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
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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 type of prophylaxis, and, in the case of vancomycin, clinician-documented reasons for vancomycin use (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.

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 (10,455/21,396, 48.9%), followed by orthopedic total joint replacement surgeries (8,044/38,675, 20.8%), vascular surgeries (1,504/8,177, 18.6%) and colorectal surgeries (346/10,810, 3.2%). The most common reason for vancomycin use was a perceived high facility rate of MRSA (7,367, 36.2%) followed by β-lactam allergy (4,855, 23.9%) and high-risk patient (1,420/20,349, 7.0%). There was no reason documented in 5,194 (25.5%). The most common reason for vancomycin use differed by surgical type. Among cardiac and orthopedic cases, high facility rate was the most commonly reported reason, but β-lactam allergy was the most common driver among vascular and colorectal procedures.

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.

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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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Background. Prolonged courses of antimicrobials are common following cardiac device procedures, but there are little data to explain drivers of this practice and factors that may facilitate change.

Methods. We conducted formative evaluations consisting of semi-structured, qualitative interviews with electrophysiologists (EP) to identify perceived barriers to discontinuing post-procedure antimicrobial prophylaxis and factors that may facilitate improvements. A directed content analysis approach was used to map qualitative responses to key factors in the Proctor Implementation Outcomes Framework, with flexibility to allow for new themes to emerge. Interviews ceased after data saturation was reached.

Results. 13 interviews were conducted with EPs representing diverse US regions (Northeast, Midwest, South, West) and diverse settings of care (academic, community, VA). Responses to questions about antimicrobial use and willingness (or lack thereof) to stop post-procedural antimicrobials most commonly mapped to the acceptability domain; feasibility, fidelity, cost and appropriateness were also frequently identified factors (see figure for exemplary quotes). Themes that emerged during the interview process associated with prolonged antimicrobial prescribing included beliefs and knowledge of local culture and normative practices. There was a strong “cultural inertia” to conform to normative practices within an institution. Reasons for this ranged from reports of streamlining processes for clinical staff to ensure standardized care across all patients and concerns about being perceived as an “outlier.” Infectious diseases staff were important influencers of practice and potential facilitators of improvement.

Conclusion. Formative evaluations of stakeholders are essential for designing successful implementation interventions to facilitate behavioral change. Local culture appeared to be a major driver of antimicrobial use. The desire to conform to normative behaviors and to promote institutional standardization suggests that strategies to facilitate implementation of antimicrobial stewardship guidelines must include facility-level changes, rather than individual-provider-level interventions.

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1102. Ertapenem vs. Nonertapenem Antibiotics in Colorectal Surgery: A Stewardship Opportunity
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Session: 135. Antibiotic stewardship: Surgical Prophylaxis
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Background. The optimal regimen for antibiotic prophylaxis in colorectal surgery is not well defined. The aim of this study was to determine whether nonertapenem 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.

Results. A total of 761 patients were included in the analysis. There were 87 patients in the ertapenem group and 674 patients in the nonertapenem group. Antibiotics included in the nonertapenem 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 nonertapenem 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 nonertapenem prophylaxis in colorectal surgery. Given the rise of Gram-negative resistance, this study highlights an important opportunity for carbapenem stewardship.

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1103. Improving Perioperative Prophylactic Antimicrobial Guideline Concordance in Liver and Lung Transplant Recipients
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Session: 135. Antibiotic stewardship: Surgical Prophylaxis
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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 nonertapenem prophylaxis in colorectal surgery. Given the rise of Gram-negative resistance, this study highlights an important opportunity for carbapenem stewardship.

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