Randomized Trial of Team Pharmacist-Led Antimicrobial Time Out

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Funding: This work was supported by a grant from Merck & Co., Inc.

ABSTRACT

METHODS, cont.

Antimicrobial Time Out (ATO) Process:

- Local ATO developed and implemented by the pharmacist team
- Feedback from pharmacist team
- Discussion of antibiotics
- Antimicrobial Classification

ABSTRACT

Methods: Six medicine teams at a teaching hospital were randomized to implement a pharmacist-led antimicrobial time-out (ATO) process vs. usual care (UC). Pharmacists in the ATO group reviewed electronic orders and used standard guidelines to facilitate TDs on rounds targeting two time points early (<72 h after antibiotic start) and late (after early; ≤5 days after antibiotic start) to align with antibiotic days. Early TDs were performed on all patients, while late TDs included those meeting criteria for a clinical discussion to include arrears; medicine primary, received antibiotics ≥ 48 h. ICU days were excluded; antibiotic use was measured in days of therapy (DOT) per patient day (PD).

RESULTS

A total of 260 (120 ATO, 140 UC) patients with 290 admissions were included. Demographics were similar between groups: over 46%, male, 76% admitted to medicine, median age and Charlson score 62 and 2, respectively. Infections were similar between groups with respiratory tract (28.6%), skin-soft-tissue/bone (24.1%), and gastrointestinal (21.7%) most common. TDs were performed 152 times; TD compliance was 72% for early and 68.8% for late. Common TD outcomes were: no change (N=80), narrow antibiotics (N=29), ID consult (N=21), and change to PO (N=13). The proportion of PO antibiotics prescribed increased (28.1% to 29.6%), and the ratio of PO to IV antibiotic days was significantly higher (1.14-0.54, P=0.02) compared to the UC group.

CONCLUSION

Team pharmacist-led ATO was successful although opportunities were missed due to lack of team-based pharmacist staffing on weekends and holidays. ATO did not decrease overall antibiotic use but appeared to precipitate more frequent and earlier transition to oral agents. While subjective feedback regarding the ATO was positive from both teams and pharmacists, further study is needed to determine:

- Sustainability (ICU, surgical team, pediatrics, etc.)
- Generalizability (ICU, surgical team, pediatrics, etc.)
- To evaluate these issues UC care teams implemented ATO with similar outcomes measured for 2 months (data analysis ongoing)

Antibiotic Use:

- Overall antibiotic use was not different between groups nor were there any differences in use of specific agents, but PO therapy was more common in the ATO group (Table 2).

Table 3: Antibiotic Time Out Description

<table>
<thead>
<tr>
<th>Type of Therapy</th>
<th>Early</th>
<th>Late</th>
<th>Late (any ATO after 5 days)</th>
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<tbody>
<tr>
<td>Definitive</td>
<td>67 (44.0)</td>
<td>20 (13.3)</td>
<td>29 (16.0)</td>
</tr>
<tr>
<td>Prophylaxis</td>
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Methods:

- A total of 184 ATO were documented during the study period but only 152 (82.6%) were performed on patients meeting study criteria and were analyzed
- Early ATO compliance was 72% and late ATO compliance was 69.7%
- Late time to TD was doubled compared to early (1.14 vs. 0.57, P=0.01)
- ATO group pharmacist's was noted to be more frequent and earlier compared to UC group by the local AST

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