



## Antimicrobial Stewardship Opportunity: Stopping Antibiotics in Necrotizing Fasciitis

Surgical intervention is the primary treatment in managing necrotizing fasciitis.<sup>1</sup> Serial trips (e.g. daily) to the operating room are often needed for definitive source control. In addition to surgical intervention, immediate administration of antibiotics is crucial for patient management.<sup>1</sup> How long should antibiotics be administered in the management of necrotizing fasciitis?

### What do guidelines say?

The 2014 Infectious Diseases Society of America guidelines note that no clinical trials exist and suggest stopping antibiotics after all three of the following are fulfilled.<sup>1</sup>

1. Further debridement is no longer necessary
2. Patient has improved clinically
3. Afebrile for 48-72 hours

In practice, however, antibiotic therapy is frequently extended beyond those parameters. When patients receive extended courses of antibiotic therapy, risk for [C. difficile infection, drug toxicity, and the emergence of antimicrobial resistance increases](#).

### What does evidence say?

A retrospective review of patients with Fournier's gangrene (a type of necrotizing fasciitis of the groin) found no difference in mortality between patients who received antibiotics 7 days or less, 8-10 days, 11-14 days, or 15 days or more.<sup>2</sup>

In a retrospective cohort, patients who received  $\leq 48$  hours of antibiotics after final debridement were compared with those who received  $> 48$  hours. Demographics and severity scoring tools (e.g. SIRS, SOFA) were similar at baseline, except a greater percentage of patients in the  $\leq 48$  hours group had diabetes (73% vs. 57%). No differences were found in recurrence, inpatient mortality, ICU length of stay, and those in the shorter antibiotic group had a shorter hospital length of stay. Approximately half of all patients had the perineal/genital/peri-anal area involved in the infection.<sup>3</sup>

In a prospective cohort, patient outcomes were evaluated after changing practice to stopping antibiotics 48 hours after source control versus historical longer durations (median 180 hours). No difference in treatment failure or 30-day mortality was found. Notably, over half the patients included in the study had Fournier's gangrene, and approximately 60% of patients had diabetes.<sup>4</sup>

**Key Takeaway:** Antibiotic treatment for necrotizing fasciitis can be discontinued 48 hours after the last surgical debridement if the patient has clinically improved and remained afebrile for at least 48 hours.

### References

1. Stevens DL, Bisno AL, Chambers HF, et al. Practice guidelines for the diagnosis and management of skin and soft-tissue infections [published correction appears in *Clin Infect Dis*. 2005 Dec 15;41(12):1830] [published correction appears in *Clin Infect Dis*. 2006 Apr 15;42(8):1219. Dosage error in article text]. *Clin Infect Dis*. 2005;41(10):1373-1406. doi:10.1086/497143
2. Lauerman MH, Kolesnik O, Sethuraman K, et al. Less is more? Antibiotic duration and outcomes in Fournier's gangrene. *J Trauma Acute Care Surg*. 2017 Sep;83(3):443-448.
3. Kenneally AM, Warriner Z, VanHoose JD, et al. Evaluation of Antibiotic Duration after Surgical Debridement of Necrotizing Soft Tissue Infection. *Surg Infect (Larchmt)*. 2022;23(4):357-363. doi:10.1089/sur.2021.256
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