



Pick Your Poison: β -Lactams in CAP

Certain β -lactams are recommended for treating community-acquired pneumonia (CAP) due to their activity against the most common bacterial pathogens including *Streptococcus pneumoniae*, *Moraxella catarrhalis*, and *Haemophilus influenzae*. The 2019 IDSA CAP guidelines recommend ampicillin-sulbactam, cefotaxime, ceftriaxone, or ceftaroline in combination with a macrolide for inpatient management of CAP without risk factors for MRSA or *Pseudomonas aeruginosa*.¹ When it comes to selecting a β -lactam, how do you pick your poison?

Antibiotic Considerations

β -lactam selection is based on ease of administration, risk for *C. difficile* infection, risk for the emergence of antimicrobial resistant pathogens, and cost.

	Ampicillin-sulbactam	Ceftriaxone	Cefotaxime	Ceftaroline
Adverse effects	Comparable			
Administration	4x daily	Once daily	3x daily	Twice daily
<i>C. difficile</i> infection risk²	Moderate	High	High	High
Antimicrobial Stewardship Considerations	High rates of resistance in <i>E. coli</i> . Limited utility in UTI or intra-abdominal infections. Easy IV to PO switch with amoxicillin/clavulanate.	Good activity against <i>E. coli</i> . Workhorse agent in UTI and intra-abdominal infections. ³ Consider preserving.		Unnecessary MRSA activity in CAP without risk factors. Highly active against <i>E. coli</i>
Cost	Comparable			High

Key Takeaway: When selecting β -lactams for CAP, important considerations include ease of administration, [C. difficile risk](#), and unnecessary broad-spectrum of activity that should be preserved for other infections.

References:

1. Metlay JP, Waterer GW, Long AC, et al. Diagnosis and Treatment of Adults with Community-acquired Pneumonia. An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America. *Am J Respir Crit Care Med.* 2019;200(7):e45-e67. doi:10.1164/rccm.201908-1581ST
2. Slimings C, Riley TV. Antibiotics and hospital-acquired *Clostridium difficile* infection: update of systematic review and meta-analysis. *J Antimicrob Chemother.* 2014;69(4):881-891. doi:10.1093/jac/dkt477
3. Mazuski JE, Tessier JM, May AK, et al. The Surgical Infection Society Revised Guidelines on the Management of Intra-Abdominal Infection. *Surg Infect (Larchmt).* 2017;18(1):1-76. doi:10.1089/sur.2016.261