Impact of delaying methicillin-resistant *Staphylococcus aureus* (MRSA) pneumonia treatment until microbiologic documentation

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**INTRODUCTION**

The 2005 ATS/IDSA pneumonia guidelines emphasize the importance of accurate empiric antibiotic until culture data become available to guide treatment. However, studies have consistently concluded that prompt administration appropriately selected antibiotics is predictive of improved mortality in critically ill patients1,2,3. However, patients with MRSA are not well represented in these studies. In addition, Kim and colleagues compared the microbiologic documentation by a respiratory source and found that the purpose of delaying MRSA therapy was not empirically receive MRSA antibiotic until culture data was available to guide treatment. Thus, the purpose of this study was to evaluate the impact of delaying treatment for MRSA pneumonia in ICU patients until microbiologic documentation by a respiratory culture.

**PURPOSE/OBJECTIVES**

- Evaluate the impact of delaying treatment for MRSA pneumonia in ICU patients until microbiologic documentation

**METHODS**

- **Inclusion Criteria**
  - ICU patients with a positive MRSA culture drawn from a respiratory source
  - Culture obtained in the ICU, MICU, or ED
  - ≥18 years old
  - Not an ICU patient (n=4)

- **Exclusion Criteria**
  - Copd
  - Pregnancy/lactation
  - Concomitant vancomycin allergy
  - Diagnosis of infective endocarditis

- **Definitions**
  - MRSA Coverage: For the purposes of this study agents will include empiric treatment with linezolid or vancomycin
  - MRSA Pneumonia Coverage: Patients transferred from outside hospital with microbiologic documentation

- **Study Design**
  - Detrictive, single center, IRB approved, retrospective chart review
  - Completed at Baystate Medical Center (1716 bed level I trauma center with 16 bed MICU and 16 bed ICU)
  - Patients admitted from March 2010 through August 2013

- **Additional Exclusions**
  - Not an ICU patient (n=4)

- **Primary Variables**
  - Hospital length of stay
  - Mortality

- **Secondary Variables**
  - Hospital length of stay
  - Mortality

**RESULTS**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Empiric Group (n=23)</th>
<th>Delayed Group (n=22)</th>
<th>Absolute Difference (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality (n,%):</td>
<td>11 (44.4)</td>
<td>6 (27.3)</td>
<td>1.7 (0.025, 3.35)</td>
</tr>
<tr>
<td>Hospital Length of Stay (days):</td>
<td>29.7</td>
<td>21.7</td>
<td>7.8 (9.7, 11.3)</td>
</tr>
<tr>
<td>ICU Length of Stay (days):</td>
<td>7.8</td>
<td>10.5</td>
<td>2.75 (14.69)</td>
</tr>
</tbody>
</table>

**DISCUSSION**

- **Limitations**
  - Single center chart review
  - Small sample size

**REFERENCES**


**CONCLUSIONS**

- Results suggest no difference in mortality when delaying MRSA therapy
- Studies suggest an increased ICU LOS when delaying MRSA therapy
- Results suggest no difference in hospital LOS in delaying MRSA therapy

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