Cefuroxime

**Antibiotic Class:**
Second-Generation Cephalosporin (true 2\textsuperscript{nd} 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*, *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 500mg: Cmax: 7 mcg/L; Tmax: 3 hours; Half-life: 1.2 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
Table 14

**Dosage:**
PO: 125mg, 250mg, 500mg tablet
Powder for Suspension: 125mg/5mL, 250mg/5mL

IV: Injection Powder for Solution: 1.5g, 7.5g, 75g, 225g, 750g
Intravenous Solution: 1.5g/50mL, 750mg/50mL

Dosing in adults
Acute exacerbation of chronic bronchitis: 250mg to 500mg PO q12h x 10 days
Uncomplicated UTI: 125mg - 250mg PO q12h x 7-10 days
Gonorrhea: 1g PO x 1 dose
Lower respiratory tract infection: 750mg - 1.5g IV/IM q8h
Bone/joint infection: 1.5 g IV/IM q8h
Table 12

Dosing in pediatrics:
PO: 30mg/kg/day divided q12h
IV/IM: 50-100mg/kg/day divided q6 to q8h
Disease state based dosing:
Renal failure (IV dosing):  CrCl > 20mL/min: Standard dosing
                 CrCl 10-20mL/min: 0.75g q12h
                 CrCl < 10mL/min: 0.75g q12h

Table 13
Hepatic failure:  No dosing changes recommended at this time.

**Contraindications/Warnings/Precautions:**
Contraindications:  Hypersensitivity to cephalosporins
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:**
Available by many names and manufacturers