

Cefadroxil

Antibiotic Class:

First-Generation Cephalosporin

Antimicrobial Spectrum:

Gram-positive bacteria: Methicillin-susceptible *Staphylococcus aureus* (MSSA), coagulase – negative *Staphylococci*, penicillin-susceptible *Streptococcus pneumoniae*, *Streptococci spp.*

Gram-negative bacteria: *Moraxella catarrhalis*, *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus mirabilis*

Mechanism of Action:

Cephalosporins exert bactericidal activity by interfering with the later stages of bacterial cell wall synthesis through inactivation of one or more penicillin-binding proteins and inhibiting cross-linking of the peptidoglycan structure. 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 produce time-dependent killing

Pharmacokinetics:

500mg dose; Cmax: 16.2 mcg/ml; Half-life: 1.9 mcg/ml; Protein binding: 18-20%; Table 10

Adverse Effects:

Hematologic: Neutropenia, leukopenia, eosinophilia, thrombocytopenia, thrombocytosis, impaired platelet aggregation

Dermatologic: Rash (maculopapular), puritis, urticaria

Gastrointestinal: Diarrhea

Hepatic: Abnormal liver function tests

Renal: Interstitial nephritis

Other: Anaphylaxis

Dosage:

PO: 500mg capsule, 1gram tablet

125mg/5ml, 250mg/5ml, 500mg/5ml powder for reconstitution (suspension)

Adult doses: 0.5-1gram PO q12-24h

Pharyngitis/tonsillitis: 1gram PO q24h or divided q12h x 10 days

Skin/skin structure infection: 1gram PO q24h or divided q12h

Urinary tract infection (uncomplicated): 1-2grams PO q24h or divided q12h

Urinary tract infection (complicated): 1gram PO q12h

Pediatric doses: 30mg/kg/day divided q12-24h

Impetigo: 30 mg/kg PO q24h or divided q12h, maximum 2grams per day

Pharyngitis/tonsillitis: 30 mg/kg PO q24h or divided q12h x 10 days, maximum 2grams per day

Skin/skin structure infection: 30 mg/kg/day PO divided q12h, maximum 2grams per day

Urinary tract infection: 30 mg/kg/day PO divided q12h, maximum 2grams per day

Disease state based dosing:

Renal failure: CrCl greater than 50 mL/min, usual dose and interval
CrCl 25-50 mL/min, 500 mg every 12 hr
CrCl 10-25 mL/min, 500 mg every 24 hr
CrCl less than 10 mL/min, 500 mg every 36 hr

Hepatic failure: No dosing changes recommended at this time.

Contraindications/Warnings/Precautions:

Contraindications: Hypersensitivity to cephalosporins

Precautions: hypersensitivity to penicillins

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, signs and symptoms of infection (e.g. fever, WBC)

Toxic: Urinalysis, BUN, SCr, AST and ALT, neutropenia and leukopenia