

UC Davis

Surgery

Title

Postoperative Oral Antibiotics in Foot and Ankle Surgery: Are we affecting postoperative infections or wound healing?

Permalink

<https://escholarship.org/uc/item/1wf03391>

Authors

Carl, Jacob
Nguyen, Kevin
Shelton, Trevor
et al.

Publication Date

2020

Data Availability

The data associated with this publication are not available for this reason: N/A

Postoperative Oral Antibiotics in Foot and Ankle Surgery: Are we affecting postoperative infections or wound healing?

Jacob Carl MD¹, Kevin Nguyen BS¹, Trevor Shelton MD¹, Isabella Leon BS¹, Jeannie Park BS¹,
Eric Giza MD¹, Christopher Kreulen MD¹
¹University of California, Davis, CA



DISCLOSURES

- EG & CK report consulting fees & research support from Arthrex Inc. For all other authors non are declared

OBJECTIVES

- Identify differences in postoperative infection rates and wound healing complications in patients who received postoperative oral antibiotics (PAB) vs no postop antibiotics (NAB).
- Identify factors associated with post operative infections and wound healing complications

BACKGROUND

- Controversy on use of perioperative antibiotics in the prevention of postoperative infection in elective surgery¹⁻³
- Hypothesis: no difference in postoperative infection rate and wound healing complications between PAB vs NAB

METHODS

- Retrospective study 649 patients undergoing routine elective foot & ankle surgery; 631 included in final analysis
- 2 fellowship trained foot and ankle surgeons at a tertiary academic care center/ambulatory surgery

RESULTS

Mean age

- PAB = 45 ± 16 years
- NAB = 45 ± 17 years

Number of infections (Table 1)

- PAB = 6 (3%) vs. NAB = 10 (2%) ; *p* = 0.599
- No statistically significant difference in number of deep versus superficial infections, & delays in wound healing between the groups
- Those with infections (superficial or deep) were (Table 2) :
 - Older (55 vs 45, *p* = 0.001)
 - Higher prevalence of hypertension (44% vs to 17%, *p* = 0.013) or history of neoplasm (19% vs 2%, *p* = 0.005)
 - Higher American Society of Anesthesiologists (ASA) Classification of Physical Health (2.1 vs 1.8, *p* = 0.041)
- No significant difference between groups based on BMI, diabetes, or smoking

Table 1: Comparisons of infections & delayed wound healing in PAB & NAB.

	Postoperative Antibiotic (PAB) (N = 201)	No Postoperative Antibiotic (NAB) (N = 427)	P-Value
Postoperative Infection	6 (3%)	10 (2%)	0.590
Location of Infection			
Superficial	5 (83%)	6 (60%)	0.562
Deep	1 (17%)	4 (40%)	
Delay in Wound Healing	12 (6%)	23 (5%)	0.852

Numbers presented as raw number and percentage (%)
* P-Values reported using student t-test for continuous variables and Fisher's exact test for categorical variables.

Table 2: Characteristics of patients with PAB & NAB

	Postoperative Infection (N = 16)	No Postoperative Infection (N = 615)	P-Value
Age (years)	55 ± 9	45 ± 17	0.001
Gender			
Male	9 (56%)	249 (40%)	0.211
Female	7 (44%)	366 (60%)	
BMI (kg/m ²)	30 ± 8	28 ± 5	0.256
Preoperative Antibiotics	16 (100%)	608 (99%)	1.000
Postoperative Antibiotics	6 (38%)	195 (32%)	0.599
Hemoglobin A1c	5.6 ± 0.1 (N = 2)	5.9 ± 0.9 (N = 139)	0.141
Smoking Status			0.439
Current	0 (0%)	40 (7%)	
Former	2 (13%)	143 (23%)	
Never	14 (87%)	429 (70%)	
Hypertension	7 (44%)	105 (17%)	0.013
Hyperlipidemia	3 (19%)	74 (12%)	0.429
History of Neoplasm	3 (19%)	12 (2%)	0.005
ASA	2.1 ± 0.5	1.8 ± 0.6	0.041

Numbers presented as mean ± standard deviation.
* P-Values reported using student t-test for continuous variables and Fisher's exact test for categorical variables.

CONCLUSION

- Routine use of antibiotics in ambulatory foot & ankle surgery does not affect wound complication or infection rates
- Older patients, hypertension, history of neoplasm, and patients with more medical problems made up a larger percentage of those who developed postoperative infections

REFERENCES

- Goldfarb, C. A., et al. (2017). "Ambulatory Surgical Centers: A Review of Complications and Adverse Events." J Am Acad Orthop Surg 25(1): 12-22.
- Lamagni, T., et al. (2015). "Trends in surgical site infections following orthopaedic surgery." Curr Opin Infect Dis 28(2): 125-132.
- Ruta, D. J., et al. (2014). "What are the Patterns of Prophylactic Postoperative Oral Antibiotic Use After Foot and Ankle Surgery?" Clinical Orthopaedics and Related Research 472(10): 3204-3213.