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Epidemiology and Outcomes of Surgical Site Infections After Coronary Artery Bypass Grafting Surgeries in Oman

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Purpose: the purpose of this study was to estimate the prevalence rate, identify the common isolated microorganism, predicting risk factors, estimating the following mortality rate, case-fatality rate, length of stay, and healthcare cost of SSIs after CABG surgeries in Oman.
Methods: Retrospective nested case-control design was used to identify both prevalence rate and the risk factors related to SSIs of adult's patients (n = 596) who undergone CABG surgeries over 2 years (2016 – 2017) in two big tertiary hospitals in Oman.
Results: The overall calculated prevalence rate of SSIs after CABG was 17% (n = 104). Gram positive bacteria identified as the most isolated microorganism (45.2%). The adjusted Odds ratio for significant predictor of SSIs was as the following: female gender (OR = 3.2, $p < 0.001$), diabetes mellitus (OR = 5.83, $p < 0.001$), overweight or obese (OR = 2.14, $p < 0.05$), razor shaving technique (OR = 8.4, $p < 0.001$). The overall calculated mortality rate after CABG surgeries was 3%, whereas the case-fatality rate was 5.8%. The mean increased length of stay associated with SSI was 13 extra hospital days. The mean of increased healthcare cost associated with SSI was 669 Omani Rial per infection.
infection: Among the gram positive bacteria which identified as the most isolated microorganism *Staphylococcus epidermidis* (21.2%), followed by *Staphylococcus aureus* (15%). Whereas the most prevalent microorganism among Gram- negative bacteria was *Escherichia coli* (10.7%).
Conclusion: Surgical Site Infections are a very serious post surgeries complication associated with CABG surgeries. The estimated prevalence rate in Oman is greater than the international rates. Identifying the most isolated microorganism, risk factors and the impact of SSIs on the healthcare system is the ground work to prevent these infections. Likewise, the results of this study can be the reference point for future preventive strategies and quality improvement projects at both institutional and national level.

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Keywords:
CABG surgeries, Oman and SSI

Abstract Summary:
Surgical Site Infections (SSIs) are considered to be one of the most recognized complications after Coronary Artery Bypass (CABG) surgeries. SSIs are linked with enormous burden on the healthcare system at the patient and institutional levels.

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