



A COMPARATIVE STUDY OF SURGICAL SITE INFECTION BETWEEN ELECTIVE AND EMERGENCY ABDOMINAL SURGERIES IN TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Surgical site infection (SSI) is the second most common complication following surgical procedures due to entry of virulent bacteria, altered wound microenvironment and changed host defense. Prevention of SSI requires a Multifactorial approach focussed on pre, intra and postoperative factors. Surgical site infections (SSI) are serious postoperative complications with significant impact on morbidity of the patients. The study was aimed to study the risk factors in causing surgical site infection following emergency versus elective laprotomy. **Materials And Methods:** It is a Prospective and Comparative study. Study of Hundred(100) patients who underwent elective and emergency laprotomy were taken up for the study after fulfilling the selection criteria. A written informed consent was taken from the patients before enrolment into the study. Thorough history was obtained by structured proforma. Patients were post operatively followed up until discharge for any surgical site related complications. Routine blood investigations was done and pus sent for culture and sensitivity and Antibiotics given according to Sensitivity report. **Results:** In our study 50 patients who underwent elective laprotomy 5(10%) of them developed surgical site infection and 50 patients who underwent emergency laprotomy 10(20%) patient develop surgical site infection. Malnutrition, increasing age, contaminated wound were found in relation with higher incidence of SSI. In both elective and emergency cases dirty wound has highest incidence of SSI. Staphylococcus aureus commonest organism isolated in both elective and emergency cases. **Conclusion:** Higher incidence of SSI was seen with Increasing age of the patient, contaminated wound, malnutrition. Awareness among hospital staff regarding for infection control and strict following of the aseptic precautions is the need of the hour.

KEYWORDS : *Surgical site infection; Elective surgery; Emergency surgery; Laparotomy*

INTRODUCTION

Surgical site infection (SSI) is defined by the Centre for Disease Control and Prevention as a wound infection that occurs within 30 days of an operative procedure or within a year if an implant is left in place and the infection is thought to be secondary to surgery.¹ Surgical site infections (SSI) is a significant barrier in the early recovery of patient. While once considered a necessary evil, as famously described by Osler: "Except on few occasions, the patient appears to die from the body's response to infection rather than from it",² there has been a slow yet powerful paradigm shift towards early identification and appropriate treatment of these infections.

In abdominal surgeries SSI has been identified as one of the most important causes for postoperative morbidity.³ In an era dominated by Enhanced Recovery Programs⁴ and day care surgery,⁵ with the ultimate goal of early recovery and return to normalcy, SSI's is a significant obstacle.

Surgical site infections are classified based on bacterial load at the time of surgery⁶:-

- Class I clean wounds.
- Class II clean / contaminated wounds.
- Class III contaminated wounds.
- Class IV dirty wounds.

Prevention is better than cure for SSI, and prevention begins with identification of risk factors. This allows for early identification of the patients who are more prone for development of SSI. This study was therefore conducted to identify the risk factors associated with SSI's and correlating that factors with the type and severity of infections encountered, so as to allow for early treatment of patients. The aim of the study were to compare the incidence, severity and microbiological profile of surgical site infections following emergency and elective laprotomy.

MATERIAL AND METHODS

This study is a Prospective and Comparative study on 100 patients with 50 elective and 50 emergency laprotomy done in Government Medical College and associated group of hospitals, Kota, during the period of February 2021 to December 2022.

Subject & Selection Method:

A total of 100 patients who underwent elective and emergency abdominal surgeries at the Department of General Surgery, Government medical college kota were included.

Inclusion Criteria:

The patients underwent abdominal surgeries both elective and emergency, for various reason were studied.

Exclusion Criteria:

Patients with pre-existing infections were excluded. Procedure methodology : After taking written informed consent, a structured questionnaire proforma was used to obtain the data of the selected patients retrospectively. The objectives and method of study explained to the patients. The selected patients were counselled about the study and informed written consent was taken. Post operatively patients were followed up for any wound related complications. Routine blood investigations and pus from wound sent for culture and sensitivity and antibiotic started according to sensitivity report^{7,8}.

Statistical Analysis :

Data processing and statistical analysis was done with the help of a staff statistician using SPSS 17.0.1 (Statistical Package, Software for windows, Chicago: SPSS. Inc)

RESULTS

This study was conducted from February 2021 to December 2022. A total of 100 eligible patients with 50 elective and 50 emergency abdominal surgeries done in Government Medical College and Associated Group of Hospitals. Kota. The data collected, analysed and

In present study among the elective cases who had SSI, 80% had superficial incisional infection followed by deep incisional infection in 20%. None of patient had organ/space infection. Among the emergency cases who had SSI, 60% had superficial incisional infection followed by deep incisional infection in 30% and 10% of them had organ/space infection. Raka et al¹² study shows Superficial incisional SSIs were most common, followed by deep incisional, and then organ–space.¹²

In our study, in the elective cases, the highest isolated organism was *S. aureus* (60%), followed by *E. coli* and *Enterococcus* 20% each. And amongst the emergency cases, the highest isolated organism was *S. aureus* (50%), followed by *Enterococcus* (30%), and *E. coli* and *pseudomonas* (10%) each. In some surgeries, patients had mixed bacterial infections.

In Kumar A et al study the most common pathogen cultured in SSI were *A beta hemolytic streptococci* and *staphylococcus aureus*. *Staphylococcus aureus* is one of the most common pathogen isolated in SSI around the world.¹⁰

CONCLUSION

Surgical site infections has always been a major concern for surgeon, risk factor analysis, optimal management in the perioperative period and targeted therapy of established infections can decrease the burden of SSI. This Study provides information on various risk factors for SSI in tertiary hospital. In study it was observed that, increasing age of the patient, contaminated wound, malnutrition, are associated with increased incidence of SSI. Elucidation of risk factors such as the nature of surgery performed, old age, presence of remote infections allow for appropriate patient stratification and treatment of risk factors. This study also demonstrates the most common pathogen isolated in SSI. This allows for alteration of antibiotic protocols for prevention of SSI. In conclusion, the effective management of SSIs relies on a two pronged approach, consisting of risk factor management for prevention and appropriate therapy for established infection.

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