Cephradine

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 bactericidal cell autolysins which may contribute to bacterial cell lysis.

Pharmacodynamics:
Cephalosporins produce time-dependent killing

Pharmacokinetics:
500mg dose; Cmax: 17.7mcg/ml; Half-life: 0.6hours; Protein-binding: 10-20%; 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: 250mg, 500mg capsule
250mg/5ml powder for reconstitution (suspension)

Adult dose: 0.5-1g PO q6-12h
Respiratory tract infection: 250mg PO q6h or 500mg PO q12h;
Pneumonia, 500mg PO q6h or 1g PO q12h
Skin/skin structure infection: 250mg PO q6h or 500 mg PO q12h
Urinary tract infection (uncomplicated)L 500 mg PO q12h
(severe) 500 mg PO q6h
(severe or chronic) up to 1 g PO q6h

Pediatric dose: 75-100mg/kg/d, divided q6-12h
Otitis media: 25-50 mg/kg/day PO divided q6-12h;
(due to *H. influenzae*): 75-100 mg/kg/day PO divided q6-12h - maximum 4g per day

Disease state based dosing:
Renal failure: CrCl 10-50 mL/min, 50% of usual dose at normal interval
CrCl less than 10 mL/min, 25% of usual dose at normal interval
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, serum levels, signs and symptoms of infection (e.g. fever, WBC)
Toxic: Urinalysis, BUN, SCr, AST and ALT, skin rash, neutropenia and leukopenia

**Brand names/Manufacturer:**