

**ROLE OF PERIOPERATIVE PROBIOTICS IN PREVENTING SURGICAL SITE INFECTION IN OPEN GASTROINTESTINAL SURGERIES: A PROSPECTIVE RANDOMIZED CONTROLLED STUDY**

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ABSTRACT Surgical site infection (SSI) remains a major postoperative complication following gastrointestinal surgery despite advances in aseptic techniques and antibiotic prophylaxis. This prospective randomized controlled study evaluated the efficacy of perioperative probiotics in reducing SSI. A total of 200 patients undergoing open gastrointestinal surgery were randomly divided into probiotic and control groups. Baseline characteristics were comparable between groups. SSI incidence was strongly associated with wound classification. Patients receiving probiotics demonstrated improved wound healing and reduced hospital stay. Perioperative probiotics may serve as a useful adjunct in improving postoperative outcomes.

KEYWORDS : Probiotics, Surgical Site Infection, Gastrointestinal Surgery, Randomized Controlled Trial

INTRODUCTION

Surgical site infection (SSI) is a common complication following gastrointestinal surgery and contributes significantly to postoperative morbidity. Probiotics may improve gut immunity and reduce infection risk. This study evaluates their role in preventing SSI.

MATERIALS AND METHODS

Study Design: Prospective randomized controlled study.

Study Setting: Department of Surgery, GSVM Medical College, Kanpur.

Study Period: 2024–2026.

Sample Size: 200 patients undergoing open gastrointestinal surgery were included. The study population was divided into two groups:

- Probiotic group (n=100)
- Control group (n=100)

Inclusion Criteria:

- Patients aged >18 years
- Elective open gastrointestinal surgeries

Exclusion Criteria:

- Immunocompromised patients
- Viral marker positive patients

Outcome Measures:

Primary Outcome: Incidence of surgical site infection (SSI).

Secondary Outcomes: SSI grading, wound healing pattern, and duration of hospital stay.

Statistical Analysis:

Data were analyzed using SPSS software. Continuous variables were expressed as mean $\pm$ SD and compared using Student's t-test. Categorical variables were analyzed using Chi-square test. A p-value <0.05 was considered statistically significant.

RESULTS

Mean age was 47.15 ± 13.75 years with comparable gender distribution. SSI increased with wound contamination. Probiotic group showed improved wound healing and reduced hospital stay.

DISCUSSION

Probiotics improved outcomes possibly via immune modulation and reduced bacterial translocation. However, traditional risk factors like contamination and comorbidities remain significant.

CONCLUSION

Perioperative probiotic therapy appears to be a useful adjunct in patients undergoing open gastrointestinal surgery. Probiotics may enhance wound healing and shorten hospital stay. However, established risk factors such as wound contamination, diabetes mellitus, and operative duration remain major determinants of surgical site infection. Further multicentric randomized trials are recommended to establish standardized protocols.

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