Introduction

• An antibiotic time out (ATO) is a defined prompt to re-assess a patient’s antimicrobial therapy after a set period of time (e.g., 24-48 hours)
• An ATO is recognized as an antimicrobial stewardship strategy by national organizations including the CDC1
• Data demonstrating efficacy is mixed and guidance on how to best implement and measure a time out is still lacking2,4

Structure of ATO Process

- Does the patient still have a valid indication for use of antibiotics?
- Spectrum
- Does the ordered antibiotics provide appropriate coverage for the suspected pathogens and site of infection?
- Dosage
- Does coverage need to be broadened or narrowed based on the available information?
- Duration
- Has a treatment duration been assigned for the ordered antibiotics?
- Study Aim

Assess the impact of an antibiotic time out on antibiotic utilization in a wide range of Vizient hospitals

Methods

• Participating sites enrolled through response to an online survey
• Points prevalence study was conducted in which antibiotic data was collected between October 16 – November 17, 2017 at participating institutions
• Inclusion criteria
  - Enteral or parenteral antibiotics in the inpatient setting only
  - Exclusion criteria
    - Treatment antibiotics initiated prior to admission
    - Non-surgical prophylaxis antibiotics
    - Antiviral or antifungal therapy

Participating Sites

Hospital Type

Antibiotic Timeout Institution?

Yes

No

Participants

30

29

17

44

Analysis / Outcome Measures

- Patient antibiotic therapy courses were evaluated for the presence of anti-MRSA agents, anti-Pseudomonas agents, and oral antibiotic agents
- Antibiotic courses were aggregated and compared on the basis of whether the institution had an antibiotic timeout policy in place (ATO institution) or not (non-ATO institution)
- Outcome measures included the following:
  - Percent change in prevalence of courses with anti-MRSA agents after day 3
  - Percent change in prevalence of courses with anti-MRS agents after day 3
  - Percent change in prevalence of antibiotics ordered for oral administration after day 3
  - Chi-squared tests were utilized for calculation of p-values

Results

Table 1: Antibiotic Courses at ATO Institutions

<table>
<thead>
<tr>
<th>Days 1-3 (n=770)</th>
<th>Days 4-7 (n=626)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Courses with anti-Pseudomonas Activity</td>
<td>401 (52.08%)</td>
</tr>
<tr>
<td>Number of Courses with anti-MRSA Activity</td>
<td>238 (30.91%)</td>
</tr>
<tr>
<td>Total Number of Antibiotics Ordered</td>
<td>1206</td>
</tr>
<tr>
<td>Total Number of Antibiotics Ordered for Oral Administration</td>
<td>220 (18.24%)</td>
</tr>
</tbody>
</table>

Table 2: Antibiotic Courses at non-ATO Institutions

<table>
<thead>
<tr>
<th>Days 1-3 (n=1562)</th>
<th>Days 4-7 (n=1059)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Courses with anti-Pseudomonas Activity</td>
<td>777 (49.74%)</td>
</tr>
<tr>
<td>Number of Courses with anti-MRSA Activity</td>
<td>455 (29.13%)</td>
</tr>
<tr>
<td>Total Number of Antibiotics Ordered</td>
<td>2341</td>
</tr>
<tr>
<td>Total Number of Antibiotics Ordered for Oral Administration</td>
<td>417 (17.81%)</td>
</tr>
</tbody>
</table>

Conclusions

- This analysis of antibiotic therapy courses for patients at 61 participating institutions detected no positive impact (either in reduction of broad-spectrum antibiotic use or increase in conversion to oral therapy) on antimicrobial utilization among institutions that have implemented an ATO compared to those without an ATO
- Limitations included point prevalence nature of study and potential biases introduced by differences in institutional patient populations
- Though the principles of the antibiotic timeout are logical, there remains scant published evidence pointing to its benefit on antimicrobial use metrics
- ATOs may still have a role in extending stewardship initiatives at select institutions, but they should be implemented with realistic expectations

References / Contact Information

1) Center for Disease Control and Prevention. The Core Elements of Hospital Antibiotic Stewardship Programs. Centers for Disease Control and Prevention. 2016. Atlanta, GA.

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Figures and Tables

- Figure 1: Graph showing the distribution of antibiotic courses at ATO institutions.
- Table 1: Antibiotic Courses at ATO Institutions.
- Table 2: Antibiotic Courses at non-ATO Institutions.

Do Antibiotic Timeouts Improve Antibiotic Utilization?

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