

Cefaclor

Antibiotic Class:

Second-Generation Cephalosporin (true 2nd 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*

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 500mg: Cmax: 17.3 mcg/L; Tmax: 0.7 hours; Half-life: 0.6 hours; Table 10

Adverse Effects:

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

Hematologic: Neutropenia, Leukopenia, Thrombocytopenia

GI: Diarrhea, *C. difficile* disease

Renal: Interstitial nephritis

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Dosage:

PO: 250mg, 500mg capsules

Powder for Suspension: 125mg/5mL, 187mg/5mL, 250 mg/5mL, 375mg/5mL

Chewable tablets: 125mg, 187mg, 250mg, 375mg

Extended release tablets: 375mg, 500mg

Dosing in adults:

Acute exacerbation of chronic bronchitis: 500 mg extended release tablets PO q12h x 7 days

Acute otitis media: 250mg to 500mg tablets PO q8h

Lower respiratory tract infection: 250mg to 500mg tablets PO q8h

Urinary tract infection: 250mg to 500mg tablets PO q8h

Dosing in pediatrics:

20-40mg/kg divided PO q8h

Disease state based dosing:

Renal failure: Caution with markedly impaired renal function; dose adjustment for moderate to severe renal impairment not usually recommended

Hepatic failure: No dosing changes recommended at this time.

Contraindications/Warnings/Precautions:

Precautions: Hypersensitivity to penicillins, 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: Ceclor®/Eli Lilly; Ceclor CD®/Dura Pharmaceuticals; Cefaclor Extended Release®/Ivax Pharmaceuticals