



Empiric Pip-Tazo in Intra-Abdominal Infections

Empiric antibiotics recommended for community-acquired intra-abdominal infections should provide activity against Enterobacterales (e.g. *E. coli*), aerobic streptococci, and [obligate anaerobic bacteria](#) (e.g. *Bacteroides fragilis*). Recommended regimens from 2017 Surgical Infection Society (SIS) Intra-abdominal Infection Guidelines include ceftriaxone, cefotaxime, or ciprofloxacin, all in combination with metronidazole.¹ However, [antipseudomonals](#) such as piperacillin-tazobactam are often ordered. Is this appropriate?

What do guidelines say?

The 2017 SIS guidelines recommend piperacillin-tazobactam be used in **higher risk** community-acquired intra-abdominal infections and **healthcare-associated** intra-abdominal infections. Piperacillin-tazobactam should be reserved to decrease the emergence of antimicrobial resistance.¹

What is the evidence?

In a retrospective cohort study comparing antipseudomonal antibiotics to narrow spectrum antibiotics in community-acquired [diverticulitis](#) and [appendicitis](#), most patients in the antipseudomonal arm were treated with piperacillin-tazobactam (61.7%) and most patients in the narrow-spectrum arm were treated with ceftriaxone and metronidazole (79.3%). There were no difference in 90-day treatment complications, hospital length of stay, 90-day readmission, *Clostridioides difficile* infection, or mortality.²

In another retrospective cohort study comparing piperacillin-tazobactam to ceftriaxone and metronidazole for complicated diverticulitis, ceftriaxone and metronidazole was found to be non-inferior to piperacillin-tazobactam in 30-day readmission or all-cause mortality. There were no differences in 30-day antibiotic failure or 90-day *C. difficile* infection.³

Key Takeaway: Piperacillin-tazobactam should NOT be used empirically in low-risk community-acquired intra-abdominal infections. Narrow spectrum therapies like ceftriaxone and metronidazole should be used to preserve broader-spectrum antibiotics like piperacillin-tazobactam for high-risk patients and those with healthcare-associated intra-abdominal infections.

References:

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2. Worden LJ, Dumkow LE, VanLangen KM, Beuschel TS, Jameson AP. Antipseudomonal Versus Narrow-Spectrum Agents for the Treatment of Community-Onset Intra-abdominal Infections. *Open Forum Infect Dis*. 2021;8(11):ofab514. Published 2021 Nov 15. doi:10.1093/ofid/ofab514
3. Carns W, Arndt R, Ausman S, et al. Clinical impacts of utilizing ceftriaxone and metronidazole versus piperacillin/tazobactam in patients diagnosed with complicated diverticulitis. *Am J Surg*. 2025;241:116195. doi:10.1016/j.amjsurg.2025.116195