Ceftazidime:

Class: Antibiotic

Indications:

Treatment of documented susceptible *Pseudomonas aeruginosa* infection and infections due to other susceptible aerobic gram-negative organisms; empiric therapy of a febrile, granulocytopenic patient.

Available dosage form in the hospital: 1GM VIAL, 500MG VIAL.

Trade Names:

Dosage:

-Bacterial arthritis (gram negative bacilli): I.V.: 1-2 g every 8 hours

-Bone and joint infections: I.V.: 2 g every 12 hours

-Cystic fibrosis, lung infection caused by *Pseudomonas* spp: I.V.: 30-50 mg/kg/dose every 8 hours (maximum: 6 g daily)

-Endophthalmitis, bacterial (unlabeled use): Intravitreal: 2-2.25 mg/0.1 mL NS in combination with vancomycin (Jackson, 2003; Roth, 1997)

-Intra-abdominal infection, severe (in combination with metronidazole): I.V.: 2 g every 8 hours for 4-7 days (provided source controlled). Not recommended for hospital-acquired intra-abdominal infections (IAI) associated with multidrug-resistant gram negative organisms or in mild-to-moderate community-acquired IAIs due to risk of toxicity and the development of resistant organisms (Solomkin, 2010).

-Melioidosis: I.V.: 40 mg/kg/dose every 8 hours for 10 days, followed by oral therapy with doxycycline or TMP/SMX

-Otitis externa: I.V.: 2 g every 8 hours

-Peritonitis (CAPD):

-*Anuric, intermittent:* 1-1.5 g daily

-*Anuric, continuous (per liter exchange):* Loading dose: 250 mg; maintenance dose: 125 mg

-Pneumonia: I.V.:

-*Uncomplicated:* 500 mg to 1 g every 8 hours

-*Complicated or severe:* 2 g every 8 hours

-Prosthetic joint infection, *Pseudomonas aeruginosa* (alternative to cefepime or meropenem): I.V.: 2 g every 8 hours for 4-6 weeks (consider addition of an aminoglycoside) (Osmon, 2013)

-Skin and soft tissue infections: I.V., I.M.: 500 mg to 1 g every 8 hours

-Severe infections, including meningitis, complicated pneumonia, endophthalmitis, CNS infection, osteomyelitis, gynecological, skin and soft tissue: I.V.: 2 g every 8 hours

-Urinary tract infections: I.V., I.M.:

-*Uncomplicated:* 250 mg every 12 hours

-*Complicated:* 500 mg every 8-12 hours

-Renal Impairment:

-Cl_{cr} 30-50 mL/minute: Administer every 12 hours

-Cl_{cr} 10-30 mL/minute: Administer every 24 hours

-Cl_{cr} <10 mL/minute: Administer every 48-72 hours

-Intermittent hemodialysis (IHD) (administer after hemodialysis on dialysis days): Dialyzable (50% to 100%): 500 mg to 1 g every 24 hours **or** 1-2 g every 48-72 hours (Heintz, 2009). **Note:** Dosing dependent on the assumption of 3 times per week, complete IHD sessions.

-Peritoneal dialysis (PD): Loading dose of 1 g, followed by 500 mg every 24 hours

-Continuous renal replacement therapy (CRRT) (Heintz, 2009; Trotman, 2005): Drug clearance is highly dependent on the method of renal replacement, filter type, and flow rate. Appropriate dosing requires close monitoring of pharmacologic response, signs of adverse reactions due to drug accumulation, as well as drug concentrations in relation to target trough (if appropriate). The following are general recommendations only (based on dialysate flow/ultrafiltration rates of 1-2 L/hour and minimal residual renal function) and should not supersede clinical judgment:

-CVVH: Loading dose of 2 g followed by 1-2 g every 12 hours

-CVVHD/CVVHDF: Loading dose of 2 g followed by either 1 g every 8 hours **or** 2 g every 12 hours. **Note:** Dosage of 1 g every 8 hours results in similar steady-state concentrations as 2 g every 12 hours and is more cost effective. Dosage of 2 g every 8 hours may be needed for gram-negative rods with MIC ≥4 mg/L (Heintz, 2009).

Note: For patients receiving CVVHDF, some recommend giving a loading dose of 2 g followed by 3 g over 24 hours as a continuous I.V. infusion to maintain concentrations ≥4 times the MIC for susceptible pathogens (Heintz, 2009).

Common side effect: Diarrhea , Pain at injection site

Pregnancy Risk Factor: B