International Journal of Life Sciences, Biotechnology and Pharma Research Vol. 14, No. 4, April 2025 Online ISSN: 2250-3137
Print ISSN: 2977-0122

DOI: 10.69605/ijlbpr_14.4.2025.90

ORIGINAL RESEARCH

A prospective evaluation of early versus conventional enteral feeding in gastrointestinal surgeries

[1]Dr. Harshavardhan Reddy, [2]Dr. R Vijaylakshmi, [3]Dr. V Uvaraj

[1]Senior Resident, [2]Professor, [3]Assistant Professor, Department of General Surgery, Government Kilpauk Medical College and Hospital, India

Corresponding author
Dr. Harshavardhan Reddy
Senior Resident, Department of General Surgery, Government Kilpauk Medical College and Hospital, India

Received: 11 March, 2025 Accepted: 30 March, 2025 Published: 10 April, 2025

SUMMARY

Heritage: Enteral vitamins remains a cornerstone of postoperative care for sufferers present process gastrointestinal (GI) surgical procedures. Early enteral feeding has been proposed to reduce postoperative complications, accelerate the go back of bowel function, and shorten health center remains. but, worries persist concerning potential risks along with anastomotic leaks and aspiration. This prospective study aimed to examine the safety and efficacy of early enteral feeding (initiated within forty eight hours of surgical operation) versus traditional feeding (initiated after the return of bowel sounds or passage of flatus) in patients undergoing GI surgeries. **Strategies:** Sixty-four patients who underwent various non-obligatory or emergency GI tactics were recruited and randomly assigned to either an early feeding organization (n=32) or a traditional feeding organization (n=32). affected person demographics, preoperative dietary markers (weight, hemoglobin, serum albumin), postoperative outcomes consisting of duration of paralytic ileus, period of health center stay, prevalence of surgical site contamination (SSI), and anastomotic leaks have been documented. Statistical analysis become carried out using chi-square and pupil t-checks, with a p-cost less than zero.05 considered good sized. **Consequences:** sufferers within the early feeding group exhibited a enormous discount inside the mean length of paralytic ileus (2.19 vs. 3.78 days; p=zero.001) and a substantially shorter clinic stay (12.eighty one vs. sixteen.06 days; p=0.001). The incidence of SSI was additionally lower within the early feeding institution (3.1% vs. 12.five%; p=0.001). No full-size difference became noted in anastomotic leak charges among the two companies (6.3% vs. 9.4%; p=0.641). Postoperative serum albumin tiers and weight were better preserved within the early feeding group. **Conclusion:** Early enteral feeding is each safe and useful, conferring a shorter length of paralytic ileus, reduced incidence of SSI, and a decreased period of sanatorium stay without increasing anastomotic leak costs. These findings assist the incorporation of early postoperative feeding protocols in habitual GI surgical care.

Key Phrases: Early enteral feeding, gastrointestinal surgery, surgical website online contamination, anastomotic leak, paralytic ileus, postoperative problem

INTRODUCTION

Optimal nutritional management is an integral component of postoperative recovery in patients undergoing gastrointestinal (GI) surgeries [1]. Traditionally, the initiation of enteral feeding has been delayed until there is clinical or radiological evidence of bowel function return, largely due to fear of gastrointestinal intolerance, aspiration, or risk of anastomotic dehiscence. However, over recent decades, various studies have underscored the potential advantages of an earlier resumption of feeding [2,3].

Importance Of Enteral Nutrients

Enteral vitamins (EN) makes use of the useful gut to supply vitamins and is strongly encouraged for hospitalized patients who can't meet their nutritional requirements orally [1]. The small gut regains its motility within some hours post-surgery, while the stomach might also take longer [4]. Early utilization of the intestine can hold the integrity of the mucosal barrier, thwart bacterial translocation, and probably lessen infectious complications [5,6]. moreover, early feeding enables counter postoperative catabolism, helping tissue restore and immune function [7].

Improved Recovery After Surgical Operation(Eras)

programs which include greater recovery after surgical operation (ERAS) have emerged, advocating for multimodal perioperative care techniques that consist of early mobilization, minimized fasting, and

DOI: 10.69605/ijlbpr_14.4.2025.90

spark off go back to oral or enteral feeding. This technique is geared toward mitigating surgical pressure and fostering a fast convalescence, with studies associating it with reduced morbidity and shorter hospital remains [2,8]. inside these protocols, early postoperative feeding is a critical intervention that addresses dietary depletion and fosters quicker return of bowel function.

Cause For Early Feeding

numerous meta-analyses have shown that early enteral vitamins (initiated within 24-forty eight hours postoperatively) can lower contamination fees and medical institution live duration whilst now not elevating the hazard of anastomotic leak in GI surgical operation sufferers [3,5]. although, some clinicians stay careful, mentioning worries approximately gastrointestinal intolerance, higher occurrence of vomiting, and potential aspiration [6]. moreover, the controversy continues regarding the best timing of feeding initiation, affected person selection standards, and the kind of enteral feeding system

StudyObjectives

In this prospective study, we compare early versus conventional feeding in GI surgical patients to address important clinical outcomes:

1. Evaluate whether early feeding shortens the duration of postoperative ileus.
2. Assess the effects on surgical site infections and anastomotic leak rates.
3. Compare overall hospital stay between the two feeding approaches.

By providing robust data on these measures, the present study aims to guide evidence-based practice in the postoperative management of GI surgery patients. We hypothesized that early enteral feeding would be well-tolerated and would yield improved clinical results compared to conventional feeding, thus supporting its broader adoption in surgical pathways.

SUBSTANCES AND METHODS

Look At Design And Putting

A potential have a look at became done at a tertiary care health center over a length of six months. Approval turned into obtained from the Institutional Ethics Committee. All person patients (aged 20-60 years) scheduled for GI surgical procedures—emergency or elective—had been screened for eligibility.

Inclusion standards

- patients elderly 20 to 60 years present process bowel resection and anastomosis or number one repair
- Diagnoses protected intestinal perforation, carcinoma of the colon, gastric outlet obstruction, diverticular sickness, intestinal adhesions, or ileal strictures.

Exclusion standards

- sufferers more youthful than 20 or older than 60 years
- regarded cardiac, renal, or hepatic dysfunction
- previous GI surgical procedures no longer blanketed by using the inclusion criteria
- people unwilling to provide written informed consent
- player Allocation and Interventions

a complete of 64 sufferers were consecutively enrolled and divided into two companies of 32 every.

- Early Feeding institution (n=32): Enteral feeding become initiated inside 48 hours submit-surgical treatment. first of all, sips or a liquid food regimen have been provided. For people with a nasogastric tube, feeding at 50 mL/hour was started out, advancing to 100 mL/hour as tolerated.
- conventional Feeding organization (n=32): Enteral feeding turned into delayed until go back of bowel sounds, passage of flatus, or as a minimum eighty four-96 hours postoperatively.

In each businesses, feeding changed into withheld or slowed if symptoms of intolerance (vomiting, big belly distension) developed. Supportive care, prophylactic antibiotics, and fluid management have been supplied in line with popular protocols.

Records series

Baseline demographic records, preoperative nutritional markers (weight, serum albumin, hemoglobin), and applicable surgical information (kind of procedure, prognosis) were recorded. Postoperatively, the subsequent parameters have been referred to:

- length of paralytic ileus (days)
- occurrence of anastomotic leak
- prevalence of surgical website contamination (SSI)
- Postoperative weight and serum albumin on Day 7
- length of sanatorium live (days)

Statistical evaluation

All facts had been entered right into a statistical software program package deal. non-stop variables which includes weight, serum albumin, and period of medical institution live had been expressed as suggest ± SD and compared the usage of the scholar t-test. express results (e.g., SSI, anastomotic leaks) were compared the use of the chi-rectangular take a look at. A p-value of <0.05 was regarded as statistically extensive.

RESULTS

Overview

The study population comprised 64 patients (n=32 in both early and conventional feeding arms). Their mean ages were comparable (early group: 46.50±9.76 years; conventional group: 47.72±8.39 years;

DOI: 10.69605/ijlbpr_14.4.2025.90

p=0.594). Slightly more males were represented, but gender distribution did not differ significantly between groups (p=0.599).

Postoperative Nutritional Markers

- **Weight**: On the seventh postoperative day, patients in the early feeding group had a higher mean weight (62.63±4.41 kg) than those in the conventional group (60.19±4.75 kg, p=0.037).
- **Serum Albumin**: Notably, patients receiving early feeding showed better serum albumin levels on postoperative day 7 (3.77±0.15 g/dL) than the conventional group (2.96±0.08 g/dL, p=0.001).

Duration of Paralytic Ileus

The early group demonstrated a significantly shorter duration of paralytic ileus (2.19±0.40 days) compared to the conventional group (3.78±0.83 days; p=0.001).

Hospital Stay

Mean hospital stay was notably shorter for the early group (12.81±1.23 days) versus the conventional group (16.06±1.16 days; p=0.001).

Postoperative Complications

- **Surgical Site Infection (SSI)**: The incidence of SSI was 3.1% in the early feeding group and 12.5% in the conventional group (p=0.001).
- **Anastomotic Leak**: Early feeding did not increase the anastomotic leak rate (6.3% vs. 9.4%; p=0.641).

Below are representative tables and figures summarizing these outcomes.

TABLE 1. Baseline Characteristics

Variable	Early Feeding (n=32)	Conventional Feeding (n=32)	p-value
Age (years)	46.50 ± 9.76	47.72 ± 8.39	0.594
Male, n (%)	20 (62.5%)	22 (68.8%)	0.599
Weight (kg)*	63.66 ± 4.41	62.75 ± 4.28	0.407
Serum Albumin (g/dL)*	3.57 ± 0.08	3.56 ± 0.08	0.765
Hemoglobin (g/dL)*	12.30 ± 0.62	12.28 ± 0.61	0.886

*Preoperative values

Table 2. Postoperative Outcome Measures

Outcome	Early Feeding	Conventional Feeding	p-value
Duration of Paralytic Ileus	2.19 ± 0.40 days	3.78 ± 0.83 days	0.001
SSI Incidence	3.1% (1/32)	12.5% (4/32)	0.001
Anastomotic Leak	6.3% (2/32)	9.4% (3/32)	0.641
Hospital Stay	12.81 ± 1.23 days	16.06 ± 1.16 days	0.001

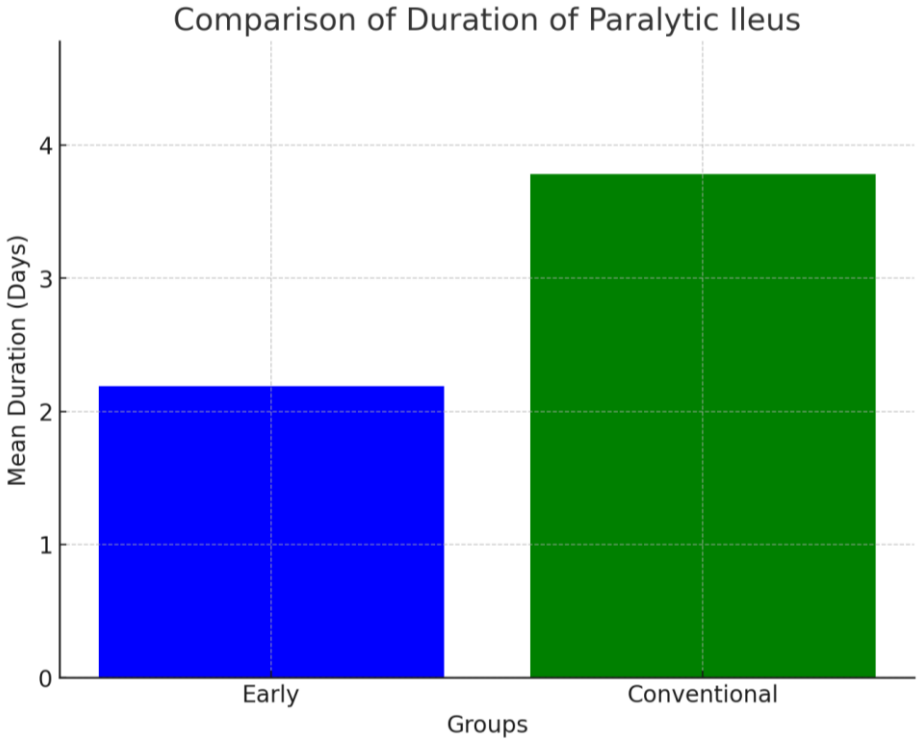

Figure 1. Comparison of Duration of Paralytic Ileus

DOI: 10.69605/ijlbpr_14.4.2025.90

Comparison of Duration of Paralytic Ileus: This bar chart visualizes the mean duration of paralytic ileus for the early feeding group and the conventional feeding group. As shown, the early feeding group had a significantly shorter duration.
Bar 1 (Early) ~ 2.19
Bar 2 (Conventional) ~ 3.78

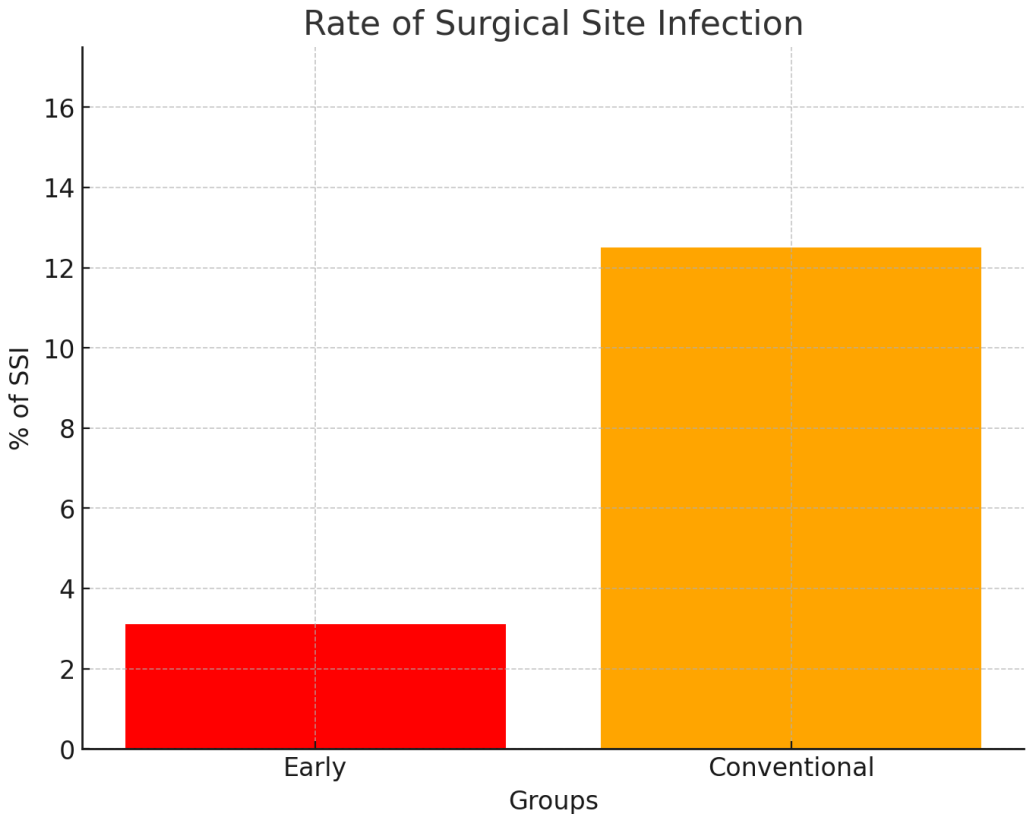

Figure 2. Rate of Surgical Site Infection

Rate of Surgical Site Infection: This bar chart displays the percentage of surgical site infection (SSI) for both groups. The early feeding group exhibited a notably lower incidence of SSI compared to the conventional group
X-axis: Groups (Early vs Conventional)
Y-axis: % of SSI
Bar 1 (Early) ~ 3.1%
Bar 2 (Conventional) ~ 12.5%

DISCUSSION

This prospective examine evaluated the effect of early enteral feeding on key consequences after gastrointestinal surgeries, which include period of paralytic ileus, surgical web site infections, anastomotic leaks, and duration of health center stay. The outcomes make stronger the developing frame of literature suggesting that early enteral feeding is both secure and high-quality in the immediate postoperative duration [9,10].

One fundamental benefit observed in our study is the shorter length of postoperative ileus inside the early feeding organization. Early dietary intervention in all likelihood stimulates gut motility, thereby facilitating quicker return of bowel function [11]. additionally, the stepped forward postoperative albumin levels in the early feeding institution spotlight the importance of timely dietary assist in maintaining adequate protein balance. Such dietary protection has been proven to be vital in wound restoration and immune protection [12].

Of particular significance is the decrease incidence of SSI amongst patients receiving early enteral feeding. possible causes include upkeep of intestine integrity, reduced bacterial translocation, and the beneficial have an impact on of advanced vitamins on immunocompetence [13]. those findings align with stronger recuperation after surgical treatment (ERAS) protocols, which an increasing number of advise early mobilization and feeding as part of a holistic technique to limit surgical stress [2].

Anastomotic leak quotes were statistically similar in both fingers, which corroborates preceding reports indicating that early feeding does no longer raise the danger of anastomotic dehiscence [5,8,14]. This outcome facilitates dispel the long-held presumption that restricting oral intake postoperatively safeguards the anastomotic website. alternatively, adequate nutrients may additionally help collagen deposition and tissue repair, potentially improving the overall healing method [15].

DOI: 10.69605/ijlbpr_14.4.2025.90

Our consequences also underscore that early feeding can significantly lessen ordinary sanatorium length of live, a locating consistent with prior randomized trials [3,6,9]. From a healthcare structures angle, shorter hospitalizations can cause decreased prices, improved bed turnover, and improved patient pride.

although, it's miles important to spotlight that patient selection, clinical judgment, and vigilant tracking remain paramount. while early feeding gives many benefits, factors just like the affected person's baseline nutritional status, comorbid conditions, and the complexity of surgical operation must be carefully considered [4]. some sufferers can also enjoy feeding intolerance, necessitating slower progression to full feeds.

In end, this look at contributes to the proof that early postoperative enteral feeding is useful and does now not compromise affected person safety. those findings make stronger hints that early feeding be integrated as a popular element of postoperative care pathways, mainly in GI surgical procedures wherein maintaining intestinal barrier function may be pivotal for patient results.

CONCLUSION

Early initiation of enteral feeding significantly enhances postoperative recovery in gastrointestinal surgery. By maintaining higher serum albumin, expediting the return of bowel function, and reducing both surgical site infection rates and hospital stays, early feeding shows clear advantages over conventional feeding methods. The comparable anastomotic leak rates between the groups underscore that early feeding does not increase postoperative risk. Overall, these findings support the implementation of early enteral feeding protocols as part of evidence-based perioperative care in GI surgeries, with appropriate patient monitoring and individualized assessment.

REFERENCCES

1. Osland, E., Yunus, R. M., Khan, S., & Memon, M. A. (2011). Early versus traditional postoperative feeding in patients undergoing resectional gastrointestinal surgery: a meta-analysis. *Journal of parenteral and enteral nutrition*, *35*(4), 473-487.
2. Heslin, M. J., Latkany, L., Leung, D., Brooks, A. D., Hochwald, S. N., Pisters, P. W., ... & Brennan, M. F. (1997). A prospective, randomized trial of early enteral feeding after resection of upper gastrointestinal malignancy. *Annals of surgery*, *226*(4), 567-580.
3. Lewis, S. J., Andersen, H. K., & Thomas, S. (2009). Early enteral nutrition within 24 h of intestinal surgery versus later commencement of feeding: a systematic review and meta-analysis. *Journal of Gastrointestinal Surgery*, *13*(3), 569-575.
4. Dag, A., Colak, T., Turkmenoglu, O., Gundogdu, R., & Aydin, S. (2011). A randomized controlled trial evaluating early versus traditional oral feeding after colorectal surgery. *Clinics*, *66*, 2001-2005.
5. Pragatheeswarane, M., Muthukumarassamy, R., Kadambari, D., & Kate, V. (2014). Early oral feeding vs. traditional feeding in patients undergoing elective open bowel surgery—a randomized controlled trial. *Journal of Gastrointestinal Surgery*, *18*(5), 1017-1023.
6. Peng, Y., Xiao, D., Xiao, S., Yang, L., Shi, H., He, Q., ... & Yu, J. (2021). Early enteral feeding versus traditional feeding in neonatal congenital gastrointestinal malformation undergoing intestinal anastomosis: a randomized multicenter controlled trial of an enhanced recovery after surgery (ERAS) component. *Journal of Pediatric Surgery*, *56*(9), 1479-1484.
7. Lewis, S. J., Egger, M., Sylvester, P. A., & Thomas, S. (2001). Early enteral feeding versus "nil by mouth" after gastrointestinal surgery: systematic review and meta-analysis of controlled trials. *Bmj*, *323*(7316), 773.
8. Zhuang, C. L., Ye, X. Z., Zhang, C. J., Dong, Q. T., Chen, B. C., & Yu, Z. (2013). Early versus traditional postoperative oral feeding in patients undergoing elective colorectal surgery: a meta-analysis of randomized clinical trials. *Digestive surgery*, *30*(3), 225-232.
9. Klappenbach, R. F., Yazyi, F. J., Alonso Quintas, F., Horna, M. E., Alvarez Rodríguez, J., &Oría, A. (2013). Early oral feeding versus traditional postoperative care after abdominal emergency surgery: a randomized controlled trial. *World journal of surgery*, *37*, 2293-2299.
10. Herbert, G., Perry, R., Andersen, H. K., Atkinson, C., Penfold, C., Lewis, S. J., ... & Thomas, S. (2019). Early enteral nutrition within 24 hours of lower gastrointestinal surgery versus later commencement for length of hospital stay and postoperative complications. *Cochrane Database of Systematic Reviews*, (7).
11. Andersen, H. K., Lewis, S. J., & Thomas, S. (2006). Early enteral nutrition within 24h of colorectal surgery versus later commencement of feeding for postoperative complications. *Cochrane Database of Systematic Reviews*, (4).
12. Imran, A., Ismail, M., Raza, A. A., Gul, T., Khan, A., & Shah, S. A. (2024). A Comparative Study Between the Early and Late Enteral Nutrition After Gastrointestinal Anastomosis Operations. *Cureus*, *16*(1).
13. Rayes, N., Hansen, S., Seehofer, D., Müller, A. R., Serke, S., Bengmark, S., & Neuhaus, P. (2002). Early enteral supply of fiber and Lactobacilli versus conventional nutrition: a controlled trial in patients with major abdominal surgery. *Nutrition*, *18*(7-8), 609-615.
14. Kallakuri, S., &Maruvada, S. S. (2025). A prospective study comparing early versus late enteral feeding in gastrointestinal surgeries. *RMC Global Journal*, *1*(1), 15-19.
15. Reissman, P., Teoh, T. A., Cohen, S. M., Weiss, E. G., Nogueras, J. J., & Wexner, S. D. (1995). Is early oral feeding safe after elective colorectal surgery? A prospective randomized trial. *Annals of surgery*, *222*(1), 73-77.