

Cefoperazone

Antibiotic Class:

Third-Generation Cephalosporin

Antimicrobial Spectrum:

Staphylococcus aureus (methicillin susceptible), Coagulase negative Staphylococci, *Streptococcus pneumoniae* (penicillin susceptible), *Streptococcus spp.*, *Haemophilus influenzae*, *Moraxella catarrhalis*, *Neisseria meningitides*, *Neisseria gonorrhoeae*, *Enterobacteriaceae*, *E. coli*

Mechanism of Action:

Cephalosporins exert bactericidal activity by interfering with bacterial cell wall synthesis and inhibiting cross-linking of the peptidoglycan. The cephalosporins are also thought to play a role in the activation of bacterial cell autolysins which may contribute to bacterial cell lysis.

Pharmacodynamics:

Cephalosporins exhibit time-dependent killing ($T > MIC$)

Pharmacokinetics:

Dose of 1g: Cmax: 153mcg/L; Half-life: 2.1 hours; Volume of distribution: 11L; Table 11

Adverse Effects:

Hypersensitivity: Maculopapular rash, Urticaria, Pruritis, Anaphylaxis/angioedema, eosinophilia

Hematologic: Hypoprothrombinemia, Neutropenia, Leukopenia, Thrombocytopenia

GI: Diarrhea, *C. difficile* disease

Renal: Interstitial nephritis

Table 14

Dosage:

IV: 1g, 2g, 10g vials

Dosing in adults:

Skin and/or subcutaneous tissue infections: 2-4g/day divided IV q12h

Pelvic inflammatory disease: 2-4g/day divided IV/IM q12h

Respiratory tract infection: 2-4 g/day divided IV/IM q12h

Endometritis: 2-4 g/day divided IV/IM q12h

Dosing in pediatrics:

100-150mg/kg/day divided q8-12h

Table 12

Disease state based dosing:

Renal failure: No dosing changes recommended at this time.

Hepatic failure: No dosing changes recommended at this time.

Contraindications/Warnings/Precautions:

Precautions: hypersensitivity to penicillins, history of gastrointestinal disease, particularly colitis, renal impairment, dosage reduction may be necessary in patients with liver dysfunction, concomitant alcohol use (disulfiram-like reaction), patients with a poor nutritional status, malabsorption states (eg, cystic fibrosis), alcoholism, and patients on prolonged hyperalimentation regimens are at high risk for cefoperazone-induced vitamin K deficiency

Drug Interactions:

Heparin: an increased risk of bleeding

Live Typhoid Vaccine: decreased immunological response to the typhoid vaccine

Warfarin: an increased risk of bleeding

Pregnancy:

Category B: No evidence of risk in humans but studies inadequate.

Monitoring Requirements:

Therapeutic: Culture and sensitivities, serum levels, signs and symptoms of infection, white blood cell count

Toxic: Urinalysis, BUN, SCr, AST and ALT, skin rash, Neutropenia and leukopenia, Prothrombin time in patients with renal or hepatic impairment or poor nutritional state, as well as patients receiving a protracted course of antimicrobial therapy, and patients previously stabilized on anticoagulant therapy.

Brand names/Manufacturer: Cephobid→/Pfizer, Sulperazone→/Pfizer