2212. Analysis of Cardiac Implantable Electronic Device Infection Costs at One Year in a Large United States Healthcare Organization
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Background. The objective of this analysis was to characterize the Cardiac Implantable Electronic Device (CIED) infection rate and healthcare costs from a large US healthcare organization perspective.

Methods. A retrospective analysis of a large US healthcare organization identified Commercial and Medicare Advantage members ≥18 years of age with ≥1 claim for a (CIED) procedure between October 1, 2011 and October 31, 2015 and with continuous enrollment with medical and pharmacy coverage for 6 months prior to CIED implant. Patients were divided into cohorts by device type (pacemaker (IPG), cardioverter defibrillator (ICD), and cardiac resynchronization pacemaker without (CRT-P) and with defibrillation (CRT-D)). Kaplan-Meier was used to assess time to first post-implant CIED infection within 1 year. For the subset of patients with continuous enrollment for ≥1 year following implant, an unadjusted cost of infection was calculated 1 year post-index based on patient and plan paid amounts. Infection-related costs were defined as the difference in average total medical expenditures of patients with and without CIED infection.

Results. A total of 415, predominantly male (84%) patients with a median age of 71 years contributed to 385 person years (PY) of follow-up. There were 3 (0.2%) infections, resulting in an incidence rate of 0.76/100 PY. Total annual medical costs were, on average, $81,653 (95% confidence interval: $64,253–$99,054) higher for patients with a CIED infection as compared with those without an infection. For those with infection, the total average medical costs at 1 year was: $39,498 (SD $16,842); ICD = $160,970 (SD $186,515); CRT-D = $131,511 (SD $206,760); CRT-P = $133,813 (SD $321,836). A majority of infections (73%) were seen among patients with ICD/CRT-Ds, undergoing replacement procedures, or those with prior CIED infection (56% of CIED implants).

Conclusion. The CIED infection rate at 1 year ranged from 0.8% to 2.54% depending upon device type. Management of CIED infections among Commercial and Medicare Advantage beneficiaries is associated with high healthcare expenditures.

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2213. Risk Factors for Incident Vascular Graft Infections
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Background. Due to the aging of the population, open and endovascular reconstructive vascular surgery has become increasingly common. Vascular graft infections (VGI) are serious complications with a cumulative incidence rate of 1-6%, leading to increased morbidity and mortality. Previously described associations with VGI include groin incision, extended procedure time, comorbid conditions, and local wound infections. We aimed to identify potentially avoidable risk factors for VGI, which are important measures for improved future infection prevention strategies.

Methods. Participants of the prospective Vascular Graft Infection Cohort (VASGRA) with vascular surgery between May 2013 and April 2017 were included. Observation time was calculated from vascular surgery until confirmed VGI or last follow-up, whichever occurred first. Patient- and procedure-related variables were assessed by infection status using chi-square test, Fisher’s exact test or Wilcoxon rank-sum test, whichever was appropriate. Uni- and multivariable Cox proportional hazard regression models, adjusted for demographic factors, were applied to assess risk factors for developing a VGI.

Results. A total of 415, predominantly male (84%) patients with a median age of 71 years contributed to 385 person years (PY) of follow-up. There were 3 (0.2%) infections, resulting in an incidence rate of 0.76/100 PY. Total annual medical costs were, on average, $81,653 (95% confidence interval: $64,253–$99,054) higher for patients with a CIED infection as compared with those without an infection. For those with infection, the total average medical costs at 1 year was: $39,498 (SD $16,842); ICD = $160,970 (SD $186,515); CRT-D = $131,511 (SD $206,760); CRT-P = $133,813 (SD $321,836). A majority of infections (73%) were seen among patients with ICD/CRT-Ds, undergoing replacement procedures, or those with prior CIED infection (56% of CIED implants).

Conclusion. Among vascular surgery patients, procedure-related factors (open surgery and extended procedure time) contribute to the risk of VGI. In contrast, timely application of perioperative prophylaxis showed a highly protective effect on VGI development.

Disclosures. All authors: No reported disclosures.
Background. Surgical site infection (SSI) is one of the most common health-care-associated infections (HAIs). SSI following surgery on thoracic aorta, such as mediastinitis and infection of reconstructed vessel, is often critical, but its epidemiology has not been well described. This study aims to describe the epidemiology and assess risk factors associated with SSI following thoracic aortic surgery (TAS) in Japan, using a Japanese national database for HAIs.

Methods. Data on TAS performed between 2012 and 2014 were extracted from a national surveillance system for healthcare-associated infections, Japan Nosocomial Infections Surveillance (JANIS). Risk factors associated with SSI following TAS were assessed using multivariate logistic regression analysis.

Results. The overall incidence of SSI following TAS was 4.1% (146/3,538). The proportion of incisional SSI and organ/space SSI was similar (71 and 75, respectively). Staphylococci were the major causative pathogens. Among the three traditional risk factors included in the National Nosocomial Infections Surveillance (NNIS) risk index, American Society of Anesthesiologists (ASA) score and wound class were insignificant in predicting SSI, leaving duration of operation the sole significant risk factor. Additional risk factors were identified, including emergency and male gender.

Conclusion. Risk factors associated with SSI following TAS were identified. In order to accurately compare hospital performance regarding SSI following TAS, emergency and gender should be incorporated into risk adjustment model.

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2215. Vancomycin Prophylaxis (VAN PPs) for Intra-aortic Balloon Pump (IABP) Masayuki Nigo, MD; Luis Ostrosky-Zeichner, MD, FIDSA, FSHEA; Barry J Ziduff, MD; Rodrigo Hasbun, MD, MPH; Bindu Akkanti, MD and Biswajit Kar, MD

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Background. Vancomycin (VAN) has been used in some facilities to prevent intra-aortic balloon pump (IABP)-related infections. However, the data are scarce. Emergence of drug-resistant organisms, costs and side effects of VAN are significant concerns. The use of VAN prophylaxis (PPx) for IABP was decided by the admitting physicians in our facility.

Methods. A retrospective observational study of adults with an IABP at Memorial Hermann Hospital from 07/2012 until 3/2016 was conducted. Patients were excluded if they were treated with other antibiotics for more than 24 hours after the insertion or if they were less than 18 years old. All demographic data, clinical information, and the durations of VAN PPs and IABP were analyzed. Outcomes evaluated were all-cause mortality, fever, positive blood cultures, IABP site infections and IABP exchange.

Results. A total of 352 patients was identified; 154 patients were excluded due to concomitant use of antibiotic therapy (n = 135) and due to age <18 years old (N = 19). 198 patients were eligible; 55 (28 %) received VAN PPs and 143 (72 %) did not receive VAN. APACHE II score was significantly higher in VAN PPs group compared with non-PPx group (12 and 10, respectively P = 0.01). Non-VAN PPs group had more ST segment elevation myocardial infarction as the indication of IABP than VAN PPx group (12 and 10, respectively P = 0.01). Non-VAN PPs group had more ST segment elevation myocardial infarction as the indication of IABP than VAN PPs group (50 vs. 16%, P = 0.01). Otherwise, no significant differences in the baseline characteristics were seen among the groups, A/Rs evaluted outcomes were NOT significantly different between VAN PPs and non-PPxs groups. An event free Kaplan Meier (KM) curve was not different between the groups (Log Rank P = 0.514) (Figure 1). After propensity score matching with APACHE II score, no difference of outcomes were seen. 24 % of patients in PPx group had inadequate VAN trough levels (less than 10 mcg/mL). The rates of multi-resistant organisms or Clostridium difficile related infections were not significantly different between the groups.

Conclusion. VAN PPs did not change patient outcomes nor prevent IABP infections. Frequent inadequate VAN levels were observed in VAN PPs group. Further larger studies are warranted to confirm the findings.