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Research Article

Enhanced Recovery After Surgery (ERAS) Protocol in Colorectal Surgery: A Prospective Observational Study

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ABSTRACT

Background: Enhanced Recovery After Surgery (ERAS) is a multimodal perioperative pathway designed to reduce surgical stress, accelerate recovery and shorten hospital stay. The present study evaluated the feasibility and outcomes of an ERAS protocol in patients undergoing colorectal surgery.

Methods: This prospective observational study was conducted in the Department of General Surgery and Surgical Gastroenterology, Central Hospital, South Eastern Railway, from 31 October 2018 to 30 September 2020. Thirty-five adult patients aged 35–74 years undergoing colorectal surgery were assessed for postoperative recovery, complications, readmission, hospital stay and mortality.

Results: Satisfactory pain relief was observed in 94.2% of patients. Return of intestinal physiological function occurred within 48 hours in 80%. Postoperative nausea/vomiting occurred in 2.8%, wound infection in 8.5%, respiratory tract infection in 5.7%, anastomotic leakage in 2.8%, and intra-abdominal collection in 5.7%. No patient required re-exploration. One patient (2.9%) required readmission. Mean postoperative hospital stay was 4.82 ± 1.82 days (range 2–10 days; median 5 days). One postoperative death occurred (2.9%).

Conclusion: In this prospective observational study, implementation of ERAS principles was associated with early return of bowel function, satisfactory pain control, early mobilisation and a relatively short postoperative hospital stay. Larger comparative studies are required to confirm these findings.

Keywords

Enhanced Recovery After Surgery; ERAS; colorectal surgery; fast-track surgery; postoperative recovery; length of hospital stay.

INTRODUCTION

Patients undergoing elective colorectal resection traditionally require prolonged postoperative recovery, particularly when complications occur. Enhanced Recovery After Surgery (ERAS) was developed as a multimodal approach incorporating patient selection and counselling, optimized analgesia, appropriate fluid management, early oral intake and early mobilisation. ERAS aims to attenuate the physiological stress of surgery and accelerate functional recovery.

The thesis on which this manuscript is based describes the application of an ERAS protocol to colorectal surgery and evaluates postoperative recovery, complications, readmission and hospital stay. The study was undertaken because relatively few Indian reports on ERAS in colorectal surgery were available in the study setting.

AIM AND OBJECTIVES

To assess the feasibility and postoperative outcomes of an ERAS protocol in patients undergoing colorectal surgery, with particular assessment of return of intestinal function, pain relief, mobilisation, postoperative complications, readmission and duration of hospital stay.

MATERIALS AND METHODS

Study design and setting: A prospective observational study was conducted in the Department of General Surgery and Surgical Gastroenterology, Central Hospital, South Eastern Railway.

Study period: 31 October 2018 to 30 September 2020.

Study population: Thirty-five adult male and female patients aged 35–74 years undergoing colorectal surgery were included.

Outcomes assessed: postoperative nausea/vomiting, pain relief, return of intestinal physiological function, wound infection, respiratory tract infection, urinary tract infection, anastomotic leakage, intra-abdominal collection, postoperative albumin, need for re-exploration, readmission, postoperative hospital stay and mortality.

ERAS principles included patient counselling, minimal preoperative fasting, avoidance of routine mechanical bowel preparation, multimodal postoperative analgesia, oxygen support where required, prevention of hypothermia, avoidance of routine drains, early postoperative oral intake and early mobilisation.

The original thesis states that institutional, scientific and ethical committee clearance was obtained. The study was observational and did not include a concomitant comparator arm.

RESULTS

The mean age of the study population was 55.02 ± 10.49 years. Satisfactory pain relief was reported in 94.2% of cases. Postoperative nausea/vomiting was reported in 2.8% of patients. The mean time to return of intestinal physiological function was 45.20 ± 19.37 hours (range 24–96 hours; median 36 hours), with 80% returning within 48 hours.

Postoperative wound infection occurred in 8.5% of patients, respiratory tract infection in 5.7%, and anastomotic leakage in 2.8%. Intra-abdominal collection occurred in 5.7%. No patient required re-exploration.

The mean postoperative albumin level on day 2 was 2.51 ± 0.46, with 76.5% of patients having levels between 2.1 and 3.0. One patient (2.9%) required readmission. The mean postoperative hospital stay was 4.82 ± 1.82 days, with a range of 2–10 days and a median of 5 days. One patient died during the postoperative period, giving a mortality of 2.9%.

DISCUSSION

The findings of this prospective observational study suggest that an ERAS pathway can be implemented in colorectal surgery with early recovery of intestinal function, satisfactory postoperative pain relief and a relatively short hospital stay. These findings are consistent with

the broader ERAS literature cited in the thesis, in which multimodal perioperative management has been associated with reduced length of stay and improved recovery.

In the present study, 80% of patients regained intestinal physiological function within 48 hours and 94.2% reported satisfactory pain relief. The mean postoperative hospital stay was 4.82 days. The thesis compares this finding with reports by Geltzeiler et al. and Pędziwiatr et al., which also demonstrated relatively short hospital stays following implementation of ERAS.

The readmission rate in this study was 2.9%. The thesis notes that this was comparable to the 2.5% readmission reported by Pędziwiatr et al., while other cohorts reported higher rates. The present study had one postoperative death (2.9%).

The study should be interpreted in light of its limitations. It was observational, had a small sample size of 35 patients, had no comparator arm, and did not include laparoscopic colorectal surgery. Therefore, causal conclusions regarding the superiority of ERAS over conventional perioperative care cannot be made from this study alone.

LIMITATIONS

- The study was prospective and observational without a concomitant comparator arm.
- The sample size was limited to 35 patients.
- The study duration was two years.
- Laparoscopic colorectal surgery was not included.
- The findings represent experience from a single institutional setting.

CONCLUSION

In this prospective observational study, ERAS was associated with early resolution of postoperative intestinal dysfunction, satisfactory pain relief, early mobilisation and a relatively short postoperative hospital stay following colorectal surgery. The observed readmission rate was low. ERAS appears feasible in the study setting; however, larger prospective comparative studies with standardized compliance assessment and broader outcome measures are required before firm conclusions about superiority over conventional care can be drawn.

RECOMMENDATIONS

1. Preoperative counselling and active patient participation.
2. Minimal preoperative fasting where clinically appropriate.
3. Avoidance of routine mechanical bowel preparation when not indicated.
4. Good multimodal postoperative analgesic care.
5. Prevention of perioperative hypothermia.
6. Avoidance of routine drains where not indicated.
7. Early postoperative oral intake.
8. Early mobilisation.

AUTHOR CONTRIBUTIONS

All authors contributed to the clinical work and/or supervision of the study. The first author prepared the manuscript based on the thesis data. Senior authors provided clinical supervision and critical review. Dr. Kumar Gaurav is designated as Co-author.

CONFLICT OF INTEREST

Not stated in the source thesis. To be completed by the authors according to the target journal's requirements.

FUNDING

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ETHICAL APPROVAL

The source thesis states that institutional, scientific and ethical committee clearance was obtained.

Manuscript prepared from the supplied thesis; journal-specific formatting and declarations should be checked before submission.

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