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 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: 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, 2g/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