Antimicrobial regimen for methicillin-resistant Staphylococcus aureus (MRSA) coverage with antibiotics such as vancomycin are recommended for empiric use in the treatment of suspected MRSA (1-2).

Nasal MRSA Polymerase Chain Reaction (PCR) assay has shown high negative predictive value for MRSA pneumonia.

Previous retrospective studies in the inpatient setting have demonstrated no difference in hospital mortality or decreased exposure to broad-spectrum antimicrobials (vancomycin) with MRSA PCR utilization for de-escalation of therapy (3-5).

Early utilization of MRSA PCR by pharmacists in the ED will lead to early de-escalation or avoidance of vancomycin in patients with suspected pneumonia and MRSA risk factors.

Objectives

Utilize MRSA PCR assay by pharmacist in the ED for early de-escalation or avoidance of vancomycin in patients with suspected pneumonia and MRSA risk factors.

Methods

Sample Size:
38 patients (patient enrollment ongoing)

Primary Endpoints:
1. Number of patients who received only one dose of vancomycin prior to MRSA PCR result

Secondary Endpoints:
2. Number of patients in whom empiric vancomycin was avoided in the Emergency Department

Inclusion Criteria:
• Patients presenting the Emergency Department between 8-1-2019 and 9-30-2020
• ≥ 18 years
• Radiographic diagnosis of pneumonia
• Patients with empiric vancomycin ordered

Exclusion Criteria:
• Currently on chemotherapy for malignancy or with neutropenic fever
• Patients with lung transplant or cystic fibrosis
• Prior positive MRSA in a blood, sputum culture, or suspected MRSA infection elsewhere
• Patients with concomitant empiric agents with MRSA activity (e.g., linezolid, ceftaroline)

Results

Number of patients who received one dose of Vancomycin prior to MRSA PCR Result

Control (n = 21)

Intervention (n = 9)

n=7 (51.7%)

n=4 (44.4%)

n=5 (55.6%)

Control

Intervention

Vancomycin Given

Vancomycin Held

Vancomycin Given

Vancomycin Held

Conclusion

• More patients in intervention group had empiric dose of vancomycin held prior to MRSA PCR result
• More patients in the control group had vancomycin levels drawn
• Data collection is currently ongoing, and results presented are preliminary data

Contact Information

sabrina.najibi@aah.org

Disclosure

The authors have nothing to disclose concerning possible financial or personal relationships with commercial entities

References


Advocate Christ Medical Center Oak Lawn, IL