Ceftibuten

**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 400mg: Cmax: 17 mcg/L; Tmax: 2.0 hour; Half-life: 2.3 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: 400mg tablets
Powder for Suspension: 90mg/5mL, 180mg/5mL

Dosing in adults:
- Tonsillitis: 400 mg PO q24h x 10 days
- Otitis media: 400 mg PO q24h x 10 days
- Pharyngitis: 400 mg PO q24h x 10 days
- Acute exacerbation of chronic bronchitis: 400mg PO q24h x 10 days

Dosing in pediatrics:
- 9mg/kg/day q24h
Table 12

Disease state based dosing:
Renal failure: CrCl > 50 mL/min: Standard dosing
CrCl 30-49 mL/min: 200mg q24h OR 4.5mg/kg q24h
CrCl 5-29 mL/min: 100mg q24h OR 2.25mg/kg q24h
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:**
Cimetidine: an increased risk of ceftibuten adverse effects
Famotidine: an increased risk of ceftibuten adverse effects
Live Typhoid Vaccine: decreased immunological response to the typhoid vaccine
Nizatidine: an increased risk of ceftibuten adverse effects
Ranitidine: an increased risk of ceftibuten adverse effects

**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:** Cedax®/Schering