Poster Number: 76

MetroHealth Medical Center

RESEARCH DAY 2023
Abstract Submission Form

Poster Title: **Fear of Missing Organisms (FOMO): Diabetic Foot and Osteomyelitis Management Opportunities**

Authors: **Morgan K. Morelli, MD; Andrea H. Son, PharmD, Yanis Bitar, Michelle T. Hecker, MD**

Presenter's Name: **Morgan K. Morelli and Michelle T. Hecker**

Location of Laboratory: **n/a**

Category: **Clinical Research**

Background: Empiric broad-spectrum antibiotic therapy is commonly prescribed for patients hospitalized with diabetic foot infections (DFI) and lower extremity osteomyelitis (OM). Guidelines recommend antibiotic therapy based on severity of illness, risk factors for MRSA and *Pseudomonas aeruginosa*, and local prevalence. We evaluated the concordance between empiric antibiotic therapy and both culture results and definitive antibiotic therapy with a focus on MRSA and *P. aeruginosa*. We also evaluated how well MRSA and pseudomonal risk factors were predictive of culture results with these organisms.

Methods: We conducted a cohort study of all patients admitted to our hospital system in 2021 with a diagnosis of a DFI or lower extremity OM. In patients with multiple hospitalizations only the first hospitalization was included. Empiric antibiotic therapy included antibiotics started by the admitting team. Definitive antibiotic therapy included the final antibiotic course either completed during admission or prescribed at the time of discharge. MRSA risk factors included prior positive culture with MRSA within the last year, hospitalization with IV antibiotics within 90 days, intravenous drug use, or hemodialysis. Pseudomonal risk factors included prior positive culture with *P. aeruginosa* within the last year or hospitalization with IV antibiotics within 90 days.

Results: In 2021, 260 unique patients were admitted with DFI or lower extremity OM. Empiric anti-MRSA and antipseudomonal therapy was administered to 224 (86%) and 214 (82%) patients respectively. Definitive anti-MRSA and antipseudomonal therapy was administered to 76 (30%) and 51 (20%) patients respectively. Of the 195 patients who had wound cultures, 29 (15%) and 18 (9%) had positive cultures for MRSA and *P. aeruginosa* respectively. The negative predictive value of MRSA risk factors for predicting a negative culture with MRSA was 91%. The negative predictive value of pseudomonal risk factors for predicting a negative culture with *P. aeruginosa* was 95%.

Conclusions: Our data suggest an opportunity for substantial reductions in empiric anti-MRSA and antipseudomonal therapy for DFI and lower extremity OM. The absence of MRSA and pseudomonal risk factors was reasonably good at predicting the absence of a positive culture with these organisms.