Surgical Site Infection following Abdominal surgery: Incidence and Risk Factors

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ABSTRACT

INTRODUCTION: Surgical Site Infection (SSI) is one of the most common complications of abdominal surgery. The goal of this study was to describe the incidence and risk factors associated with SSI in abdominal surgery. **METHODS:** All patients undergoing abdominal surgery between February 1, 2016 and July 31, 2016 at a single large academic hospital were included in the cohort. Patients were followed prospectively for 30 days. **RESULT:** 337 patients had abdominal surgery. The overall incidence of SSI was 16%. The independent predictors of SSI were open surgical approach, Emergency operation, prolonged operation and male gender. **CONCLUSION:** SSI is a common preventable post-operative complication of abdominal surgery. Potentially modifiable independent risk factors including prolonged operations, open approach and emergency surgery should be addressed systematically.

INTRODUCTION

SSI is one of the most common healthcare-associated infection. It occurs following 1% –3% of all surgical procedures. Reported rates of SSI following abdominal surgery range from 15%–30% depending on the level of contamination.¹⁻² Our goal of this study was to describe the incidence and risk factors associated with SSI following abdominal surgery.

METHOD

- A prospective study that was conducted at King Abdulaziz University Hospital (KAUH) in Jeddah, Saudi Arabia between February 1, 2016 and July 31, 2016.
- Inclusion criteria: all patients aged 12 years and older, undergoing abdominal surgery.
- Exclusion criteria: gynecological, vascular, plastic and urological operations.
- Data included: patient demographics, preoperative risk factors, operative variables and postoperative outcomes.
- Patients were followed prospectively for 30 days. Wound assessment was done using the CDC's definition for SSI.
- Univariable analysis was used to guide multivariable models.

RESULT

337 patients were enrolled, mean age was 43.6 years. Patients were predominately Female (57%). The mean BMI was 31 kg/m². 21% of the patients were diabetic and 12% smokers. 76% of the cases were elective vs. 24% emergency. 59% were laparoscopic vs. 41% open. The mean operative time was 145.2 minutes.

SSI Incidence

The overall rate of SSI was 16%, of these 54% were deep infections.

RESULT

SSI Rate Per Operation

SSI Rate by Approach

Independent predictors of SSI

Male gender (OR = 2.6), emergency operation (OR= 4.8), open approach (OR=6.6), length of operation (OR=2.1) and operation lasting longer than 3 hours.

Bacteria and Sensitivity

The most commonly implicated pathogens were Gram negative bacteria mainly ESBL E.coli (34%) followed by pseudomonas and klebsiella. Only 23% cultured bacteria were sensitive to the prophylactic antibiotic given preoperatively.

CONCLUSION

SSI is a common preventable postoperative complication of abdominal surgery. Potentially modifiable independent risk factors should be addressed systematically. We recommend to tailor the antibiotic prophylactic regimens to target the commonly isolated organisms especially in presence of independent risk factors.

REFERENCES

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