

Imipenem/cilastatin:

Class: Antibiotic.

Indications:

Treatment of lower respiratory tract, urinary tract, intra-abdominal, gynecologic, bone and joint, skin and skin structure, endocarditis (caused by *Staphylococcus aureus*) and polymicrobial infections as well as bacterial septicemia. Antibacterial activity includes gram-positive bacteria (methicillin-sensitive *S. aureus* and *Streptococcus* spp), resistant gram-negative bacilli (including extended spectrum beta-lactamase-producing *Escherichia coli* and *Klebsiella* spp, *Enterobacter* spp, and *Pseudomonas aeruginosa*), and anaerobes.

Available dosage form in the hospital: 500MG VIAL

Trade Names:

Dosage:

-Usual dosage range: Weight ≥ 70 kg: 250-1000 mg every 6-8 hours; maximum: 4 g/day. **Note:** For adults weighing < 70 kg, refer to Dosing Adjustment in Renal Impairment.

-Indication-specific dosing:

-*Burkholderia pseudomallei* (melioidosis) (unlabeled use): I.V.: Initial: 20 mg/kg every 8 hours for at least 10 days (White, 2003) or 25 mg/kg (up to 1 g) every 6 hours for at least 10 days (Currie, 2003); continue parenteral therapy until clinical improvement then switch to oral therapy if tolerated and/or appropriate.

-Intra-abdominal infections: I.V.:

-Mild infection: 250-500 mg every 6 hours

-Severe infection: 500 mg every 6 hours **or** 1 g every 8 hours for 4-7 days (provided source controlled). **Note:** Not recommended for mild-to-moderate, community-acquired intra-abdominal infections due to risk of toxicity and the development of resistant organisms (Solomkin, 2010)

-Liver abscess (unlabeled use): I.V.: 500 mg every 6 hours for 4-6 weeks (Ulug, 2010)

-Moderate infections: I.V.:

-Fully-susceptible organisms: 500 mg every 6-8 hours

-Moderately-susceptible organisms: 500 mg every 6 hours or 1 g every 8 hours

-Neutropenic fever (unlabeled use): I.V.: 500 mg every 6 hours (Paul, 2006)

-*Pseudomonas* infections: I.V.: 500 mg every 6 hours; **Note:** Higher doses may be required based on organism sensitivity.

-Severe infections: I.V.:

-Fully-susceptible organisms: 500 mg every 6 hours

-Moderately-susceptible organisms: 1 g every 6-8 hours

-Maximum daily dose should not exceed 50 mg/kg or 4 g/day, whichever is lower

-Urinary tract infection, uncomplicated: I.V.: 250 mg every 6 hours

-Urinary tract infection, complicated: I.V.: 500 mg every 6 hours

-Mild infections: **Note:** Rarely a suitable option in mild infections; normally reserved for moderate-severe cases: I.V.:

-Fully-susceptible organisms: 250 mg every 6 hours

-Moderately-susceptible organisms: 500 mg every 6 hours

Reduced I.V. dosage regimen based on creatinine clearance and/or body weight:

U.S. labeling: See table.

Imipenem and Cilastatin Dosage in Renal Impairment

Reduced I.V. Dosage Regimen Based on Creatinine Clearance (mL/minute/1.73 m ²) and/or Body Weight <70 kg					
	Body Weight (kg)				
	≥70	60	50	40	30
Total daily dose for normal renal function: 1 g/day					
Cl _{cr} ≥71	250 mg q6h	250 mg q8h	125 mg q6h	125 mg q6h	125 mg q8h
Cl _{cr} 41-70	250 mg q8h	125 mg q6h	125 mg q6h	125 mg q8h	125 mg q8h
Cl _{cr} 21-40	250 mg q12h	250 mg q12h	125 mg q8h	125 mg q12h	125 mg q12h
Cl _{cr} 6-20	250 mg q12h	125 mg q12h	125 mg q12h	125 mg q12h	125 mg q12h

Imipenem and Cilastatin Dosage in Renal Impairment

Reduced I.V. Dosage Regimen Based on Creatinine Clearance (mL/minute/1.73 m²) and/or Body Weight <70 kg					
	Body Weight (kg)				
	≥70	60	50	40	30
Total daily dose for normal renal function: 1.5 g/day					
Cl_{cr} ≥71	500 mg q8h	250 mg q6h	250 mg q6h	250 mg q8h	125 mg q6h
Cl_{cr} 41-70	250 mg q6h	250 mg q8h	250 mg q8h	125 mg q6h	125 mg q8h
Cl_{cr} 21-40	250 mg q8h	250 mg q8h	250 mg q12h	125 mg q8h	125 mg q8h
Cl_{cr} 6-20	250 mg q12h	250 mg q12h	250 mg q12h	125 mg q12h	125 mg q12h
Total daily dose for normal renal function: 2 g/day					
Cl_{cr} ≥71	500 mg q6h	500 mg q8h	250 mg q6h	250 mg q6h	250 mg q8h
Cl_{cr} 41-70	500 mg q8h	250 mg q6h	250 mg q6h	250 mg q8h	125 mg q6h
Cl_{cr} 21-40	250 mg q6h	250 mg q8h	250 mg q8h	250 mg q12h	125 mg q8h
Cl_{cr} 6-20	250 mg q12h	250 mg q12h	250 mg q12h	250 mg q12h	125 mg q12h
Total daily dose for normal renal function: 3 g/day					
Cl_{cr} ≥71	1000 mg q8h	750 mg q8h	500 mg q6h	500 mg q8h	250 mg q6h
Cl_{cr} 41-70	500 mg q6h	500 mg q8h	500 mg q8h	250 mg q6h	250 mg q8h
Cl_{cr} 21-40	500 mg q8h	500 mg q8h	250 mg q6h	250 mg q8h	250 mg q8h
Cl_{cr} 6-20	500 mg q12h	500 mg q12h	250 mg q12h	250 mg q12h	250 mg q12h
Total daily dose for normal renal function: 4 g/day					
Cl_{cr} ≥71	1000 mg q6h	1000 mg q8h	750 mg q8h	500 mg q6h	500 mg q8h

Imipenem and Cilastatin Dosage in Renal Impairment

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	Body Weight (kg)				
	≥70	60	50	40	30
Cl _{cr} 41-70	750 mg q8h	750 mg q8h	500 mg q6h	500 mg q8h	250 mg q6h
Cl _{cr} 21-40	500 mg q6h	500 mg q8h	500 mg q8h	250 mg q6h	250 mg q8h
Cl _{cr} 6-20	500 mg q12h	500 mg q12h	500 mg q12h	250 mg q12h	250 mg q12h

Common side effect:

Cardiovascular: Tachycardia

Central nervous system: Seizure

Dermatologic: Rash

Gastrointestinal: Nausea , diarrhea ,vomiting .

Pregnancy Risk Factor: C