## Liposomal amphotericin B (AmBisome®) Monograph - Paediatric

**Scope (Staff):** Medical, Nursing, Pharmacy  
**Scope (Area):** PCH

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### DISCLAIMER

This document should be read in conjunction with this DISCLAIMER

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### DESCRIPTION

- Liposomal amphotericin B (AmBisome®) is a polyene antifungal. It binds irreversibly to ergosterol in the fungal cell membrane resulting in fungal cell death by altering the permeability and allowing leakage of the intracellular contents.\(^{(1,2)}\)
- 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.\(^{(2)}\)
- AmBisome® is also used for prophylaxis in those patients at high risk of mould infections who are intolerant to micafungin prophylaxis.

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### INDICATIONS AND RESTRICTIONS

**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.

**Inhalation: Restricted (red) antifungal**

- Refer to the inhaled amphotericin B monograph

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### CONTRAINDICATIONS

- Liposomal amphotericin B (AmBisome®) is contraindicated in patients with a history of hypersensitivity reactions with any formulation of amphotericin B.\(^{(3-5)}\)
- Liposomal amphotericin B (AmBisome®) is INCOMPATIBLE with sodium chloride 0.9% - IV lines should be flushed with glucose 5% prior to administration.\(^{(6)}\)

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### 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.\(^{(3)}\)
- Maintain adequate hydration throughout treatment to reduce the risk of nephrotoxicity.\(^{(7)}\)
- Electrolyte abnormalities may occur during treatment. Regular monitoring is required and supplements given as necessary.\(^{(1, 3)}\)

### FORMULATIONS

#### Available at PCH:
- Liposomal amphotericin B 50mg powder for injection vial (AmBisome®)

#### Other formulations available:
- Nil

### 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 (<1month):
- Please refer to neonatal clinical care drug protocols

#### IV:
- Treatment of Aspergillus infection (suspected or confirmed) including prolonged febrile neutropenia: 3mg/kg/dose given once daily.\(^{(1, 8, 9)}\)\(^{(3)}\)

#### Treatment of Zygomycosis:
- 5mg/kg/dose given once daily. May be increased to a maximum of 10mg/kg/day only on advice from an infectious diseases or clinical microbiology consultant.\(^{(5)}\)

#### Mould prophylaxis:
- 1mg/kg/dose given either 3 times per week or once daily.\(^{(3, 10)}\)

#### Inhalation:
- Please refer to separate inhaled amphotericin B monograph

### DOSAGE ADJUSTMENT

- No dosage adjustments required for impaired hepatic function or impaired renal function. However use of Ambisome® with other nephrotoxic agents may increase the risk of renal impairment.\(^{(1-3, 9)}\)

### RECONSTITUTION

- Reconstitute each vial with 12mL of water for injection to obtain a concentration of 4mg/mL (assumes a 0.5mL
displacement volume for the powder).

- Shake the vial for 30 seconds to ensure the powder has dissolved.
- 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 2mg/mL.\(^{(5, 6, 9)}\)

### ADMINISTRATION

**IV infusion:**

- Dilute with glucose 5% to a final concentration between 0.2mg/mL and 2mg/mL and infuse over 2 hours.
- If no adverse effects are seen, subsequent infusions may be administered over 1 hour.\(^{(5, 6, 9)}\)

### MONITORING

- Renal, hepatic, haematological function and electrolyte (including magnesium, potassium and sodium) levels should be monitored at least weekly throughout therapy and until stable after treatment is ceased.\(^{(3, 7, 9)}\)
- Monitoring for infusion related reactions should occur (especially during the first dose).
- Paracetamol and/or an antihistamine or a slowing of the infusion rate may be required.\(^{(1, 4)}\)

### ADVERSE EFFECTS

**Common:** infusion related reactions (including fever, chills, hypotension, anorexia, nausea, vomiting, headache, malaise, muscle and joint pain – usually lessen with continued treatment and with a slowing of the infusion rate.) Thrombophlebitis, anaemia, nephrotoxicity, hypoxia, hyperglycaemia, abdominal pain, altered LFT’s, tachycardia and electrolyte abnormalities.\(^{(1, 9)}\)

**Rare:** anaphylactoid reactions, GI bleeding, hepatotoxicity, hyperkalaemia, hypertension, arrhythmias, blood dyscrasias, rash (including Stevens-Johnson syndrome and toxic epidermal necrolysis) and neurologic effects.\(^{(1, 9)}\)

### COMPATIBLE FLUIDS

- Glucose 5\%(6)
- AmBisome\(^{®}\) is **INCOMPATIBLE** with sodium chloride 0.9% - IV lines should be flushed with glucose 5% prior to administration.\(^{(6, 7)}\)

### STORAGE

- 50mg powder for injection vial should be stored below 25°C
- Products prepared by CIVAS should be stored between 2 and 8°C.\(^{(6)}\)

### INTERACTIONS

- AmBisome\(^{®}\) has many drug interactions; please consult PCH approved references, your ward pharmacist or Pharmacy on 6456 0190 (option 1) for more information.
- There is an increased risk of nephrotoxicity when AmBisome\(^{®}\) is used in conjunction with other nephrotoxic agents (e.g. aminoglycosides, loop diuretics and vancomycin, cyclosporine...
Liposomal amphotericin B (AmBisome®) and tacrolimus).\(^{1, 9, 11}\)

- The use of AmBisome® and azole antifungals may have an antagonistic effect. The combination should be avoided unless on the advice of infectious diseases or clinical microbiology.\(^{1, 9}\)
- Any hypokalaemia caused by AmBisome® may increase the toxicity of cardiac glycosides (e.g. digoxin)\(^9\).
- Corticosteroids may increase the risk of hypokalaemia when used in conjunction with AmBisome®.\(^9\)

Ambisome® given concurrently with leucocyte transfusions may result in acute pulmonary toxicity. Infusions should be separated for as long as possible and patients pulmonary function monitored.\(^{11}\)

**COMMENTS**

- Each 50mg vial of liposomal amphotericin contains 900mg of sucrrose\(^{11}\)

**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 liposomal amphotericin B (AmBisome®). Any variations to the doses recommended should be clarified with the prescriber prior to administration**

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**Related internal policies, procedures and guidelines**

- **Antimicrobial Stewardship Policy** (Medication Management Manual)

- **ChAMP Empiric Guidelines** (ChAMP Manual)

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**References**

4. Micromedex 2.0 [Internet]. Truven Health Analytics. 2016 [cited 08/09/2016].
8. Royal Australian College of General Practitioners, Pharmaceutical Society of Australia, Australasian Society of Clinical and Experimental Pharmacologists and
References


Useful resources (including related forms)

Clinical Pharmacology

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