Chronic Osteomyelitis Predictors with Pattern of Care and Health Services

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Introduction

- Chronic osteomyelitis is a chronic infection of the bone
- Open fractures are a common cause of osteomyelitis and implanted hardware to repair fractures is susceptible to biofilm
- *Staphylococci* species are the most common cause of osteomyelitis[1]

- Management of chronic osteomyelitis includes antibiotics with or without surgical irrigation and debridement[2]
- Antibiotics are typically given IV for multiple weeks

- With this high burden of treatment resources expended to treat chronic osteomyelitis, it is important to understand treatment patterns and how often treatment fails

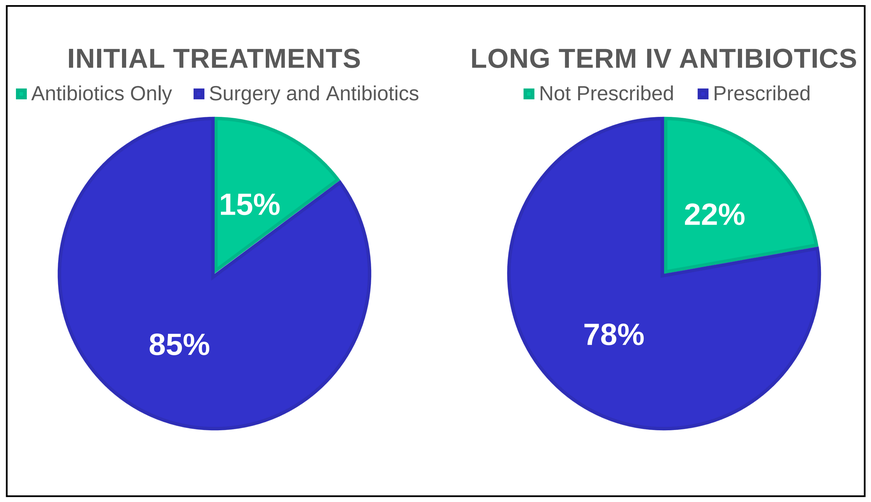
Purpose

The purpose of this study is to define patterns of care for chronic osteomyelitis and determine the distribution of osteomyelitis recurrences following the initial course of treatment.

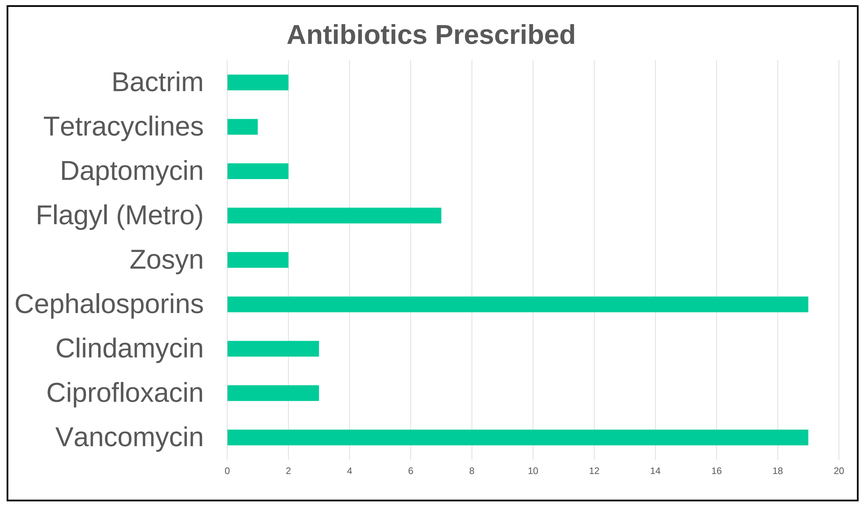
Methods

- This is a retrospective cohort study of patients that have been diagnosed with chronic osteomyelitis.
- 27 electronic medical records were abstracted from Epic of patients at University Medical Center in New Orleans
- Included subjects were aged 18 or over, have a chronic osteomyelitis of the extremity long bone, hind foot, or bony pelvis diagnosis, and diagnoses between 2016 and 2022.
- Data abstracted from the charts included demographics, treatments including medical and surgical treatment of osteomyelitis, and incidences of recurrence.
- Recurrence was defined as clear diagnosis of infection despite completing an initial course of treatment.

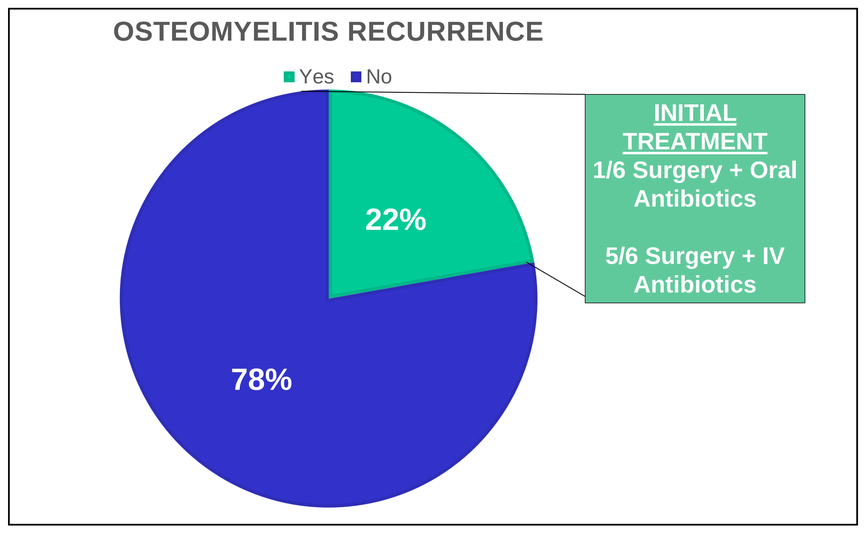
Treatment Regimen



Antibiotics



Osteomyelitis Recurrence



Results

- The average subject age was 44.5 years old
- 2/3 subjects were male and 1/3 female
- 56% of subjects were African American and the other 44% were White

- All subjects were treated with antibiotics
- 85% (23/27) of subjects underwent treatment with antibiotics and surgery while 15% (4/27) were only treated with antibiotics

- Most common antibiotics prescribed were Vancomycin and Cephalosporins

- Typical antibiotic course was considered “long-term” of at least 6 weeks
- Only 22% (6/27) subjects were not prescribed long term IV antibiotics but given oral antibiotics
- Oral antibiotics were driven by Infections Disease recommendations based on bacteria susceptibility rather than a patient-driven factor (e.g., IV drug use)

- Recurrence occurred in 22% (6/27) subjects
- All subjects who experienced recurrence had surgery in their initial treatment course
- 5/6 subjects also had long-term IV antibiotics in their initial treatment course

Conclusion

- From the charts abstracted, the most common method in treating chronic osteomyelitis was to have a combination of antibiotic and surgical treatment.
- Additionally observed was the common practice of a prolonged course of antibiotic treatment through IV.
- **Despite this aggressive treatment, osteomyelitis still recurred nearly one-quarter of the time.**
- Further chart abstraction is ongoing to test for associations between specific initial treatments and recurrence.

References

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- Panteli M, Giannoudis PV. Chronic osteomyelitis: what the surgeon needs to know. EFORT Open Rev. 2017 Mar 13;1(5):128-135.