



Cefdinir PO for Bacteremic UTI

The 2025 IDSA complicated urinary tract infection guidelines recommend transition from intravenous to oral therapy if a patient is clinically improving, able to absorb oral medications, and an effective oral option is available.¹ Cefdinir is an oral third generation cephalosporin that is widely available. Can cefdinir be used as a PO step-down option for patients with gram-negative bacteremia from a complicated urinary tract infection?

What are the pharmacokinetic-pharmacodynamic (PK-PD) considerations?

Cefdinir has low bioavailability of 21% and 16% following the administration of 300 mg and 600 mg capsules, respectively.² Additionally, it has a short half-life of 1.7 hours. Only 12-18% of cefdinir is recovered unchanged in the urine following administration. Peak serum concentration is approximately 1.6 µg/mL after a 300 mg capsule. Although robust PK-PD analyses are unavailable, estimates indicate cefdinir is unlikely to achieve adequate exposure for standard PK-PD targets needed for Enterobacterales.³ In a 2021 consensus guidance for uncomplicated gram-negative bacteremia, cefdinir could not be routinely recommended due to PK concerns.⁴

What is the clinical outcomes data in UTIs?

For bacteremic UTIs, all available data is observational and lacks direct comparison of cefdinir versus agents with known efficacy. Cefdinir is often grouped with other oral β-lactams with different degrees of PK-PD optimization. Overall, the data shows a higher incidence of bacteremia or UTI recurrence and treatment failure in patients prescribed oral β-lactams including cefdinir compared to other PO step-down agents such as fluoroquinolones or sulfamethoxazole/trimethoprim.^{5, 6} Furthermore, cefdinir may also be inferior to other β-lactams. In a study of uncomplicated urinary tract infections, treatment failure was nearly twice as high compared with cephalexin and patients treated with cefdinir were more likely to have cephalosporin resistant organisms on subsequent cultures.⁷

Key Takeaway: Do not use cefdinir as a PO step-down option in bacteremic UTI.

References:

1. Trautner BW, Cortes-Penfield NW, Gupta K, et al. Clinical practice guideline by Infectious Diseases Society of America (IDSA): 2025 guideline on management and treatment of complicated urinary tract infections. Available at <https://www.idsociety.org/practice-guideline/complicated-urinary-tract-infections/>. Accessed Nov 26, 2025.
2. Omnicef (cefdinir) [Package Insert]. Abbot Laboratories; 2007.
3. Mogle BT, Beccari MV, Steele JM, Fazili T, Kufel WD. Clinical considerations for oral beta-lactams as step-down therapy for Enterobacteriaceae bloodstream infections. *Expert Opin Pharmacother*. 2019; 20(8):903-907. doi: 10.1080/14656566.2019.1594774.
4. Heil EL, Bork JT, Abbo LM, et al. Optimizing the management of uncomplicated gram-negative bloodstream infections: consensus guidance using a modified Delphi process. *Open Forum Infect Dis*. 2021; 8(10):ofab434. doi: 10.1093/ofid/ofab434.
5. Veillette JJ, May SS, Alzaidi S, et al. Real-world effectiveness of intravenous and oral antibiotic stepdown strategies for gram-negative complicated urinary tract infection with bacteremia. *Open Forum Infect Dis*. 2024; 11(4):ofae193. doi:10.1093/ofid/ofae193.
6. Mack T, Hiles JJ, Wrin J, Desai A. Use of fluoroquinolones or sulfamethoxazole-trimethoprim compared to β-lactams for oral step-down therapy in hospitalized patients with uncomplicated Enterobacterales bacteremia. *Ann Pharmacother*. 2023;57(3):251-258. doi:10.1177/10600280221106789.
7. Mitzner TM, Eid KM, Hughson DM, Jameson AP, Dumkow LE. Cefdinir versus cephalexin for the treatment of uncomplicated urinary tract infections. *Open Forum Infect Dis*. 2025;12(10):ofaf501. 2025; 12(10):ofaf501. doi:10.1093/ofid/ofaf501.