

Ampicillin/sulbactam

Antibiotic Class:

Beta-lactam/beta-lactamase inhibitor

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:

The beta-lactamase inhibitors are recognized as substrates for the beta-lactamases produced by bacteria. This allows the actual beta-lactams to attack the bacterial cell wall by binding to penicillin binding proteins

Pharmacodynamics

Time dependent killer (Time > MIC)

Pharmacokinetics:

(of the sulbactam)

Dose 500mg

Cmax: 20-43 mcg/L

Protein binding: 38%

Volume of distribution: 0.16-0.5L/kg

Table 5

Adverse Reactions:

No new adverse effects are seen as a result of adding beta-lactamase inhibitors to beta-lactam antibiotics. The adverse reactions would remain the same for the parent compound

Dosage:

IV: Complete listing on Table 6

Dosing in adults:

Mild/Moderate: 1.5g q6-8h

Severe: 3g q6h

Dosing in pediatrics:

Mild/Moderate: 150-300mg/kg/day divided q6h

Severe: 150-300mg/kg/day divided q6h

Table 8

Disease state based dosing:

Renal failure: CrCl > 30mL/min: 1.5-3g q6-8h
CrCl 15-29mL: 1.5-3g q8-12h
CrCl 5-14mL/min: 1.5-3g q12-24h

Hepatic failure: No dosing changes recommended at this time.

Dosing during Continuous Renal Replacement Therapy

CVVH (Continuous venovenous hemofiltration): 3g IV q12h

CVVHD (Continuous venovenous hemodialysis): 3g IV q8h

CVVHDF (Continuous venovenous hemodiafiltration) 3g IV q8h

Note: CVVH is mainly for fluid removal alone. Many institutions will employ more CVVHD or CVVHDF which combine dialysis with fluid removal.

Contraindications/Warnings/Precautions:

Precautions: hypersensitivity to penicillins, history of gastrointestinal disease, particularly colitis, renal impairment

Drug Interactions:

See ampicillin

Pregnancy Risk Factor:

B

Monitoring parameters:

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,

Brand names/Manufacturer: Unasyn/Pfizer pharmaceuticals