

**Questions from Dr. Scott Kennedy, CMO at Olympic Medical Center**

**August 2018**

**#1. Are there any data suggesting reduced C. difficile risk when postop antibody durations are decreased?**

Yes, there are studies showing an increased risk of *Clostridium difficile* infection (CDI) when post-operative antimicrobials are continued beyond recommended prophylaxis durations (basically no antimicrobials after closing).

Bernatz, J. T., Safdar, N., Hetzel, S. & Anderson, P. A. Antibiotic Overuse is a Major Risk Factor for Clostridium difficile Infection in Surgical Patients. *Infect. Control Hosp. Epidemiol.* **38,** 1254–1257 (2017).

<https://paperpile.com/shared/HBsG7R>

See Table 2 near the bottom. Patients with post-op antibiotics >24 hours had a 3-5 fold increased risk of CDI.

Dellit, T. H. *et al.* Reduction in Clostridium difficile infections among neurosurgical patients associated with discontinuation of antimicrobial prophylaxis for the duration of external ventricular drain placement. *Infect. Control Hosp. Epidemiol.* **35,** 589–590 (2014).

<https://paperpile.com/shared/7v6Aic>

This is a paper that we published a few years ago showing that discontinuing prophylactic antimicrobials for external ventricular drains was associated with a decrease in CDI on the neurosurgical service and neuroscience ward. The was no change in the (very low) rate of EVD-associated infections.

Balch, A., Wendelboe, A. M., Vesely, S. K. & Bratzler, D. W. Antibiotic prophylaxis for surgical site infections as a risk factor for infection with Clostridium difficile. *PLoS One* **12,** e0179117 (2017).

<https://paperpile.com/shared/HGpu1S>

In this study published last year, CDI risk increased 6.7-fold (adjusted odds ratio) among patients who received incorrect antimicrobial prophylaxis. Incorrect prophylaxis was predominantly receiving antibiotics >24 hours post-operatively.

Another key message is that there are no associated benefits to extending SSI prophylaxis beyond current recommendations. The efforts should be focused on appropriate antimicrobial choice, optimal timing, correct dosing and redosing (if needed) instead of extending therapy.

**#2. Are there benefits to mupirocin susceptibility testing in any setting?**

Interesting question. I do not know of any clinical microbiology labs that are performing mupirocin susceptibility tests, including in the UW system. We are pretty sure that no automated system includes mupirocin for any bacteria including *S. aureus*. As you mentioned, mupirocin susceptibility can be determined by Kirby Bauer (disk diffusion) assay but can also be determined using PCR to detect *mupA*. I don’t have access to the CLSI breakpoints, but EUCAST presents only ECOFFs. PCR-based surveillance will only detect low-level resistance due to *mupA*, but will miss high level resistance due to other mechanisms, making surveillance challenging overall.

If clinicians are concerned about mupirocin prophylaxis failures, it may be worth doing a one-time cross-sectional sample that can be sent to a reference lab. Alternatively, the hospital can consider alternatives to mupirocin, like nasal povidone-iodine or alcohol-based products.