**ABSTRACT**

- Double center, retrospective study of adult patients hospitalized from 7/2015 to 6/2016, who presented with infected and clean ulcer, foot ulcers.
- Diagnosis of infection was based on the presence of ≥ 2 of the following criteria: local swelling or induration, pain, local increase of temperature, and purulent discharge.
- Clean ulcer specimens were collected at the time of ulcer debridement or amputation of the infected area.
- All statistical analyses were performed with the R® software and applicable packages.

**METHODS**

- We reviewed the records of 140 patients with infected chronic foot ulcers.
- Data on baseline demographics, clinical, surgical, microbiology, and treatment parameters were collected. Multivariable logistic regression models, validated via bootstrapping methods, were used to establish risk factors associated with isolation of these organisms. We then used these models to build predictive nomograms for clinical use, to calculate sensitivity, specificity, positive and negative predictive values.

**RESULTS**

- A total of 307 bacterial isolates were identified, most frequently MRSA (24.3%). PSA was found in 14.3% of these cultures.
- Amputation (OR 5.75, 95% CI 1.48-27.83) and renal disease (OR 5.46, 95% CI 1.43-25.16) were associated with higher PSA isolation, whereas, diabetes (OR 0.07, 95% CI 0.01-0.34) and Infectious Diseases Society of America (IDSA) infection category > 3 (OR 0.18, 95% CI 0.03-0.65) were associated with lower odds. Analysis for MRSA showed that amputation was associated with lower (OR 0.29, 95% CI 0.09-0.79) risk, while history of MRSA infection (OR 5.63, 95% CI 1.56-20.63) was associated with higher odds of isolating this organism. The models’ ability to discriminate was found to be 0.79 (AUC 0.79) risk, while history of MRSA infection (OR 5.63, 95% CI 1.56-20.63) was associated with higher odds of isolating MRSA (24.3%).

**CONCLUSION**

- In our study, amputation and renal disease were found to be dominant predictors, whereas infection severity classification and diabetes were not associated with the presence of PSA infections.
- For MRSA, osteomyelitis and previous history of an MRSA infection showed significant association with positive culture results for this organism, but amputation was associated with lower odds of identifying the bacteria.
- Our study results and the predictive nomograms provide guidance to clinicians on assessing the need for broad spectrum empiric antibiotics in patients with infected foot ulcers.
- Validation of the predictive algorithms in independent data sets of alike patient populations is warranted.

**REFERENCES**