Going Rogue with Perioperative Antibiotics in Ankle Fracture Surgery: Whom Are We Protecting?

*James Robert Lachman; **Justin Elkrief, DO**; Christopher L Haydel; Paul Simon Pipitone*
Temple University Hospital, Philadelphia, Pennsylvania, USA (lead center in multicenter study)

Purpose: Surgeon preference has been replaced in favor of an approach using evidence-based medicine for most things in orthopaedics. The use of perioperative antibiosis in ankle fracture surgery is standardized for inpatients (24 hours of antibiotics postoperatively) but variable for outpatient surgery. Most surgeons do not routinely prescribe antiobiotics postoperatively for patients undergoing outpatient ankle fracture surgery. Other surgeons prefer the use of a 24-hour oral antibiotic regimen for outpatient ankle fracture surgery. In this study, inpatients receiving 24 hours of intravenous antibiotics were compared to those patients receiving 24 hours of PO (per os [oral]) antibiotics and those receiving no postoperative antibiotics. The purpose of this study was to compare the efficacy of different methods of perioperative antibiosis in ankle fracture surgery.

Methods: 1442 patients with ankle fractures requiring open reduction and internal fixation were retrospectively reviewed in this multicenter study. Demographic data including age, sex, body mass index (BMI), and race were collected. Clinical data including diabetes status, smoking status, hepatitis C virus (HCV) or human immunodeficiency virus (HIV) status, draining wound, infection requiring additional antibiotics (abx), and infection requiring return to operating room (RTOR) were statistically compared across the groups.

Results: Complete results are provided in Table 1. These data suggest no differences in incidence of draining wound, cellulitis, or return to OR for infection between the 3 groups. No differences were noted between the groups for any risk factors for infection including BMI, previous infection, smoking status, HCV/HIV status, or diabetes.

Conclusion: The use of antibiotics postoperatively, whether intravenous or oral, did not decrease the incidence of clinically significant or clinically insignificant postoperative infection. Based on the findings in this study, there is no justification for prescribing PO antibiotics to patients undergoing outpatient open reduction and internal fixation of ankle fractures. Furthermore, inpatients undergoing the same procedure did not show any advantage to postoperative antibiosis and may also not benefit from this practice.

	Inpatient group (IV antibiotics 24hrs)	Outpatient Group 1 (PO antibiotics 24hrs)	Outpatient Group 2 (No antibiotics)	Totals
Number(ankles)	439	483	520	1442
Diabetes	61(13.8%)	71 (14.7%)	68 (13.1)	200(13.9%)
Smoker	131 (29.8%)	121 (25%)	143 (27.5%)	395(27.4%)
HCV/HIV	6 (1.4%)	4(0.8%)	9 (1.7%)	19(1.3%)
Draining Wound	24(5.4%)	29(6.0%)	25(4.8)	78(5.4%)
Infection requiring additional Abx	19(4.3%)	23(4.8)	29(5.6)	71(4.9%)
Infection requiring RTOR	4(0.9%)	3(0.6%)	4(0.7%)	11(0.7%)
*None of these differences are statistically significant				