amphotericin B deoxycholate (am-foe-ter-i-sin)  
Fungizone®  
amphotericin B cholesteryl sulfate  
Amphotec®  
amphotericin B lipid complex  
Abelcet®  
amphotericin B liposome  
AmBisome®

**Classification**  
Therapeutic: antifungals

**Pregnancy Category**  
B

**Indications**  
IV: Treatment of progressive, potentially fatal fungal infections. The cholesteryl sulfate, lipid complex, and liposome formulations should be considered for patients who are intolerant (e.g., renal dysfunction) or refractory to amphotericin B deoxycholate. Amphotericin B liposome: Management of suspected fungal infections in febrile neutropenic patients; Treatment of visceral leishmaniasis, Treatment of cryptococcal meningitis in HIV patients.

**Action**  
Binds to fungal cell membrane, allowing leakage of cellular contents. Toxicity (especially acute infusion reactions and nephrotoxicity) is less with lipid formulations.

**Therapeutic Effects:** Can be fungistatic or fungicidal (depends on concentration achieved and susceptibility of organism).

**Spectrum:** Active against: Aspergillosis, Blastomycosis, Candidiasis, Coccidioidomycosis, Cryptococcosis, Histoplasmosis, Leishmaniasis (liposomal formulation only), Mucormycosis.

**Pharmacokinetics**  
Absorption: IV administration results in complete bioavailability.

**Distribution:** Extensively distributed to body tissues and fluids. Poor penetration into CSF.

**Metabolism and Excretion:** Elimination is very prolonged. Detectable in urine up to 7 wk after discontinuation.

**Half-life:** Biphasic— initial phase, 24–48 hr; terminal phase, 15 days. Cholesteryl sulfate—28 hr; Lipid complex—174 hr; Liposome—100–153 hr.

**Time/Action Profile**

<table>
<thead>
<tr>
<th>Route</th>
<th>Onset</th>
<th>Peak</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td>IV</td>
<td>End of infusion</td>
<td>24 hr</td>
<td>15 days</td>
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</table>

**Contraindications/Precautions**

**Contraindications:** Hypersensitivity; Lactation: Potential for distribution into breast milk and toxicity in infant; discontinue nursing. Use Cautionfully in: Renal impairment or electrolyte abnormalities; Patients receiving concurrent corticosteroid treatment (↑ risk of pulmonary toxicity); GI: Has been used safely.

**Adverse Reactions/Side Effects**


**Interactions**

**Drug-Drug:** Increased risk of nephrotoxicity, bronchospasm, and hypotension with antineoplastics. Concurrent use with corticosteroids may increase hypokalemia. Concurrent use with zidovudine may increase the risk of myelotoxicity and nephrotoxicity. Concurrent use with flucytosine may reduce antifungal activity but may ↑ the risk of toxicity from flucytosine. Combined use with aminoglycosides may reduce fungal resistance. ↑ risk of nephrotoxicity with other nephrotoxic agents such as aminoglycosides, cyclosporine, or tacrolimus. Hypokalemia from amphotericin ↑ the risk of digoxin toxicity. Hypokalemia may enhance the curariform effects of neuromuscular blocking agents.

**Route/Dosage**

Specific dosage and duration of therapy depend on nature of infection being treated.

**Amphotericin Deoxycholate**

**IV (Adults):** Give test dose of 1 mg. If test dose tolerated, initiate therapy with 0.25 mg/kg/day (doses up to 1.5 mg/kg/day may be used, depending on type of infection).
Amphotericin B (AmBisome) is a liposomal formulation of amphotericin B. It is typically used for the treatment of fungal infections, such as Candida albicans, Aspergillus, and Cryptococcus neoformans. The dosing and administration of Amphotericin B (AmBisome) are as follows:

**IV (Adults and Children):**
- 3–5 mg/kg q 24 hr (maximum dose 15 mg).

**NURSING IMPLICATIONS**
- **Assessment:**
  - Monitor patient closely during test dose and the first 1–2 hr of each dose for fever, chills, headache, anorexia, nausea, or vomiting. Premedicating with antipyretics, corticosteroids, antihistamines, meperidine, and antiemetics may decrease these reactions. Febrile reaction usually subsides within 4 hr after the infusion is completed.
  - Assess injection site frequently for thrombophlebitis or leakage. Drug is very irritating to tissues.
  - Monitor vital signs every 15 min during test dose and every 30 min for 2–4 hr after administration.
  - Meperidine and dantrolene have been used to prevent and treat rigors. Assess respiratory status (lung sounds, dyspnea) daily. If respiratory distress occurs, discontinue infusion immediately; amphotericin may enter. Equipment for cardiopulmonary resuscitation should be readily available.

**Potential Nursing Diagnoses**
- Risk for infection (Indications)
- Implementation
- Do not confuse amphotericin B (cholesterol sulfate) with amphotericin deoxycholate, amphotericin B lipid complex (Abelcet), or amphotericin B liposome (AmBisome); they are not interchangeable.
- This drug should be administered IV only to hospitalized patients or those under close supervision. Diagnosis should be confirmed before administration.

**Amphotericin B Deoxycholate**

**IV Administration**
- **pH:** 5.7–8.0.
- **Test dose:**
  - Reconstitute 50-mg vial with 10 mL of sterile water for injection to achieve a concentration of 5 mg/mL. Reconstituted solution stable for 24 hr at room temperature or 1 wk if refrigerated. **Bolus ( Defendant):** Further dilute with 500 mL of D5W. May be diluted in 250 mL of D5W if being administered via a central venous catheter. Protect infusion from light. Infusion stable for 24 hr at room temperature or 2 days if refrigerated. To obtain test dose, withdraw 1 mg (10 mL) from 500 mL infusion and further dilute with D5W to a total volume of 20 mL. Concentration: 0.05 mg/mL. **Rate:** Infuse over 10–30 min to determine patient tolerance. **Pedic Infuse over 30–60 min.**

- **Intermittent Infusion:**
  - **Bolus:** Reconstitute and dilute 50 mg/mL as per the directions above. Concentration: Final concentration of infusion should not exceed 0.1 mg/mL for peripheral infusion or 0.25 mg/mL for central line administration. **Rate:** Infuse slowly over 6–8 hr.

**Y-Site Compatibility:**
- aldesleukin, amiodarone, dactinomycin, diltiazem, etoposide, hydromorphone, ifosfamide, lorazepam, nesiritide, octreotide, oxaliplatin, tacrolimus, teniposide, thiotepa, zidovudine.

**Y-Site Incompatibility:**
- acyclovir, alfentanil, allopurinol, amifostine, amikacin, ampicillin, ampicillin/sulbactam, amsacrine, anidulafungin, atracurium, atropine, azithromycin, bevacizumab, bleomycin, busulfan, carboplatin, carboplatin, chemotherapy, cisplatin, cyclophosphamide, cyclosporine, daunorubicin, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexrazoxane, dexamethasone, docetaxel, doxorubicin, dextran, dextrose, dexra....
**Amphotericin B Liposome**

**IV Administration**

- **pH:** 5.0–6.0
- **Test Dose:** **Diluent:** Reconstitute 50 mg vial with 10 mL and 100 mg vial with 20 mL of sterile water for injection to achieve a concentration of 5 mg/mL. Reconstituted vials are stable to 24 hr if refrigerated. Further dilution with D5W to achieve concentration below. Do not use other diluents. Infusion stable for 24 hr if refrigerated. Prevent from light. To obtain test dose, withdraw 10 mL from final preparation.

  - **Concentration:** Final concentration of infusion should be approximately 0.8 mg/mL. (range 0.16–0.83 mg/mL). **Rate:** Infuse over 15–30 min.
  - **Intermittent Infusion: Diluent:** Prepare infusion according to directions above. **Concentration:** Final concentration of infusion should be approximately 0.8 mg/mL. (range 0.16–0.83 mg/mL). **Rate:** Infuse at a rate of 1 mg/kg/hr. If patient tolerates infusion without adverse reactions, infusion time may be shortened to a minimum of 2 hr. If reactions occur or patient cannot tolerate volume, infusion time may be extended. Rapid infusions may cause hypotension, hypokalemia, and shock.

Amphotericin B Liposome

IV Administration

**pH:** 5.5–6.5

**Intermittent Infusion:** Reconstitute each 50–mg vial with 12 mL of sterile water for injection to achieve concentration of 4 mg/mL. Immediately shake vigorously for at least 30 seconds until all particulate matter is completely dispersed. Reconstituted vials are stable for 24 hr if refrigerated. Withdraw appropriate volume for dilution into a syringe. Attach the 5-micron filter to the syringe and inject syringe contents into an appropriate volume of D5W. Infusion should be administered through an in-line filter. Infuse at a rate of 2.5 mg/kg/hr via infusion pump. If infusion exceeds 2 hr, mix contents by shaking infusion bag every 2 hr. If administering through an existing line, flush line with D5W before infusion or use a separate line.

**Y-Site Compatibility:** amikacin, ampicillin, amphotericin, anidulafungin, aztreonam, bleomycin, calcium chloride, calcium gluconate, cephalogin, cephalothin, cefazolin, cefoxitin, ceftriaxone, cefuroxime, clindamycin, cyclophosphamide, cytarabine, dactinomycin, daptomycin, dexamethasone, dexamethasone phosphate, dexamethasone sodium phosphate, dexamethasone sodium succinate, doxorubicin, doxorubicin hydrochloride, doxorubicin liposomal, doxorubicin sulfate, doxorubicin sucrose, doxorubicin tartrate, doxorubicin hydrochloride liposomal, enalaprilat, ephedrine, epinephrine, etoposide, etoposide phosphate, famotidine, fenoldopam, fentanyl, fludarabine, fluorouracil, fosphenytoin, furosemide, gentamicin, gentamicin sulfate, gemcitabine, heparin, hydrocortisone, hydromorphone, idarubicin, imipenem/cilastatin, labetalol, leucovorin, levofloxacin, lido
caine, linezolid, mesna, methotrexate, methylprednisolone, metoprolol, methylprednisolone succinate, methotrexate, midazolam, mitomycin, nalbuphine, naloxone, nicardipine, ondansetron, paclitaxel, pentamidine, pento
taxel, piperacillin/tazobactam, potassium chloride, prochlorperazine, promethazine, propranolol, ranitidine, rivastigmine, romifidine, sasserine, sodium bicarbonate, sodium phosphates, teniposide, tigecycline, trimethoprim/sulfamethoxazole, vasopressin, vinca
toxins, vincristine, voriconazole, zidovudine.

**Solution Incompatibility:** saline solution.

5-micron filter needle. Each filter needle may be used to filter the contents of no more than 5 vials. Insert filter needle of syringe into bag of DSW and empty contents of syringe into bag. Protect from light. Infusion is stable for 6 hr at room temperature or 48 hr if refrigerated. Concentration: Final concentration of infusion should be 1 mg/mL, a concentration of 2 mg/mL can be used for pediatric patients or patients who cannot tolerate large volumes of fluid. **Rate:** Do not use an in-line filter. Infuse at a rate of 2.5 mg/kg/hr via infusion pump. If infusion exceeds 2 hr, mix contents by shaking infusion bag every 2 hr. If administering through an existing line, flush line with D5W before infusion or use a separate line.

**Y-Site Compatibility:** amikacin, anidulafungin, aztreonam, bleomycin, calcium chloride, cephalogin, cephalothin, cefazolin, cefoxitin, ceftriaxone, cefuroxime, clindamycin, cyclophosphamide, cytarabine, dactinomycin, daptomycin, dexamethasone, dexamethasone phosphate, dexamethasone sodium phosphate, dexamethasone sodium succinate, doxorubicin, doxorubicin hydrochloride, doxorubicin liposomal, doxorubicin sulfate, doxorubicin sucrose, doxorubicin tartrate, doxorubicin hydrochloride liposomal, enalaprilat, ephedrine, epinephrine, etoposide, etoposide phosphate, famotidine, fenoldopam, fentanyl, fludarabine, fluorouracil, fosphenytoin, furosemide, gentamicin, gentamicin sulfate, gemcitabine, heparin, hydrocortisone, hydromorphone, idarubicin, imipenem/cilastatin, labetalol, leucovorin, levofloxacin, lido
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