Stephanie Improves Antibiotic Decision-Making

Patients weighing ≥120 kg should receive a 3 g dose, all other adult patients should receive a 2 g dose pre-operatively. To promote guideline adherence, an antimicrobial stewardship pharmacist-driven dose optimization intervention was implemented.

Methods. Retrospective, pre (February 1, 2017–March 31, 2017)/post (February 1, 2018–March 31, 2018) study evaluating the impact of a pharmacist-driven cefazolin dose optimization intervention at a large health system. An alert within the electronic health record notified pharmacists during order verification when cefazolin dose from a surgical prophylaxis order set did not match weight-based recommendations. All patients with cefazolin orders for surgical prophylaxis were included; pediatric and pregnant patients were excluded.

Results. Pre-group included 9,830 patients, post-group 10,025 patients. In both groups, the mean age was 58 years, mean weight 87 kg, and 8% of patients weighed ≥120 kg. Approximately 21% of patients were seen at the academic medical center, 8% at ambulatory surgery centers, and the remainder amongst 10 community hospitals. Most common surgical procedure types were orthopedic (26%), general surgery (21%), and urologic (10%). Primary cefazolin dose was 2 g in 89.8% vs. 88.7%, followed by 1 g in 11.5% vs. 11.0%. Pre- and post-intervention, respectively. Overall adherence to weight-based cefazolin dosing was 92.2% pre-group and 92.4% post-group. In patients weighing ≥120 kg, adherence was better both pre- and post-intervention when an order set was used (pre: order set 95.0% vs. no order set 85.9%, P < 0.001; post: order set 96.4% vs. no order set 84.8%, P < 0.001). There were no differences between surgical services or hospital locations. Investigation of guideline nonadherence cases found order sets without updated dosing recommendations and allowed for targeted education efforts.

Conclusion. Overall adherence to cefazolin weight-based dosing recommendations for surgical prophylaxis was high, especially with the use of order sets. Pharmacist-driven dose optimization intervention improved guideline adherence in patients weighing ≥120 kg.

Disclosures. All authors: No reported disclosures.
1100. Facility Factors Are a Stronger Driver of Peri-Operative Vancomycin Use Than Patient Risk Factors
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Session: 135. Antibiotic stewardship: Surgical Prophylaxis
Friday, October 4, 2019: 12:15 PM

Background. Prior reports suggest that the use of vancomycin for surgical prophylaxis is common and increasing. However, rates of administration and reasons for choosing vancomycin are unknown. Thus, we sought to quantify the frequency of vancomycin as a surgical prophylaxis agent and to determine drivers of use.

Methods. All Veteran patients undergoing major cardiac, orthopedic total joint, vascular, or colorectal procedures and entered into the VA External Peer Review Program (EPRP) database during the period from October 1, 2008 to September 30, 2013 were included. EPRP includes a manual review of surgical cases to measure rates of vancomycin use. Descriptive statistics were used to evaluate findings.

Results. Among 79,058 surgical procedures at 109 different medical centers, 20,349 (25.7%) received vancomycin either alone or in combination with another agent for prophylaxis. Rates of vancomycin use were the highest for cardiac surgeries (10,452/21,396, 48.9%), followed by orthopedic total joint replacement surgeries (8,044/38,675, 20.8%), vascular surgeries (1,504/8,177, 18.4%) and colorectal surgeries (346/10,810, 3.2%). The most common reason for vancomycin use was β-lactam allergy, patient at high risk of methicillin-resistant Staphylococcus aureus (MRSA), facility high rate of MRSA). Descriptive statistics were used to evaluate findings.

Conclusion. Facility factors are a major driver of peri-operative vancomycin use, more so than β-lactam allergy or patient-level factors, particularly in cardiac and orthopedic surgery. These data suggest that facility-level interventions, such as implementation of specific guidelines, may be helpful for limiting vancomycin use in this population.

Disclosures. All authors: No reported disclosures.

1101. What Do Electrophysiologists Think about Peri-Procedural Antibiotics? A Qualitative Assessment of Factors Driving Use and Facilitators for Implementing Change
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Session: 135. Antibiotic stewardship: Surgical Prophylaxis
Friday, October 4, 2019: 12:15 PM

Background. Antimicrobial prophylaxis is common and increasing. However, rates of administration and reasons for choosing antimicrobials are not well defined. The aim of this study was to determine whether non-ďertapenem antimicrobial prophylaxis in colorectal surgery is associated with increased rates of surgical site infections (SSI), defined by both deep and incisional infections, compared with ertapenem prophylaxis. Secondary aims were to identify differences in C. difficile infection rates at 60 days between the two groups.

Methods. This was a single-center retrospective study from November 2016 to December 2018 at a 600-bed teaching hospital equipped with a Level I Trauma Center in Central Texas. National Healthcare Safety Network (NHSN) criteria for colorectal surgical site infection (SSI) were used to identify eligible patients. Patients under 18 years or lacking pre-operative antibiotic documentation were excluded. SSI and C. difficile rates between the two prophylactic strategies were compared using Chi-squared and Fisher’s exact tests as appropriate.

Results. A total of 761 patients were included in the analysis. There were 87 patients in the ertapenem group and 674 patients in the non-ďertapenem group. Antibiotics included in the non-ďertapenem group were cefazolin (32%), ceftriaxone (22%), or ciprofloxacin (15%) plus metronidazole, and other antibiotics (31%). Baseline characteristics including age, American Society of Anesthesiologists (ASA) score, body mass index (BMI), and number of surgical procedures were similar for both groups. The overall SSI rate was 4.7% and the 60-day C. difficile rate was 3.9%. No significant differences were found between ertapenem and non-ďertapenem groups in SSI rates (5.8% vs. 4.6%, P = 0.6) or 60-day incidence of C. difficile (6.9% vs. 3.6%, P = 0.1).

Conclusion. Our study, with a large sample size and a low overall incidence of SSI, did not find a significant difference in either SSI rates or 60-day C. difficile rates between ertapenem and non-ďertapenem prophylaxis in colorectal surgery. Given the rise of Gram-negative resistance, this study highlights an important opportunity for carbapenem stewardship.

Disclosures. All authors: No reported disclosures.

1102. Ertapenem vs. Non-ďertapenem Antibiotics in Colorectal Surgery: A Stewardship Opportunity
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Session: 135. Antibiotic stewardship: Surgical Prophylaxis
Friday, October 4, 2019: 12:15 PM

Background. The optimal regimen for antibiotic prophylaxis in colorectal surgery is not well defined. The aim of this study was to determine whether non-ďertapenem antibiotic prophylaxis in colorectal surgery is associated with increased rates of surgical site infections (SSI), defined by both deep and incisional infections, compared with ertapenem prophylaxis. Secondary aims were to identify differences in C. difficile infection rates at 60 days between the two groups.

Methods. This was a single-center retrospective study from November 2016 to December 2018 at a 600-bed teaching hospital equipped with a Level I Trauma Center in Central Texas. National Healthcare Safety Network (NHSN) criteria for colorectal surgical site infection (SSI) were used to identify eligible patients. Patients under 18 years or lacking pre-operative antibiotic documentation were excluded. SSI and C. difficile rates between the two prophylactic strategies were compared using Chi-squared and Fisher’s exact tests as appropriate.

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Conclusion. Our study, with a large sample size and a low overall incidence of SSI, did not find a significant difference in either SSI rates or 60-day C. difficile rates between ertapenem and non-ďertapenem prophylaxis in colorectal surgery. Given the rise of Gram-negative resistance, this study highlights an important opportunity for carbapenem stewardship.

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