quinupristin/dalfopristin
(kwin-oo-pris-tin/dal-foe-pris-tin)

General

Classification

Therapeutic: anti-infective
Pharmacologic: streptogramins

Pregnancy Category B

Indications

Complicated skin/skin structure infections caused by Staphylococcus aureus (methicillin-susceptible) or Streptococcus pyogenes.

Action

Quinupristin inhibits the late phase of protein synthesis at the level of the bacterial ribosome; dalfopristin inhibits the early phase. Therapeutic Effects: Bacteriostatic effect against susceptible organisms.

Spectrum: Active against S. aureus (methicillin-susceptible) and S. pyogenes. Not active against Enterococcus faecalis or Enterococcus faecium.

Pharmacokinetics

Absorption: IV administration results in complete bioavailability.

Distribution: Unknown.

Protein Binding: Moderate.

Metabolism and Excretion: Both are converted to compounds with additional anti-infective activity; parent drugs and metabolites are mostly excreted in feces (75–77%); 15% of quinupristin and 17% of dalfopristin excreted in urine.

Half-life: Quinupristin—0.85 hr; dalfopristin—0.7 hr.

TIME/ACTION PROFILE

ROUTE ONSET PEAK DURATION
IV rapid end of infusion 8–12 hr

Contraindications/Precautions

Contraindicated in: Hypersensitivity.

Use Cautiously in: Concurrent use of other drugs metabolized by the cytochrome P450 3A4 enzyme system (serious interactions may occur); Hepatic impairment (dose adjustment may be necessary); Patients with a history of GI disease, especially colitis. GI, Lactation, Pediatric: Pregnancy, lactation, or children <12 yr (safety not established).

Adverse Reactions/Side Effects

CNS: headache.

CV: thrombophlebitis.

GI: PSEUDOMEMBRANOUS COLITIS, diarrhea, nausea, vomiting. Derm: pruritus, rash. Local: infusion site reactions. Misc: allergic reactions including ANAPHYLAXIS.

Interactions

Drug-Drug: Inhibits the cytochrome P450 3A4 drug metabolizing enzyme system; inhibits metabolism of cyclosporine, midazolam, and nifedipine and the risk of toxicity (careful monitoring required). Similar effects may be expected with concurrent use of delavirdine, nevirapine, indinavir, ritonavir, vinca alkaloids, docetaxel, paclitaxel, diazepam, verapamil, diltiazem, HMG CoA reductase inhibitors, tacrolimus, methylenedioxymethamphetamine, lidocaine, and disopyramide.

Route/Dosage

IV (Adults and Children 12–17 yr): 7.5 mg/kg q 12 hr for at least 7 days.

NURSING IMPLICATIONS

Assessment

• Assess patient for infection (vital signs; appearance of wound, sputum, urine, and stool, WBC) at beginning of and throughout therapy.

• Obtain specimens for culture and sensitivity before initiating therapy. First dose may be given before receiving results.

• Monitor patient for pain or inflammation at the infusion site frequently throughout infusion. Increasing the volume of diluent from 250 mL to 500 mL or 750 mL or infusing via a peripherally inserted central catheter or central venous catheter may be required.

• Observe patient for signs and symptoms of anaphylaxis (rash, pruritus, laryngeal edema, wheezing). Discontinue drug and notify physician or
other health care professional immediately if these problems occur. Keep epinephrine, an antihistamine, and resuscitation equipment close by in case of an anaphylactic reaction.

- Assess patient for myalgia and arthralgia after infusion. May be severe. Reducing dose increment to every 12 hr may decrease pain. Symptoms usually resolve upon discontinuation of medication.

**Lab Test Considerations:** May cause q

**Potential Nursing Diagnoses**
- Risk for infection (Indications) (Side Effects)
- Diarrhea (Adverse Reactions)

**Implementation**

- **IV Administration**
  - **pH:** 5.0.
  - **Intermittent Infusion:** Reconstitute the 500-mg vial with 5 mL and the 600-mg vial with 6 mL of D5W or sterile water for injection, respectively, for a concentration of 100 mg/mL. Avoid shaking to prevent foam formation. Allow solution to sit until all foam has disappeared.
  - **Diluent:** Dilute further with 250 mL of D5W (100 mL can be used for central line administration). Max dilution 500 mL or 750 mL of D5W (less venous irritation occurs after peripheral administration). Reconstituted vials should be used within 30 min. Infusion is stable for 5 hr at room temperature or 24 hr if refrigerated. Rate: Infuse over 60 min. Flush line before and after infusion with D5W.
  - **Y-Site Compatibility:** alemtuzumab, alfentanil, amikacin, amiodarone, anidulafungin, argatroban, aztreonam, bleomycin, buprenorphine, busulfan, butorphanol, carboplatin, carmustine, caspofungin, chlorpromazine, ciprofloxacin, cisatracurium, cisplatin, cyclophosphamide, cyclosporine, cytarabine, dacarbazine, daptomycin, daunorubicin, dexmedetomidine, dexrazoxane, diltiazem, diphenhydramine, doxorubicin, doxycycline, droperidol, enalaprilat, ephedrine, epinephrine, epirubicin, esmolol, etoposide, etoposide phosphate, fenoldopam, fentanyl, fluconazole, gemcitabine, granisetron, haloperidol, hydromorphone, idarubicin, ifosfamide, isoproterenol, labetalol, levodopa, levomethadone, lidocaine, linezolid, lorazepam, magnesium sulfate, mannitol, meclizine, meloxicam, metoclopramide, methylpredni

**Patient/Family Teaching**
- Instruct patient to notify health care professional if signs and symptoms of anaphylaxis, fever and diarrhea develop, especially if stool contains blood, pus, or mucus. Advise patient not to treat diarrhea without consulting health care professional.

**Evaluation/Desired Outcomes**
- Resolution of signs and symptoms of anaphylaxis. Length of time for complete resolution depends on the organism and site of infection.

Why was this drug prescribed for your patient?