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“Adverse events associated with the presence and treatment of chronic osteomyelitis”

Background: The presence and treatment of chronic osteomyelitis (COM) are known to cause complications and adverse reactions in some patients. In a previous study, researchers examined acute kidney infections (AKI) as a complication of diabetic foot osteomyelitis (DFO).¹ They found that patients diagnosed with AKI as a result of DFO were more likely to experience an increased number of hospitalizations and recurrences of infection relative to patients without this complication. In addition, antibiotic treatment of COM has also been known to cause complications. According to the CDC, 26.2% of adverse drug reactions are caused by antibiotics.² Given the high frequency of reactions to antibiotics relative to other drugs, it is worth determining the frequency of reactions to long-term (≥ 6 weeks) antibiotics specifically used to treat COM so that providers can make more informed treatment decisions. Ultimately, the purpose of this study is to determine the frequency of both medical complications and adverse reactions to long-term antibiotics during the course of COM.

Methods: In this retrospective cohort study, we examined 40 medical records of patients being treated for COM at University Medical Center’s Orthopedic Clinic in New Orleans, Louisiana. From each record, we extracted information regarding patient demographics; medical complications associated with COM, including hepatic dysfunction, renal dysfunction, anemia, blood clots, hypercalcemia, neutropenia, rash, blood infections, PICC line infections, and hearing loss; and adverse reactions associated with treatment using long-term antibiotics. This information was recorded into Redcap, exported into Microsoft Excel, and the percentages of patients who experienced complications and adverse drug reactions were recorded.

Results: From the preliminary data collected, we found that 45% of patients within the study experienced some complication due to the presence of COM. Amongst those who experienced at least one complication, we found an average of .8 complications per person. The most frequent complication experienced with COM was anemia, which accounted for 31.25% of the complications that were recorded. In addition, we found that 20.59% of the 34 patients treated with long-term antibiotics experienced some form of an adverse reaction, which required them to be placed on a different medication.

Conclusion: Based on the preliminary results of this study, it is clear that several complications and reactions may arise during the care of COM patients. By better understanding these problems, healthcare providers can be more aware of certain complications that may occur during the course of COM within their patients and adjust treatments as needed. While it is currently unknown if the complications and adverse reactions found in our study are associated with certain comorbidities, antibiotics, drug doses, etc, it is clear that these adverse events are a serious problem, and having a better understanding of them will enable physicians to treat patients more efficiently and effectively.

1 van Asten, Suzanne A. V., et al. "Complications during the Treatment of Diabetic Foot Osteomyelitis." *Diabetes Research and Clinical Practice*, 13 June 2017. 2 Sendekie, Ashenafi Kibret, et al. "Incidence and Patterns of Adverse Drug Reactions among Adult Patients Hospitalized in the University of Gondar Comprehensive Specialized Hospital: A Prospective Observational Follow-up Study." *PloS One*, 24 Feb. 2023

