



Prostate Pearls: Antimicrobials for Acute Bacterial Prostatitis

Infection in the prostate may develop due to introduction of contaminated urine via the urethra.¹ Main pathogens responsible for acute bacterial prostatitis (ABP) are gram negatives. *E. coli* is the predominant organism (52%-87%), followed by *P. aeruginosa* (3%-16%), *Klebsiella* spp. (3%-10%) and *Proteus* spp. (3%-6%)¹⁻² As with other infections, considerations for drug penetration into the site of infection are important to ensure adequate therapy. What are some considerations when treating acute bacterial prostatitis?

Which antibiotics penetrate the prostate?

Antimicrobial properties such as lipid solubility, protein binding, molecule size and degree of ionization determine penetration into the prostate.³⁻⁴ No prospective clinical trials evaluate parenteral versus oral therapy for ABP, but parenteral antimicrobials are empirically recommended for initial treatment.^{1,4-6} Once a patient clinically improves and antimicrobial susceptibilities are known, transition to oral antimicrobials may be appropriate. Listed in the table below are antimicrobials that have known prostate penetration and/or demonstrated efficacy in treating prostatitis.

	Antibiotics to Avoid ³	Antibiotics to Use ⁴	
Parenteral	<ul style="list-style-type: none"> Aminoglycoside monotherapy 	<ul style="list-style-type: none"> Ceftriaxone Cefepime Ceftazidime 	<ul style="list-style-type: none"> Piperacillin-tazobactam Carbapenems Fluoroquinolones
Oral	<ul style="list-style-type: none"> Cephalosporins 	<ul style="list-style-type: none"> Fluoroquinolones – preferred TMP/SMX – preferred Fosfomycin 	<ul style="list-style-type: none"> Amoxicillin Amoxicillin-clavulanate Doxycycline

What is the duration of therapy for acute bacterial prostatitis?

No clinical trials or studies directly evaluate duration of therapy in ABP. Among studies evaluating duration of treatment for complicated UTI, a higher rate of recurrence is shown among patients with prostate involvement when short-courses of antimicrobials (7 days) are used.⁷⁻⁸ Durations of 2-4 weeks of therapy are normally used among ABP studies and have shown clinical efficacy.^{1,4-6} The ideal antibiotic duration for prostate abscess may be even longer and will depend on the quality of source control (e.g. drain placement, debridement).

Key Takeaway: At least 2 weeks of an antibiotic with good prostate penetration is required for the treatment of acute bacterial prostatitis.

References:

- Borgert BJ, Wallen EM, Pham MN. Prostatitis: a review. *JAMA*. 2025; 334(11):1003-1013. doi:10.1001/jama.2025.11499.
- Gibas KM, McGowan CC. Prostatitis, Epididymitis, and Orchitis. In: Blaser MJ, Cohen JL, Holland SM, eds. *Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases*. 10th ed. Philadelphia, PA: Elsevier; 2026: 1419-27. e3.
- Charalabopoulos K, Karachalios G, Baltogiannis D, et al. Penetration of antimicrobial agents into the prostate. *Chemotherapy*. 2003; 49(6):269-79. doi:10.1159/000074526.
- Kulkarni PA, Cortés-Penfield NW, Brehm TJ, et al. State-of-the-art review: diagnosis and management of acute and chronic bacterial prostatitis. *Clin Infect Dis*. 2026; 82(1):1-13. doi:10.1093/cid/ciaf483.
- Sharp VJ, Takacs EB, Powell CR. Prostatitis: diagnosis and treatment. *Am Fam Physician*. 2010;82(4):397-406.
- Xiong S, Liu X, Deng W, et al. Pharmacological interventions for bacterial prostatitis. *Front Pharmacol*. 2020;11:504. Published 2020. doi:10.3389/fphar.2020.00504.
- Lafaurie M, Chevret S, Fontaine JP, et al; PROSTASHORT Study Group. Antimicrobial for 7 or 14 Days for Febrile Urinary Tract Infection in Men: A Multicenter Noninferiority Double-Blind, Placebo-Controlled, Randomized Clinical Trial. *Clin Infect Dis*. 2023; 76(12):2154-62. doi: 10.1093/cid/ciad070.
- van Nieuwkoop C, van der Starre WE, Stalenhoef JE, et al. Treatment duration of febrile urinary tract infection: a pragmatic randomized, double-blind, placebo-controlled non-inferiority trial in men and women. *BMC Med*. 2017; 15(1):70. doi: 10.1186/s12916-017-0835-3.