Louth: Antimicrobial Guidelines - Louth Hospitals: Antimicrobial Guidelines: Neonatal - ■Ambisome IV

Neonatal - Ambisome® IV (Liposomal Amphotericin B)

NB. Prescribe by BRAND name only.

Lipid formulation of the antifungal amphotericin B - significantly less toxic than the conventional form [1].

MEDICATION SAFETY ISSUES

- Amphotericin is included on the Institute for Safe Medication Practices (ISMP) List of High-Alert Medications [2]. Mix-ups between different formulations have led to overdoses (sometimes fatal) or underdoses resulting in subtherapeutic treatment [2-4].
- There are two liposomal amphotericin B products available, Ambisome® and Abelcet®. A conventional formulation is also available - Fungizone®. **NB. These preparations are not interchangeable** . **Prescribe Ambisome® by brand name only to avoid confusion** . [1,5]

USES

First-line antifungal for invasive infections [1]. Not licensed for use in infants under one month [1,6].

PRESENTATION

Ambisome® 50mg Powder for Concentrate for Dispersion for Infusion [6]

DOSAGE [1]

Age	Dose	Frequency
Neonate and Child 1 – 3 months	3mg/kg	Every 24 hours

On advice from the Consultant Microbiologist, the dose may be increased to 5mg/kg if required.

RECONSTITUTION [1,6-9]

- Check that the prescription specifies Ambisome® and the product you are using is Ambisome®.
- Ambisome® must be reconstituted with sterile Water for Injection (WFI) and diluted in Glucose 5% **ONLY. AMBISOME® IS INCOMPATIBLE WITH SODIUM CHLORIDE 0.9%.**
- **NB. There are TWO STEPS for reconstitution. BOTH Step 1 and Step 2 below must be followed.**
- **Step 1** : Add 12ml WFI to the 50mg Ambisome® vial and shake vigorously for 30 seconds to completely disperse the drug. The resulting solution contains 4mg/ml.
- **Step 2** : Using the 5 micron filter provided, further dilute 4ml of this solution with 12ml of Glucose 5% to a final volume of 16ml. The resulting solution contains 1mg/ml Ambisome®.
- If the baby is fluid restricted, Ambisome® may be reconstituted to a concentration of 2mg/ml instead.

Contact the Pharmacy Department to order subsequent doses of Ambisome® 1mg/ml reconstituted solution (10ml volume) from external compounding unit if available.

ADMINISTRATION [1,6,10]

- **AMBISOME® IS INCOMPATIBLE WITH SODIUM CHLORIDE 0.9%.**
- Prime the IV line (T-piece) with Glucose 5% before and after administration (or use a separate line).
- Administer by IV infusion - an in-line membrane filter (not less than 1 micron) may be used.
- Administer by IV infusion over 1 hour.
- Monitor vital signs and observe patient for infusion-related reactions.

SAMPLE CALCULATION

3.2kg neonate 9 days old with invasive candida infection. Dose: 3mg/kg = 9.6mg every 24 hours.

Reconstitute and further dilute Ambisome® as above to a solution containing 1mg/ml.

Required dose 9.6mg = 9.6ml. Administer by IV infusion over 1 hour.

STORAGE

Store unopened vials at room temperature below 25 ^{o} C. Once reconstituted, use immediately. [6].

MONITORING [1,7,8]

- Observe patient for infusion reactions during each infusion – a slower rate may reduce reactions.
- Caution if concomitant administration of other nephrotoxic agents.
- Monitor renal function and serum magnesium daily initially, then two to three times weekly
- Monitor liver function and FBC twice weekly
  - **Hypokalaemia is common**
  - **Hypomagnesaemia is common** and may require supplementation
  - Hyponatraemia may occur - ensure adequate hydration.

ADVERSE EFFECTS

Fever and chills/rigors are the most frequent infusion-related reactions [6]. Less frequent infusion-related reactions include chest tightness or pain, dyspnoea, bronchospasm, flushing, tachycardia, hypotension, and musculoskeletal pain. [6]. Other adverse effects include nausea, vomiting, abdominal pain, diarrhoea, cardiovascular effects (including arrhythmias), headache, febrile reactions, electrolyte disturbances (including hypokalaemia and hypomagnesaemia), disturbances in renal function (including renal tubular acidosis), abnormal liver function (discontinue treatment), blood disorders (including anaemia, thrombocytopenia), rash; *less commonly* neurological disorders (including convulsions, peripheral neuropathy, tremor, encephalopathy, hearing loss, diplopia); also reported anorexia, myalgia, arthralgia, toxic epidermal necrolysis, Stevens-Johnson syndrome [1].

REFERENCES

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7. Department of Health and Government of South Australia, South Australian Neonatal Medication Guidelines – Amphotericin (liposomal) 2018. Available from http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+topics/neonatal+medication+guidelines , accessed 16/11/2020.
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9. Institute for Safe Medication Practices (ISMP) and Vermont Oxford Network (VON). Standard concentrations of neonatal drug infusions. 2011. Available from www.ismp.org , accessed 09/12/14.
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Summary of Changes from Previous Versions

Date	Change
Feb 2021: Rev. No. 1	Updated based on Rotunda Ambisome® Monograph Jan 2019. OLOL changes: References updated.
August 2015	This is the first version of this guideline.