

Prophylactic antibiotics in uncomplicated hand lacerations

Questionable antibiotic use in patients recovering from recent *C. Difficile* infection

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**From the frontlines:**

When I first met JD this was halfway through his tragic disease course, so I will start the story from his first visit to our primary care clinic in early August. At that time, he was young, healthy, and had no medical problems. His reason to seek medical care was that he had been dealt an unfortunate blow of epididymitis.

This infection had been ongoing for several days already and he was quite tender on physical exam, but not nearly sick enough to be in the hospital, so he was treated with an outpatient course of Levofloxacin which after 3-4 days had him feeling back to his normal self. This did not last long however. He had been informed that a common side effect from antibiotic use is diarrhea but that this is usually harmless and will get better after a few days. 2 weeks later though his diarrhea persisted and JD's abdominal pain and cramps kept getting worse. The antibiotics he required to treat his initial infection had now predisposed him to developing *C. Diff*. The stool testing came back positive and his symptoms again improved after a course of outpatient metronidazole.

JD had almost forgotten about this whole misfortune when in mid-September he suffered a laceration while cooking dinner at home. It was outside of regular office hours, and he was worried about the amount of blood he saw, so he sought care at an Urgent Care nearby. His laceration was sutured, but, due to the length of the cut, he was given a prescription of prophylactic antibiotics to prevent a wound infection. This is where JD's story really took a turn for the worse.

It only took 2 days for the cramps, abdominal pain, and profuse diarrhea to return. This time the symptoms were also accompanied by an inability to feed himself due to the severity of pain and occasional nausea/vomiting. A severe *C. Diff* infection had set in.

By the time I met JD in mid November, he already had several ER visits and 1 hospitalization in his medical record due to this severe recurrence of *C. Diff* infection. Subspecialty visits to Infectious Disease and Gastroenterology became an unwelcome recurrence. He had lost 15 lbs since the infection began, was unable to sleep due to nighttime symptoms, and had to miss several days of work as a result. His next step was a discussion of bacteriotherapy (fecal transplant) with GI.

**I will end the story there to share the teachable moment to be extracted from JD's plight:**

The easiest action to investigate as having a potential for preventable bad outcome is the act of prescribing prophylactic antibiotics for lacerations. The thought process behind this action is easy to follow; wound infections are bad, so we should give antibiotics to try to prevent them. But does the act of prescribing antibiotics here actually reduce the incidence of subsequent wound infections? Turns out that this has been studied previously and the evidence does NOT support this view. A randomized control trial in 2005 looked specifically at this situation and found no statistical difference in incidence of

subsequent wound infections in patients treated with antibiotics vs placebo (1). This same view was then supported by a follow-up meta analysis published in 2007 (2).

The second learning point to take away from this case is the use of antibiotics in patients with a recent bout of *C. Difficile* infection. This is an especially susceptible patient population with a “3-fold increase in the odds of recurrent disease” (3). This fact has actually already made it into the Choosing Wisely campaign where their recommendation is to avoid antibiotic use in this population unless there is convincing evidence of their need.

1. Whittaker J P, Nancarrow J D, Sterne G D. The role of antibiotic prophylaxis in clean incised hand injuries: a prospective randomized placebo controlled double blind trial. *J Hand Surg [Br]* 2005 May;30(2):162-7.
2. Al-Nammari SS, Reid AJ. Prophylactic antibiotics are not indicated in uncomplicated hand lacerations. *Emergency Medicine Journal : EMJ*. 2007;24(3):218-219.
3. Drekonja, Dimitri M. et al. Antimicrobial Use and Risk for Recurrent *Clostridium difficile* Infection. *The American Journal of Medicine*. 2001; 124(11):1081.e1-1081.e7