

Enhanced Recovery Protocol After Reversal of Loop Ileostomy

Asghar Ali,^{1*} Zahid Mehmood,¹ Muhammad Naseem Baloch,¹ Nida Saeed,¹
Muhammad Umer,¹ Syed Muhammad Shafqatullah¹

ABSTRACT

- Objective** To assess the effectiveness of enhanced recovery program after reversal of loop ileostomy.
- Study design** Descriptive case series.
- Place & Duration of study** Department of General Surgery, Jinnah Postgraduate Medical Centre Karachi, from February 2016 to August 2016.
- Methodology** Patients scheduled for ileostomy reversal were enrolled in this study. After written informed consent reversal of loop ileostomy was performed. Patients were observed for success (wound infection, anastomotic leak). Data was collected on predesign form.
- Results** A total of 100 patients were included. There were 10% females and 90% males. The mean age of the patients was 47.92 year. The average hospital stay was 4 days. Average duration of reversal of ileostomy made earlier was 4.5 months. Of the total, 86 patients were discharged successfully without any complication. Fourteen patients developed complications. Wound infection noted in nine and anastomotic leak in three patients.
- Conclusion** Reversal of loop ileostomy under enhanced recovery program is preferable technique in terms of postoperative complication without any additional negative implication.
- Key words** Enhanced recovery program, Reversal of ileostomy, Anastomotic leak.

INTRODUCTION:

Ileostomy is a lifesaving procedure. Indications of this operation are not same throughout the world. The reversal of loop ileostomy is considered a simple procedure but can be associated with significant morbidity and even mortality.¹ Enhanced recovery after surgery (ERAS) is a new concept to improve patient outcome after surgery by adopting certain protocols preoperatively and postoperatively.

Enhanced recovery is defined as a process of intervention like early fluid intake and mobilization (within 6 postsurgical hours), to recover early and

discharge. The main pillars of enhanced recovery program are to reduce the influences which cause negative impact and to enhance the good habits that favor the recovery. Despite of gut preparation and preoperative fasting, now surgeons encourage high carbohydrate intake just before operation that help to maintain the fluid and electrolyte imbalance occurring postoperatively.²

During intraoperative phase of enhance recovery, minimum dose of the drugs are given to enhance recovery and prevent the postoperative side effects.^{3,4} To follow enhanced recovery fewer anesthetists routinely use short acting anesthetics drugs, infusing 1000 ml of crystalloids and 500 ml colloids.³⁻⁵

Literature search, including meta-analysis on enhanced recovery program (ERP) in surgical ward has shown that ERP is effective in shortening hospital stay and complication rate.^{6,7} One study has reported that the ERAS for ileostomy reversal was associated with 76.2% success.⁸ A local study found that ERAS after ileostomy reversal is successful in 70% cases

¹ Department of General Surgery Jinnah Postgraduate Medical Centre, Karachi.

Correspondence:

Dr. Asghar Ali ^{1*}
Department of General Surgery
Jinnah Postgraduate Medical Center
Karachi
E mail: drasgharali422@gmail.com

in whom no complication occurred and patients were able to be discharged within two days. King et al reported that with ERAS program, success was achieved in 82% cases.⁹ The aim of this study was to assess the effectiveness of enhanced recovery program for patients undergoing reversal of loop ileostomy.

METHODOLOGY:

This descriptive case series was conducted in the Department of General Surgery, Jinnah Postgraduate Medical Center Karachi, from February 2016 to August 2016. Patients of loop ileostomy were enrolled in this study. The sampling technique was non-probability and consecutive. Patients of age 18-60 years of either gender with loop ileostomy planned to undergo for reversal were included. Patients with infection at ileostomy site, having granulomatous disease, inflammatory bowel disease and diabetics (BSR>186mg/dl) and those with anemia (hemoglobin <10mg/dl), were excluded from the study.

Patients were enrolled in this study after getting approval from ethical committee. Written and informed consent was taken. Patients were enrolled from outpatient department of the hospital. Basic information like age, sex, contacts etc were noted. All surgical procedures were performed under general anesthesia. After surgery patients were shifted to the ward and followed up for three days until judged fit to be discharged. Patients were assessed during hospital stay for effectiveness of ERP that included no anastomotic leak, heart rate <100/min, no fever and abdominal pain and good wound healing within hospital stay of 3-4 days when patient started taking solid food orally and discharged within 3-4 days. Presence of all the above condition was labeled as program being successful.

The data was entered and analysed through SPSS version 20. Quantitative variables like age were presented in the form of mean \pm S.D. Qualitative variables like gender and success were presented in the form of frequency and percentage. Data was stratified for age, gender and duration between ileostomy and reversal.

RESULTS:

A total of 100 patients were included. There were 90 male patients with average age of 49.6 year and 10 female patients with average age of 47.7 years. The average hospital stay of patients was four days and the average duration of the reversal was 4.5 months.

Eighty-six patients were discharged successfully without any complication. Fourteen patients

developed complications. Among them, seven patients had minor wound infection (South Hampton grade II). In two patients heavy purulent discharge (south Hampton grade III) was found. Three patients developed anastomotic leakage. Two patients were managed conservatively and in one patient exploratory laparotomy was done and loop ileostomy was made again. Two patients complained severe abdominal pain and discharge was delayed (5-6 days).

DISCUSSION:

Enhanced Recovery after Surgery is defined as a process of intervention like early fluid intake and mobilization within 6 postsurgical hours, for early recovery and early discharge. Recent studies suggest that carbohydrate rich diet in preoperative phase improves surgical results by reducing catabolic response and improve insulin resistance.^{10,11} These studies also question the use of strict nothing per oral policy and mechanical preparation of gut.¹⁰ Currently in enhance recovery program, patient should drink 4 glasses of 200 ml one day before surgery and 2 glasses of 200 ml on the morning of surgery.¹⁰ Traditionally patient is nothing per oral for 72 hours in colon anastomosis or other gut related surgeries. Recent studies have shown that early mobilization, avoidance of drainage and early oral intake as soon as patient is conscious is safe even in gut surgery.^{10,12}

Although preoperative use of drugs that reduce the postoperative nausea and vomiting, epidural anesthesia and opioids for pain control are not a part of ERP, but has significant effect on ERP.^{10,13} In this study wound infection was most common complication. The overall mean stay was four days and preoperative hospital was less than 24 hours.

In contrast to a multicenter study published in Spain, the mean stay after colorectal resection was 12.36 days.¹⁴ The long duration of hospital stay may be because of ERP in colorectal surgery. In this study wound infection was noted in 9% patients which is almost comparable to another study that reported wound infection rate of 7.3%.¹⁵

Recent studies suggest that enhance recovery program is based on avoidance of any catabolism before surgery and to maintain normal fluid and electrolyte balance, minimal use of opioids during surgery and targeted intraoperative fluid therapy. Early mobilization, short hospital stay and increase patient satisfaction is also integral part of ERP.¹¹ Same was the outcome of index study.

CONCLUSIONS:

Enhance recovery program is a new concept in surgical practice that improves patients' satisfaction, shortens hospital stay and complication rate and cost effectiveness. ERP found effective after ileostomy reversal in this study.

REFERENCES:

1. Chow A, Tilney HS, Paraskeva P, Jeyarajah S, Zacharakis E, Purkayastha S. The morbidity surrounding reversal of defunctioning ileostomies: a systematic review of 48 studies including 6,107 cases. *Int J Colorect Dis.* 2009;24:711-23.
2. Varadhan KK, Lobo DN, Ljungqvist O. Enhanced recovery after surgery: the future of improving surgical care. *Crit Care Clin.* 2010;26:527-47.
2. Kahokehr A, Sammour T, Zargar-Shoshtari K, Srinivasa S, Hill AG. Recovery after open and laparoscopic right hemicolectomy: a comparison. *J Surg Res.* 2010;162:11-6.
3. Kahokehr A, Sammour T, Sahakian V, Zargar-Shoshtari K, Hill A. Influences on length of stay in an enhanced recovery programme after colonic surgery. *Colorect Dis.* 2011;13:594-9.
4. Wennström B, Stomberg MW, Modin M, Skullman S. Patient symptoms after colonic surgery in the era of enhanced recovery—a long-term follow-up. *J Clin Nurs.* 2010;19:666-72.
5. Nicholson, ALM, Parker J, Alderson P, Smith A. Systematic review and meta-analysis of enhanced recovery programs in surgical patients. *Br. J Surg.* 2014;101:172–88
6. Greco M, Capretti G, Beretta L, Gemma M, Pecorelli N, Braga M. Enhanced recovery program in colorectal surgery: a meta-analysis of randomized controlled trials. *World J Surg.* 2014;38:1531-41.
7. Joh YG, Lindsetmo RO, Stulberg J, Obias V, Champagne B, Delaney CP. Standardized postoperative pathway: accelerating recovery after ileostomy closure. *Dis Colon Rectum.* 2008;51:1786-9.
9. King P, Blazeby J, Ewings P, Longman R, Kipling R, Franks P, et al. The influence of an enhanced recovery programme on clinical outcomes, costs and quality of life after surgery for colorectal cancer. *Colorect Dis.* 2006;8:506-13.
10. Kehlet H, Wilmore DW. Multimodal strategies to improve surgical outcome. *Am J Surg.* 2002;183: 630-41.
11. Vanounou T, Pratt W, Fischer JE, et al. Deviation-based cost modeling: a novel model to evaluate the clinical and economic impact of clinical pathways. *J Am Coll Surg.* 2007;204:570-9.
12. Di Fronzo LA, Cymerman J, O'Connell TX. Factors affecting early postoperative feeding following elective open colon resection. *Arch Surg.* 1999;134:941-5.
13. Pirzada MT, Naseer F, Haider R, Haider J, Ahmed M, Alam SN, et al. Enhanced recovery after surgery (ERAS) protocol in stoma reversals. *J Pak Med Assoc* 2017;67:1674-8.
14. Daltory LH, Morlino CI, Eaton HM, Poss R, Liang R, Liang MH. Preoperative education for total hip and knee replacement patients. *Arthritis Care Res.* 1998;11:469-78.
15. Nanavati AJ, Prabhakar S. A comparative study of 'fast-track' versus traditional perioperative care protocols in gastrointestinal surgeries. *J Gastrointest Surg.* 2014;18:757-67.

Received for publication: 11-08-2018

Accepted after revision: 30-11-2018

Author's Contributions:

Asghar Ali: Study design, manuscript writing.

Zahid Mehmood: Manuscript writing, data analysis, data interpretation.

Muhammad Naseem Baloch: Final approval after necessary corrections.

Nida Saeed: Data collection, article searching.

Muhammad Umer: Data collection, article searching.

Syed Muhammad Shafqatullah: Manuscript correction.

Conflict of Interest:

The authors declare that they have no conflict of interest.

Source of Funding:

None

How to cite this article:

Ali A, Mehmood Z, Baloch MN, Saeed N, Umer M, Shafqatullah SM. Enhanced recovery protocol after reversal of loop ileostomy. J Surg Pakistan. 2018;23(4):141-4. Doi:10.21699/jsp.23.4.6.