Cefdinir

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 bacterical cell autolysins which may contribute to bacterial cell lysis.

Pharmacodynamics:
Cephalosporins exhibit time-dependent killing (T > MIC)

Pharmacokinetics:
Dose of 600mg: Cmax: 2.4 mcg/L; Tmax: 3.2 hour; Half-life: 1.5 hours; Table 10

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:
PO: 300mg capsule
Powder for Reconstitution: 125mg/5mL, 250mg/5mL

Dosing in adults:
Acute exacerbation of chronic bronchitis: 300mg PO q12h x 5-10 days OR 600mg PO q24h x 10 days
Community acquired pneumonia: 300mg PO q12h x 10 days
Acute maxillary sinusitis: 300mg PO q12h OR 600mg PO q24h x 10 days
Pharyngitis: 300 mg PO q12h x 5-10 days OR 600mg PO q24h x 10 days

Dosing in pediatrics:
7-14mg/kg/day divided q12-24h
Table 12

Disease state based dosing:
Renal failure: adults: CrCl < 30mL/min, 300mg q24h

children: CrCl < 30mL/min/1.73 m^2, 7 mg/kg q24h (up to 300 mg/day)
Hepatic failure: No dosing changes recommended at this time.

Contraindications/Warnings/Precautions:
Precautions: hypersensitivity to penicillins, history of gastrointestinal disease, particularly colitis, renal impairment, bleeding disorders (like other cephalosporins, cefdinir may be capable of producing hypoprothrombinemia)

Drug Interactions:
Antacids: decreased cefdinir efficacy
Live Typhoid Vaccine: decreased immunological response to the typhoid vaccine
Iron**:** decreased cefdinir efficacy
Probenecid: increased cefdinir bioavailability

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: Omnicef®/Abbott