

## **Using quality improvement methodology with standardized higher initial vancomycin doses, we demonstrated improved adherence to national trough guidelines without noted safety detriment” Miloslavsky et al (2017).**

Abstract:

**BACKGROUND AND OBJECTIVES:** There are limited data guiding vancomycin dosing practices in the pediatric population to target the goal troughs recommended by national vancomycin guidelines. In this study, we sought to improve adherence to guideline trough targets through a quality improvement intervention.

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**METHODS:** A retrospective analysis was first conducted to assess baseline performance. A multidisciplinary team then developed and implemented a standardized dosing algorithm recommending 15 mg/kg per dose for mild and moderate infections (goal trough: 10-15 µg/mL) and 20 mg/kg per dose for severe infections (goal trough: 15-20 µg/mL), both delivered every 6 hours (maximum single dose: 750 mg). The impact of the intervention was evaluated prospectively using standard statistics and quality improvement methodology. The outcome measures included the percentage of patients with an initial therapeutic trough and the time to therapeutic trough.

**RESULTS:** A total of 116 patients (49 preintervention, 67 postintervention) were included. Postintervention, there was a significant increase in the percentage of patients with an initial therapeutic trough (6.1% to 20.9%,  $P = .03$ ) and in the percentage of patients with initial troughs between 10 and 20 µg/mL (8.2% to 40.3%,  $P < .001$ ). The time to therapeutic trough decreased from 2.78 to 1.56 days ( $P = .001$ ), with the process control chart showing improved control postintervention. Vancomycin-related toxicity was unchanged by the intervention (6.1% versus 4.5%;  $P = .70$ ).

**CONCLUSIONS:** Using quality improvement methodology with standardized higher initial



vancomycin doses, we demonstrated improved adherence to national trough guidelines without noted safety detriment.

Reference:

Miloslavsky, M., Galler, M.F., Moawad, I., Actis, J., Cummings, B.M. and El Saleeby, C.M. (2017) The Impact of Pediatric-Specific Vancomycin Dosing Guidelines: A Quality Improvement Initiative. *Pediatrics*. 139(6).

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