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AN OBSERVATIONAL STUDY OF EARLY ENTERAL NUTRITION IN PATIENTS WHO UNDERWENT GASTROINTESTINAL SURGERY IN A TERTIARY CARE CENTER.

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ABSTRACT

Background: The Aim was to study if Early Enteral Nutrition has resulted in early recovery clinically, decreased the morbidity, reduced the hospital stay.

Material and Methods: Patients who undergone Gastrointestinal surgery were selected and divided into two categories depending upon starting the Enteral nutrition following surgery and were observed for early recovery, reduced hospital stay and decrease in morbidity. All the patients that undergone GI surgery without any preoperative chemotherapy or radiotherapy were included. Patients who undergone emergency GI intervention were excluded.

Result: Morbidity was significantly less for patients who has taken feeding enterally in a span of 24 hours following gastrointestinal surgery and length of the stay in the hospital was also drastically less. Addition to this there were lesser incidences of post operative wound infections and faster recovery. These findings indicated the benefits of early enteral feeding in GI surgery unless it is absolutely contraindicated.

Conclusion: Traditionally, patients undergoing major gastrointestinal surgery were kept nil per oral (NPO) to prevent postoperative nausea, vomiting, and anastomotic leaks. However, this research has shown that early enteral feeding has a positive outcome when compared to nil per oral, supported by numerous studies demonstrating improved nutritional and immunological status, facilitating quicker recovery and shorter hospital stays.

Keywords: Early Enteral feeding, Gastrointestinal surgery, nil per oral, hospital stay, Early recovery, Enteral feeding, Nil per oral, abdominal surgery, postoperative.

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INTRODUCTION

After gastrointestinal surgery, patients had been kept nil per oral till they pass flatus or faeces. Nevertheless, numerous research studies have demonstrated that initiating early nutritional intake after gastrointestinal surgery is considered more physiologically appropriate and safer for the patient. It prevents trauma induced morphological and functional changes in the gut and can regulate immune and inflammatory responses. Early feeding has also been linked to a decrease in postoperative infections and complications such as anastomotic leakage, surgical site infection, pneumonia, and intra-abdominal abscesses, ultimately resulting in decreased stay in hospital.

Overall, early enteral nutrition has been associated with reduced postoperative morbidity and improved patient outcomes. The main objective is to determine that early enteral nutrition has resulted in improvements in immunological and nutritional status, early recovery clinically decreased morbidity, and reduced hospital stay.

MATERIALS AND METHODS

Study is conducted in department of General surgery, The study centred on individuals who underwent gastrointestinal surgery and were chosen to be given early enteral feeding. The goal was to observe improvements in nutritional and immunological status, and also early recovery, reduced length of hospital stays, and decreased morbidity. All patients who had undergone GI surgery without preoperative chemotherapy or radiotherapy were included, while those who had undergone emergency GI intervention or were pregnant were excluded.

Early enteral feeding administered orally, began within 24 hours after GI surgery, starting with sips of water and gradually increasing to a liquid diet and soft diet as tolerated. Patient demographic data, including age, gender, diagnosis, and procedure performed, were recorded. Patients were observed for abdominal pain and distention during feeding, and the results were assessed with onset time of bowel sounds, passing flatus/ stools postoperatively, length of hospital stay, complications like nausea, vomiting, anastomotic leaks, Surgical site infections. For Statistical analysis version 20.0 of Statistical Package for Social Sciences is utilized.

RESULTS

There were about 20 subjects in the Early Enteral nutrition category and 20 subjects in the conventional feeding category operated in the previous year the mean age of the subjects in the early enteral nutrition group is 45.95 ± 13.44 with male to female ratio is about 7:14 and the average age of the conventional nil by mouth group is 43.30 ± 12.75 with male to female ratio of 6:9. The surgeries included are sub- total gastrectomy, Gastrojejunostomy, Hepatico-jejunostomy, ileostomy reversals, ileo-ileal and ileocolic anastomosis. Upon comparing both the groups the outcome of early feeding group is better in with early restoration of bowel

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sounds, decreased frequency of vomiting, a shorter ICU stay and reduced overall reduced stay in hospital.

TABLES AND CHARTS

Characteristic	Early enteral Nutrition	Nil by mouth	P value
Age	45.95 ± 13.44	43.30 ± 12.75	0.515
Gender (M: F)	7:14	6:9	0.506
Procedure - Hepatobiliary	7	4	
Gastric	4	9	
Small bowel	6	4	
Large bowel	7	7	

Table 1: Patient Demographic information and various surgical procedures they underwent

Postoperative outcome In days	Early enteral Nutrition	Nil by mouth	P value
Vomiting	6/12	16/4	0.0039
Bowel sounds	3.8 ± 1.38	5.16 ± 2.10	0.008
Flatus	8.0 ± 1.78	7.40 ± 2.60	0.030
ICU stay	2.42 ± 1.4	6.46 ± 2.62	<0.001
Hospital stay	5.67 ± 1.02	12.28 ± 4.58	<0.001

Table 2: A comparison of postoperative outcomes between patients

DISCUSSION

In early enteral feeding group, there is decreased incidence of vomiting, early return of bowel sounds, flatus and passed stools, reduced hospital stays postoperatively when compared to conventional feeding group. This study shows that early enteral feeding is safe rather than the practice of keeping the patient without oral intake till the return of bowel sounds or passing of flatus. Metabolic course of the patients in the elemental diet group is good compared to conventional control group and also providing elemental feeding with caution

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in the first postoperative day has proven to be better and resulted in reduced length of hospital stay. Further studies have proven that gut myo-metric activity and motor activity is not affected by the abdominal surgeries. Therefore, these studies do not support starting of oral feeds until bowel sounds were heard, or patient had passed flatus. Early enteral nutrition also has very less incidence of postoperative ileum.

In a study Carr CS, Ling KD, et al (3) conducted a randomized trial which investigated the safety and effectiveness of postoperative enteral feeding in patients who underwent gastrointestinal surgeries. The study evaluated nutritional state, intake, nitrogen balance, and gut mucosal permeability using a lactulose-mannitol test. The findings suggest that immediate enteral feeding post-bowel resection may prevent an increase in intestinal permeability, indicating a protective role by establishing a physical barrier. This approach could potentially decrease the reliance on total parenteral nutrition, leading to reduced costs and complications. Thus, this study demonstrates that early enteral nutrition enhances the outcome for all patients postoperatively, with added advantage being a more cost-effective treatment method.

Sagar S et al(15) conducted a study with 30 patients after gastrointestinal surgery and they are randomly allotted to control group and elemental diet group their results showed that clinical and metabolic course of patients in elemental group is better than keeping them nil by mouth In a study HK Andersen, SJ Lewis et al(1) conducted a 14 randomised controlled trails in a total of 1224 patients all has underwent gastrointestinal surgery the results shows that earlier enteral nutrition has reduced the risk of postoperative complications and there was no advantage in keeping them nil by mouth following gastrointestinal surgery.

G Herbert, R Perry et al (2) has studied the results of early enteral nutrition within the first postoperative day after lower gastrointestinal surgery compared to keeping them nil by mouth for duration of postoperative hospital stay and complications in postoperative period. They have taken 17 randomised control trails with 1437 patients who undergone lower gastrointestinal surgery. They have found that there is no difference in postoperative complications like leak at the anastomosis, surgical wound infection. They suggested that early enteral nutrition has led to reduced postoperative length of hospital stay.

A prospective multicenter trial conducted by R Barlow, P Price, et al (3) is a randomised controlled trail. Their results shows that operative morbidity was less for early enteral nutrition than the nil per oral group, there were lesser wound infections, chest infections, reduced length of hospital stay with better clinical outcomes.

CONCLUSION

Despite previous evidence supporting the safety of keeping patients NPO (nothing by mouth) after GI surgery, this practice is not widely adopted. Metabolic course of the patients in the elemental diet group is good compared to conventional control group and also providing elemental feeding with caution in the first postoperative day has proven to be better and

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resulted in reduced length of hospital stay. A review of literature, including this research, highlights the benefits of early feeding after GI surgery compared to conventional practices. Early feeding is associated with a shorter postoperative hospital stay, leading to decreased hospital costs, morbidity, and mortality.

LIMITATIONS

- Short duration of study.
- Limited study participants

FINANCIAL AND SPONSHERSHIP

NIL

CONFLICTS OF INTEREST

There are no conflicts of interest

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