Presentation Type:
Poster Presentation

Effect of Meropenem Restriction on Time Between Order and Administration in a Medical Intensive Care Unit

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Background: In this study, we assessed whether meropenem restriction led to delays in administration for patients in a medical intensive care unit (MICU) at a large tertiary-care urban teaching hospital. **Methods:** The antimicrobial stewardship program (ASP) at Virginia Commonwealth University Health System (VCUHS) requires approval for restricted antimicrobial orders placed between 8 A.M. and 9 P.M. Between 8 A.M. and 5 P.M. (daytime), authorized approvers include ASP and infectious diseases (ID) physicians. From 5 P.M. to 9 P.M. (evening) orders are approved by ID fellows. Orders were entered as Stat, Now, and Routine. Between 9 P.M. and 8 A.M. (night), patients receive doses without approval. Meropenem restriction began in mid-January 2018. Pre- and postmeropenem restriction periods were defined as February–December 2017 and February–December 2018. Meropenem use data were compared for adult patients in the MICU. A multivariable Cox regression model was implemented to compare (1) time from order entry to approval; (2) time from order approval to patient administration; (3) total time from order entry to patient administration, adjusting for order priority, approver (ASP, ID consult, ID fellow, pharmacy); and (4) time of day of order placement (day, eve, night). The analyses were performed using SAS version 9.4 software (SAS Institute, Cary, NC). **Result:** Time from order approval to patient administration was significantly decreased in the postrestriction period (HR, 1.840; $P < .001$) (Table 1). Stat orders were faster compared to routine orders for order entry to approval (HR, 1.735; $P < .001$), approval to administration (HR, 2.610; $P < .001$), and total time from order entry to administration (HR, 2.812; $P < .001$). No significant differences were found in time to approval by approving service. Time from order entry to approval was faster for nighttime orders than for daytime orders (HR, 1.399; $P = .037$). **Conclusions:** Our data indicate that the time from order entry to administration decreased following meropenem restriction in our MICU. More research is needed to identify the reason for this finding, but we postulate that this is due to an effect on drug administration prioritization within nursing workflow. These data will inform our local meropenem restriction efforts.

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Effectiveness of Methicillin-Resistant *Staphylococcus aureus* (MRSA) Nasal Screening for Reduction of Vancomycin Use for Pneumonia

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Background: Methicillin-resistant *Staphylococcus aureus* (MRSA) nasal colonization has been a well-established risk for developing MRSA pneumonia. In previous studies, the MRSA nasal screening test has shown an excellent negative predictive value (NPV) for MRSA pneumonia in patients without exclusion criteria such as mechanical ventilation, hemodynamic instability, cavitary lesions, and underlying pulmonary disease. MRSA nasal screening can be used as a stewardship tool to de-escalate broad antibiotic coverage, such as vancomycin. **Objective:** The purpose of this study was to determine whether implementation of a MRSA nasal screening questionnaire improves de-escalation of vancomycin for patients with pneumonia. **Methods:** A retrospective review was performed on 250 patients from October 2018 to January 2019 who received MRSA nasal screening due to their prescriber choosing only "respiratory" on the vancomycin dosing consult form. Data obtained included demographics and clinical outcomes. Statistical analyses were performed, and $P < .05$ was considered significant. **Results:** Of the 250 patients screened, only 19 patients (8%) were positive for MRSA. Moreover, 40% of patients met exclusion criteria. In 149 patients without exclusion criteria, the MRSA nasal swab had a 98% NPV. Although not statistically significant, vancomycin days of therapy (DOT) based on MRSA nasal swab result was 1 day shorter in those with negative swabs (3.49 days negative vs 4.58 days positive; $P = .22$). Vancomycin DOT was significantly reduced in pneumonia patients without exclusion criteria (3.17 days "no" vs 4.17 days "yes"; $P = .037$). **Conclusions:** The implementation of an electronic MRSA nasal screening questionnaire

Table 1.

Table 1. Time from Order Entry to Administration Pre-Restriction vs. Post-Restriction

	Order Entry to Administration Median Time in Hours (Range)		Hazard Ratio
	Pre-Restriction (2017)	Post-Restriction (2018)	(HR>1 implies shorter time to administration)
All orders	3.14 (0.12-36.23)	1.76 (0.12-44.26)	1.578 (p<0.001)
Routine	4.32 (0.21-36.23)	5.73 (0.12-44.26)	1.094 (p=0.543)
Now	2.19 (0.13-24.34)	1.35 (0.20-5.65)	2.424 (p<0.001)
Stat	2.09 (0.12-19.66)	0.91 (0.19-3.77)	3.103 (p<0.001)