

Ceftizoxime

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 meningitidis*, *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: 84 mcg/L; Half-life: 1.8 hours; Volume of distribution: 28L; 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: Powder for reconstitution: 500mg, 1g, 2g, 10g, 20g

Intravenous Solution: 1g/50mL, 2 g/50mL

Dosing in adults:

Gonorrhea: 1 g IM x 1 dose

Skin and/or subcutaneous tissue infection: 1 g IV/IM q8-12h

Intra-abdominal infection: 1 g IV/IM q8-12h

Meningitis: 1 g IV/IM q8h or 2g IV/IM q8-12h

UTI: 1-2 g IV/IM q8-12h

Dosing in pediatrics:

100-200mg/kg/day divided q6-8h

Table 12

Disease state based dosing:

Renal failure: CrCl > 80mL/min: standard dosing

CrCl 50-80mL/min: 0.75g-1.5g q8h

CrCl 5-49mL/min: 0.5g-1g q12h

CrCl < 5mL/min: 0.5g q24h OR 1q q48h

Hepatic failure: No dosing changes recommended at this time.

Contraindications/Warnings/Precautions:

Precautions: hypersensitivity to penicillins, history of gastrointestinal disease, particularly colitis, renal impairment

Drug Interactions:

Live Typhoid Vaccine: decreased immunological response to the typhoid vaccine

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: Cefizox®/Fujisawa