MONOGRAPH

Aztreonam 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

DRUG CLASS

Monobactam antibiotic.(1)

Aztreonam is active against the majority of Gram-negative aerobes.(1) It is inactive against Gram negative anaerobic and Gram positive organisms.(2) Aztreonam is generally reserved for treatment in patients with allergy and/or where other agents are unsuitable.(1)

INDICATIONS AND RESTRICTIONS

IV: Restricted (red) antibiotic

ChAMP approval is required prior to prescription.

CONTRAINDICATIONS

- Hypersensitivity to aztreonam, other monobactams or any component of the formulation.(3-6)
- The IV formulation should NOT be used for inhalation due to the arginine content which can result in airway inflammation.(7)

PRECAUTIONS

- Aztreonam may be prescribed in selected patients with high risk allergy to another Beta-lactam sub-class (e.g. penicillins, cephalosporins, carbapenems) in discussion with immunology.(8) Care should be taken with ceftazidime due to the risk of cross reactivity.(1)

- In patients with a previous low risk reaction to aztreonam or another Beta-lactam (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.(1)
- Each 1gram vial of aztreonam also contains 814mg of L-arginine.(5, 9)
- On reconstitution, aztreonam solution ranges in colour from colourless to light straw, to yellow. A slight pink tint may develop on standing.(9)

FORMULATIONS

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

- 1gram powder for injection vial

Imprest location: Formulary One

DOSAGE & DOSAGE ADJUSTMENTS

Neonates: Not routinely used in neonates, contact infectious disease or clinical microbiology consultant for advice. The following doses have been used:

- Term Neonate < 7days old: 30mg/kg/dose given 12 hourly.
- Term Neonate ≥ 7 to 28 days old: 30mg/kg/dose given 6 to 8 hourly.(8)

IV:

Children ≥4 weeks:

- **Usual dose:** 30mg/kg/dose (to a maximum of 2grams) every 6 to 8 hours.(1, 8)
- **Severe infections or Cystic Fibrosis:** 50mg/kg/dose (to a maximum of 2grams) 6 to 8 hourly.(1, 8)

Dosing in Overweight and Obese Children: There is minimal information available, consider using doses at the upper end of the dosage range in discussion with Infectious Diseases (e.g. 6 hourly dosing) for obese patients. (10)

Renal impairment:

eGFR calculator

- eGFR ≥ 30mL/minute: normal dosing
- eGFR ≥10 to <30mL/minute: 15-20mg/kg/dose (to a maximum of 2grams) given 8 hourly.
- eGFR < 10mL/minute: 7.5-10mg/kg/dose (to a maximum of 2grams) given 12 hourly.(3, 6)

Hepatic impairment:

No dosage adjustments are necessary with hepatic dysfunction, however aztreonam should be used with caution and liver function should be monitored.(3, 6, 8)

RECONSTITUTION & ADMINISTRATION

- Reconstitute each vial with the volume of water for injection in the table below and shake vigorously. Further dilution with a compatible fluid may be required.[9]

Vial strength	Volume of water for injection required[9]	Resulting concentration
1 gram (Azactam®)	9.1mL (powder volume 1.2mL)	100mg/mL (final volume 10.35mL)

IV bolus:

- Give via slow IV injection over 3 to 5 minutes.[1, 9]

IV infusion:

- Dilute with compatible fluid to a final concentration of 20mg/mL or weaker and infuse over 20 to 60 minutes.[1, 9]

COMPATIBILITY *(LIST IS NOT EXHAUSTIVE)*

Compatible fluids:

- Glucose 5% and 10%
- Glucose/sodium chloride solutions
- Sodium chloride 0.9%
- Hartmann's
- Mannitol 5% and 10%
- Ringer's[9]

Compatible at Y-site:

Compatibilities of IV drugs must be checked when two or more drugs are given concurrently.

MONITORING

- Renal, hepatic and haematological function should be monitored weekly with prolonged therapy (i.e. longer than 7 days).[3, 4, 6]
- Glucose levels should be monitored in neonates and infants due to the potential exaggerated response to the arginine content of the preparation which may result in altered glucose homeostasis.[3]

ADVERSE EFFECTS

Common: rash, diarrhoea, nausea, vomiting, fever, taste disturbance, transient increases in liver aminotransferases, eosinophilia, thrombophlebitis at injection site.[1]

Infrequent: headache, dizziness, abdominal cramps and bloating, oral ulceration[1]

Rare: anaphylaxis, toxic epidermal necrolysis, *Clostridioides difficile*-associated disease, gastrointestinal bleeding, prolonged bleeding time, thrombocytopenia, neutropenia, hepatitis,

jaundice, hypotension, chest pain, dyspnoea, seizures, anaemia, asthenia, breast tenderness, chest pain, confusion, diplopia .[1, 8]

STORAGE

- Store the 1g powder for injection vial below 30ºC.[5]
- Products prepared by Pharmacy Compounding Services (PCS) should be stored between 2 and 8ºC.[9]

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 **aztreonam**. 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

References

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File Path:	W:\Paediatrics\PMH\ChAMP\Monographs\FINALISED\00 Current version 00		
Document Owner:	Head of Department – Infectious Diseases		
Reviewer / Team:	Children's Antimicrobial Management Program Pharmacist		
Date First Issued:	September 2013	**Last Reviewed:**	September 2022
Amendment Dates:	September 2019, June 2020, August 2022	**Next Review Date:**	October 2025
Approved by:	Drug and Therapeutics Committee	**Date:**	October 2022
Endorsed by:	Chair, Drug and Therapeutics Committee	**Date:**	October 2022
Standards Applicable:	NSQHS Standards: NSMHS: N/A Child Safe Standards: N/A		

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