



## MONOGRAPH

# Ceftazidime with avibactam Monograph - Paediatric

<b>Scope (Staff):</b>	Medical, Pharmacy, Nursing
<b>Scope (Area):</b>	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

<a href="#">Dosage/Dosage Adjustments</a>	<a href="#">Administration</a>	<a href="#">Compatibility</a>	<a href="#">Monitoring</a>
---	--------------------------------	-------------------------------	----------------------------

### DRUG CLASS

Combination cephalosporin antibiotic with a beta-lactamase inhibitor.<sup>(1)</sup>

### INDICATIONS AND RESTRICTIONS

#### IV: Restricted (red) antibiotic

ChAMP approval is required prior to prescription.

Ceftazidime with avibactam is reserved as treatment for proven multi-resistant infection where no other antimicrobials are appropriate.

### CONTRAINDICATIONS

- Hypersensitivity to ceftazidime, avibactam, or any component of the formulation or patients with a history of [high risk allergy](#) to cephalosporins.<sup>(1)</sup>

### PRECAUTIONS

- Use with caution in patients with confirmed aztreonam allergy, as cross-reactivity may occur.<sup>(1)</sup>
- Ceftazidime with avibactam may be prescribed in selected patients with high risk allergy to another Beta-lactam sub-class (e.g. some penicillins, carbapenems) in discussion with immunology.
- Each vial contains 148mg of sodium.<sup>(1, 2)</sup>

**FORMULATIONS**

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

- Ceftazidime/ avibactam 2gram/500mg vials

Imprest location: [Formulary One](#)

**DOSAGE & DOSAGE ADJUSTMENTS**

**Neonates and children under 3 months old:** Not routinely used in this age group.

Contact Infectious Diseases or Clinical Microbiology for advice.

**All doses are expressed as and should be prescribed as the ceftazidime component**

**Infants  $\geq 3$  months to  $< 6$  months:**<sup>(2, 3)</sup>

- 40mg/kg/dose given 8 hourly

**Children and adolescents  $\geq 6$  months:**<sup>(2, 3)</sup>

- 50mg/kg/dose (to a maximum of 2 grams ceftazidime component) given 8 hourly

**Dosing in Overweight and Obese Children:** Dose based on measured body weight.<sup>(4)</sup>

**Renal impairment:**

- [eGFR calculator](#)
- **Children  $< 2$  years:**

Consider alternative agents. There is insufficient information regarding dosing for patients in this age group with a creatinine clearance of  $< 50$  mL/minute/ $1.73\text{m}^2$ .<sup>(2, 3)</sup>

- **Children and adolescents  $\geq 2$  years**

eGFR <sup>(2, 3)</sup>	Dose adjustment
$\geq 50$ mL/minute	No dosage adjustment required.
31 to 50 mL/minute	25mg/kg/dose (to a maximum of 1 gram ceftazidime component) 8 hourly
16 to 30 mL/minute	19mg/kg/dose (to a maximum of 750mg ceftazidime component) 12 hourly
6 to 15 mL/minute	19mg/kg/dose (to a maximum of 750mg ceftazidime component) 24 hourly
$\leq 5$ mL/minute	19mg/kg/dose (to a maximum of 750mg ceftazidime component) 48 hourly

**Hepatic impairment:**

- No dosage adjustments are required.<sup>(3)</sup>

**RECONSTITUTION & ADMINISTRATION****Reconstitution**

- Reconstitute the 2 gram vial with 10mL of water for injections to create a concentration of 167.3mg/mL.
- Powder volume is 1.95mL<sup>(5)</sup>

**Administration**

- Dilute the required dose to a final concentration of 8 to 40mg/mL and infuse over 2 hours.<sup>(5)</sup>

**COMPATIBILITY (LIST IS NOT EXHAUSTIVE)****Compatible fluids:**

- Glucose 5%
- Hartmann's
- Sodium chloride 0.9%
- Sodium chloride 0.45% with glucose 2.5%<sup>(5)</sup>

**Compatible at Y-site:**

[Compatibilities of IV drugs](#) must be checked when two or more drugs are given concurrently.

**MONITORING**

- Monitor renal, hepatic and haematological function weekly throughout therapy.<sup>(1)</sup>
- Monitor the infusion site for phlebitis.<sup>(5)</sup>

**ADVERSE EFFECTS**

**Common:** diarrhoea, nausea, vomiting, pain and inflammation at the injection site, rash, itch, headache, dizziness, allergy, *Clostridioides difficile*-associated disease.<sup>(1, 3)</sup>

**Infrequent:** neutropenia, leukopenia, paraesthesia<sup>(2)</sup>

**Rare:** neurotoxicity (especially with high doses and/or renal impairment), thrombocytopenia, bleeding, renal impairment.<sup>(1, 3)</sup>

**STORAGE**

- Store vials below 30°C<sup>(2)</sup>

**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 ceftazidime with avibactam. Any variations to the doses recommended should be clarified with the prescriber prior to administration\*\***

Related CAHS internal policies, procedures and guidelines
<a href="#">Antimicrobial Stewardship Policy</a>
<a href="#">ChAMP Empiric Guidelines and Monographs</a>
<a href="#">KEMH Neonatal Medication Protocols</a>

References
1. Rossi S, editor. Australian Medicines Handbook. Adelaide, S. Aust.: Australian Medicines Handbook; 2021.
2. MIMS Australia. MIMS online [full product information]. St Leonards, N.S.W: CMP Medica Australia.; 2021. p. 1v. (various pagings).
3. Clinical Pharmacology [Internet]. Elsevier BV. 2021 [cited 10/11/2021]. Available from: <a href="http://www.clinicalpharmacology-ip.com.pklibresources.health.wa.gov.au/default.aspx">http://www.clinicalpharmacology-ip.com.pklibresources.health.wa.gov.au/default.aspx</a> .
4. Kendrick JG, Carr RR, Ensom MH. Pediatric Obesity: Pharmacokinetics and Implications for Drug Dosing. Clin Ther. 2015;37(9):1897-923.
5. Symons K. Ermer J. (editors). Australian injectable drugs handbook. Collingwood: The Society of Hospital Pharmacists of Australia; 2020.

**This document can be made available in alternative formats on request for a person with a disability.**

<b>File Path:</b>	<a href="#">W:\Paediatrics\PMH\ChAMP\Monographs\FINALISED\00 Current version 00</a>		
<b>Document Owner:</b>	Head of Department – Infectious Diseases		
<b>Reviewer / Team:</b>	Children’s Antimicrobial Management Program Pharmacist		
<b>Date First Issued:</b>	December 2021	<b>Last Reviewed:</b>	December 2021
<b>Amendment Dates:</b>	N/A	<b>Next Review Date:</b>	December 2024
<b>Approved by:</b>	Medication Safety Committee	<b>Date:</b>	December 2021
<b>Endorsed by:</b>	Drugs and Therapeutics Committee	<b>Date:</b>	December 2021
<b>Standards Applicable:</b>	NSQHS Standards:  NSMHS: N/A Child Safe Standards: N/A		

**Printed or personally saved electronic copies of this document are considered uncontrolled**



**Healthy kids, healthy communities**

Compassion

Excellence

Collaboration

Accountability

Equity

Respect

Neonatology | Community Health | Mental Health | Perth Children’s Hospital