ABSTRACT

INTRODUCTION

• MRSA is one of the leading causes of healthcare-associated infections which in turn causes the overuse of MRSA-targeted therapy.
• Current guidelines only recommend empiric treatment for MRSA in patients at risk (see table below for MRSA risk factors).
• As part of antimicrobial stewardship, MRSA-targeted therapy should be discontinued as soon as possible considering increasing of bacterial resistance and adverse drug events.
• Respiratory cultures take a few days to result.
• MRSA nasal swab PCR Assay has a turnaround time of 1 hour. Therefore, its utilization can provide a shorter time to de-escalation.

Study Design:
• Single-centered, retrospective chart review
• Time period: February 2017 to February 2018

Inclusion Criteria:
• ≥ 18 years
• Known MRSA
• Recent hospitalization
• Pneumonia
• Presence of empyema
• Clinical Infectious Diseases manufacturer guidelines provided.

Exclusion Criteria:
• Known MRSA
• Recent hospitalization
• Pneumonia
• Presence of empyema

Methodology:
We conducted a single-centered, retrospective chart review of all patients admitted between February 2017 to 2018 with a confirmed diagnosis of pneumonia. Patients who were screened for MRSA nares and had a respiratory culture within 48 hours of the positive test were included in the study. The aim of the study was to assess both the positive and negative predictive value of the MRSA nasal swab for MRSA pneumonia.

RESULTS

Table 3. Baseline Characteristics

Table 4. MRSA nasal swab PCR Assay Pre- and Post-Test Analysis

Table 5. Primary Outcome: Predictive Value

Table 6. Secondary Outcome: Sensitivity and Specificity

DISCUSSION

• No statistical difference in baseline characteristics. We did not exclude any units (i.e. Critical Care).
• Despite the lungs being a highly vascularized organ, there is a delayed onset of antimicrobial effect. Our infectious disease physician and pulmonary/critical care intensivist concurred that it takes about 48 hours for antibiotics to affect the lungs. Therefore, we included patients who received antibiotics up to 48 hours in between nasal swab and respiratory culture collection.

CONCLUSION

• MRSA nasal swab has high negative predictive value. Therefore, a negative nasal swab can rule out MRSA pneumonia.
• This screening can be utilized in Antimicrobial Stewardship for the rapid de-escalation and discontinuation of MRSA-targeted therapy prior to respiratory cultures resulting.

REFERENCES