MONOGRAPH

Liposomal amphotericin B (AmBisome®) 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

⚠ HIGH RISK MEDICINE ⚠

QUICKLINKS

Dosage/Dosage Adjustments	Administration	Compatibility	Monitoring

DRUG CLASS

Polyene antifungal.[1, 2]

Liposomal amphotericin B (AmBisome®) is a High Risk Medicine.

INDICATIONS AND RESTRICTIONS

AmBisome® is indicated in the treatment of severe systemic or deep mycoses and suspected or proven infection in febrile neutropenic patients unresponsive to broad spectrum antibacterials.[3, 4]

AmBisome® is also used for prophylaxis in patients at high risk of mould infections who are intolerant to micafungin prophylaxis.[3]

IV: Monitored (orange) antifungal

- 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.

Inhaled: Restricted (red) antifungal

ChAMP approval is required prior to prescription. – Refer to the *inhaled* liposomal amphotericin B monograph.

CONTRAINDICATIONS

- Hypersensitivity to any formulation of amphotericin B or any component of the formulation.[1, 4, 5]
- Liposomal amphotericin B (AmBisome®) is **INCOMPATIBLE** with sodium chloride 0.9% - IV lines should be flushed with glucose 5% prior to administration.[1, 5, 6]

PRECAUTIONS

Different preparations of intravenous amphotericin are available and vary in their pharmacodynamics, pharmacokinetics, dosage and administration.

They are **NOT** considered interchangeable. To avoid confusion, they should be prescribed by trade name.[2, 6, 7]

- Use with caution in patients with cardiac disease as liposomal amphotericin B may cause chest pain, tachycardia, hypotension or hypertension.[5]
- Each 50 mg vial of liposomal amphotericin B contains 900 mg of sucrose.[1, 6]

FORMULATIONS

Listed below are products available at PCH. Other formulations may be available; check with pharmacy if required:

- Liposomal amphotericin B 50 mg powder for injection vial (AmBisome®)

Imprest location: Formulary One

DOSAGE & DOSAGE ADJUSTMENTS

Neonates: Refer to Neonatal Medication Protocols

IV - Children:

- **Treatment of Aspergillus infection (suspected or confirmed) including prolonged febrile neutropenia:** 3 mg/kg/dose given once daily. [3-5, 7]
- **Treatment of Mucormycosis:** 5 mg/kg/dose given once daily. May be increased to a maximum of 10 mg/kg once daily in CNS disease only on advice from an infectious diseases or clinical microbiology consultant.[3, 4, 7]
- **Mould prophylaxis:** 1 mg/kg/dose given either 3 times per week or once daily.[7]

Inhalation:

Please refer to separate Inhaled liposomal amphotericin B monograph

Dosing in Overweight and Obese Children:

- There is limited information regarding dosing of liposomal amphotericin B in obesity.
- Adult studies suggest dosing by adjusted body weight for patients requiring standard doses of 3 mg/kg/dose. For patients requiring 5 mg/kg/dose or higher or those that are critically ill, doses can be based on total body weight.[8]

Renal impairment:

- eGFR calculator
- No dose reduction is required in renal impairment, however renal function should be monitored as use may be associated with a further decline in renal function. [3, 5]
- Care should be taken with the concomitant use of other nephrotoxic agents due to the increased risk of renal impairment.[3]

Hepatic impairment:

- No dosage reduction is required in hepatic impairment, however regular monitoring of hepatic function is recommended.[5]

RECONSTITUTION & ADMINISTRATION

Reconstitution:

- Reconstitute each vial with 12 mL of water for injection to obtain a concentration of 4 mg/mL (assumes a 0.5 mL displacement volume for the powder).[1, 5, 6, 9, 10]
- Shake the vial for 30 seconds to ensure the powder has dissolved.[1, 5, 6, 10]
- Withdraw the required dose and using a 5 micrometre filter (supplied) add the solution to glucose 5% to produce a final concentration between 0.2 mg/mL and 2 mg/mL.

Administration:

- Flush the line before and after infusion with glucose 5%.[5, 6]
- Infuse at a concentration of between 0.2 mg/L and 2 mg/L, given over 2 hours.[4, 5]
- For doses less than 5 mg/kg/dose, if no adverse effects are seen, subsequent infusions may be administered over 1 hour.[3, 6]

COMPATIBILITY *(LIST IS NOT EXHAUSTIVE)*

Compatible fluids:

Glucose 5%[6]

Compatible at Y-site:

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

INCOMPATIBLE drugs:

- AmBisome® is **INCOMPATIBLE** with sodium chloride 0.9% - IV lines should be flushed with glucose 5% prior to and immediately following administration.[1, 6]

MONITORING

- Renal function and electrolytes, (including magnesium, potassium and sodium) should be monitored three times a week throughout therapy and until stable after treatment is ceased.[3]
- Full blood picture, and hepatic function should be monitored twice weekly throughout therapy and until stable after treatment is ceased.[3]
- Patients should be monitored for infusion related reactions (especially during the first dose). Paracetamol and/or an antihistamine or a slowing of the infusion rate may be required.[3]

ADVERSE EFFECTS

Common: thrombophlebitis, anaemia, nephrotoxicity, hypoxia, hyperglycaemia, altered liver function tests, tachycardia and electrolyte abnormalities (hypokalaemia, hyponatraemia, hypomagnesaemia).[3, 5]

Infusion related reactions are common and may include fever, chills, hypotension, anorexia, nausea, vomiting, headache, malaise, muscle and joint pain. They usually lessen with continued treatment and with a slowing of the infusion rate and the use of paracetamol and/or an antihistamine.[3]

Infrequent: hypotension, hypertension, arrhythmias, blood dyscrasias, Gastrointestinal (GI) bleeding, hepatotoxicity, rash, neurological effects, hypernatraemia.[3]

Rare: anaphylactoid reactions, hyperkalaemia, cardiac arrest, encephalopathy, deafness, tinnitus, vertigo, vision disorders.[3, 10].

STORAGE

- 50 mg powder for injection vial should be stored below 25 ˚C[1, 6]
- Products prepared by PCS should be stored between 2 and 8 ˚C.[6]

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 **liposomal amphotericin B (AmBisome®)**. 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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