](#)

[CAHS Medication Refrigerators and Freezers](#)

References

AusDI. BENPEN. In: AusDI By Medical Director [Internet]. Australia: AusDI by Medical Director; 2023 [cited 2024 Oct 10]. Available from: <https://www.ausdi.com/>

Australasian Neonatal Medicines Formulary (ANMF). Benzylpenicillin. In: Australasian Neonatal Medicines Formulary [Internet]. Sydney, New South Wales; 2024 [cited 2024 Oct 10]. Available from: www.anmfonline.org

Australasian Society for Infectious Diseases (ASID). Management of Perinatal Infections. 3rd ed. [Internet]. Available from: <https://asid.net.au/publications>

King Guide to Parenteral Admixtures. Penicillin G. [Internet]. 2024 [cited 2024 Oct 16]. Available from: <http://www.kingguide.com>

Society of Hospital Pharmacists of Australia. Benzylpenicillin. In: Australian Injectable Drugs Handbook [Internet]. St Leonards, New South Wales: Health Communication Network; 2024 [cited 2024 Oct 10]. Available from: <http://aidh.hcn.com.au>



Takemoto CK, Hodding JH, Kraus DM. Pediatric & neonatal dosage handbook with international trade names index: an extensive resource for clinicians treating pediatric and neonatal patients. 27th ed. Hudson (Ohio): Lexicomp; 2020. p1849.

Therapeutic Guidelines. GBS Meningitis In: eTG complete [Internet]. West Melbourne (Victoria): Therapeutic Guidelines; 2022 [cited 2024 Oct 16]. Available from: <https://tgldcdp-tg-org-au.kelibresources.health.wa.gov.au/etgAccess>

Truven Health Analytics. Penicillin G. In: NeoFax [Internet]. Greenwood Village (CO): Truven Health Analytics; 2024 [cited 2025 Feb 27]. Available from: <https://neofax.micromedexsolutions.com/>

UpToDate Lexidrug. Penicillin G (intravenous and short-acting intramuscular): Pediatric drug information. In: UpToDate Lexidrug [Internet]. Wolters Kluwer; 2024. [cited 2024 Nov 11]. Available from: www.uptodate.com

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