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Original Research Article

Early Oral Feeding Vs Traditional Feeding After Gastrointestinal Surgery

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Abstract

Background: Postoperative nutritional management plays a crucial role in recovery after gastrointestinal (GI) surgery. Traditional practice delays oral feeding until bowel sounds or passage of flatus, although emerging evidence supports early oral feeding (EOF) as a safe alternative.

Aim: To compare the outcomes of early oral feeding versus traditional feeding following elective gastrointestinal surgery.

Materials and Methods: This prospective comparative study was conducted at a tertiary care teaching hospital over 18 months. A total of 58 patients undergoing elective GI surgery were included and divided into two groups: Group A (early oral feeding, n=28) and Group B (traditional feeding, n=30). Early oral feeding was initiated within 24 hours postoperatively in Group A, while Group B received oral feeds after the return of bowel sounds or passage of flatus. Postoperative recovery parameters, complications, and length of hospital stay were assessed. Statistical analysis was performed using SPSS version 25, with a p-value <0.05 considered statistically significant.

Results: Baseline demographic and clinical characteristics were comparable between the two groups. Group A demonstrated a significantly earlier return of bowel sounds and passage of flatus, as well as earlier initiation of oral intake ($p < 0.001$). The mean hospital stay was significantly shorter in the early feeding group (6.2 ± 1.4 days) compared to the traditional feeding group (8.5 ± 2.1 days) ($p < 0.001$). Postoperative complications were numerically lower in Group A, with no significant increase in anastomotic leak or other adverse outcomes.

Conclusion: Early oral feeding after gastrointestinal surgery is safe and effective, leading to faster gastrointestinal recovery and reduced hospital stay without increasing postoperative complications.

Keywords: Early Oral Feeding; Traditional Feeding; Gastrointestinal Surgery; Postoperative Recovery; Hospital Stay; Enhanced Recovery.

Introduction

Postoperative nutritional management is a crucial determinant of recovery following gastrointestinal (GI) surgery. Traditionally, oral intake has been withheld until the return of bowel sounds or passage of flatus, a practice based on the belief that early feeding may increase the risk of postoperative ileus, nausea, vomiting, or anastomotic leakage. This approach, commonly referred to as traditional or delayed feeding, has been followed for decades despite limited high-quality evidence supporting its routine use. In contrast, early oral or enteral feeding, usually initiated within 24 hours after surgery, has emerged as an evidence-based alternative. Early feeding is known to stimulate gastrointestinal motility, preserve gut mucosal integrity, reduce insulin resistance, and attenuate the metabolic stress response to surgery. Maintenance of enteral nutrition also helps prevent bacterial translocation and reduces postoperative infectious complications [1]. Strong evidence supporting early feeding comes from a landmark systematic review and meta-analysis published in BMJ, which demonstrated that early enteral feeding after gastrointestinal surgery significantly reduced postoperative infections and length of hospital stay without increasing the risk of anastomotic dehiscence or mortality when compared with a nil-by-mouth approach [1]. These findings challenged the long-standing traditional practice of delayed feeding. Further support is provided by a Cochrane

systematic review that evaluated early enteral nutrition initiated within 24 hours of colorectal surgery. The review concluded that early feeding was safe and did not increase postoperative complications, while offering potential benefits in recovery and clinical outcomes [2].

The adoption of Enhanced Recovery after Surgery (ERAS) protocols has further reinforced the role of early oral feeding as a key component of multimodal perioperative care. ERAS guidelines recommend early postoperative nutrition as it contributes to faster recovery of bowel function, reduced postoperative ileus, shorter hospital stay, and improved patient satisfaction [3]. In alignment with these recommendations, the European Society for Clinical Nutrition and Metabolism (ESPEN) guidelines advocate early oral or enteral feeding in most patients undergoing gastrointestinal surgery, unless specific contraindications exist [4].

Despite robust evidence and international guideline recommendations, traditional feeding practices remain prevalent in many surgical units. This persistent variation in clinical practice highlights the need for continued evaluation and comparison of early oral feeding versus traditional feeding after gastrointestinal surgery, particularly in different clinical and resource settings.

Materials and Method

This was a prospective comparative study conducted to evaluate the outcomes of early oral feeding versus traditional feeding in patients undergoing gastrointestinal surgery.

The study was carried out in the Department of General Surgery at Government Medical College and Hospital, Karimnagar, a tertiary care teaching hospital in India.

The study was conducted over a period of 18 Months. All patients undergoing elective gastrointestinal surgery during the study period who fulfilled the inclusion criteria were considered for enrolment. A total of 58 patients were included in the study. Patients were divided into two groups based on the postoperative feeding protocol:

- Group A (Early Oral Feeding Group) : n = 28
- Group B (Traditional Feeding Group) : n = 30

Inclusion Criteria

- Adult patients aged ≥18 years
- Patients undergoing elective gastrointestinal surgery involving stomach, small intestine, or colon
- Hemodynamically stable patients in the postoperative period
- Patients who provided written informed consent

Exclusion Criteria

- Emergency gastrointestinal surgeries
- Patients with intestinal obstruction, perforation, or peritonitis
- Patients requiring postoperative ventilatory support
- Presence of postoperative complications necessitating re-exploration
- Patients with contraindications to oral feeding (e.g., prolonged ileus, bowel ischemia)

Method

Early Oral Feeding Group (Group A): Patients in this group were started on oral feeding within 24 hours of surgery, beginning with clear liquids and gradually advancing to soft and regular diet as tolerated.

Traditional Feeding Group (Group B): Patients in this group were kept nil per os until the return of bowel sounds or passage of flatus, after which oral feeding was initiated in a stepwise manner.

Both groups received standard postoperative care, including intravenous fluids, analgesia, antibiotics, and early ambulation as per institutional protocol. Clinical and demographic data were recorded using a pre-designed structured proforma. Postoperative parameters were monitored daily until discharge.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using the Statistical Package for Social Sciences (SPSS) software version 25. Continuous variables were summarized as mean ± standard deviation (SD), while categorical variables were expressed as frequencies and percentages. Comparisons between the two study groups were performed using Student's t-test for continuous variables and the Chi-square test or Fisher's exact test, as appropriate, for categorical variables. A p-value of <0.05 was considered statistically significant.

Observation and Results

Table 1: Baseline Demographic and Clinical Characteristics of Study Participants (n = 58)

Variable	Group A (EOF) n=28	Group B (Traditional) n=30	t-value/Chi-square	p-value
Mean age (years)	46.8 ± 12.4	48.2 ± 11.9	0.44	0.64
Male : Female	17:11	18:12	0.004	0.95
BMI (kg/m²)	23.6 ± 3.1	23.9 ± 3.4	0.36	0.72
Type of surgery – Upper GI	12 (42.9%)	13 (43.3%)	0.0006	0.98
Type of surgery – Lower GI	16 (57.1%)	17 (56.7%)		

Table 1 shows the baseline demographic and clinical characteristics of the study participants in Group A (Early Oral Feeding, n=28) and Group B (Traditional Feeding, n=30). The mean age of patients in Group A was 46.8 ± 12.4 years, while in Group B it was 48.2 ± 11.9 years, with no statistically significant difference between the groups ($t = 0.44$, $p = 0.64$). Gender distribution was comparable, with a male-to-female ratio of 17:11 in Group A and 18:12 in Group B ($\chi^2 = 0.004$, $p = 0.95$). The mean BMI was similar in both groups (23.6 ± 3.1 kg/m² in Group A vs 23.9 ± 3.4 kg/m² in Group B; $t = 0.36$, $p = 0.72$). The proportion of patients undergoing upper and lower gastrointestinal surgeries was also comparable between the two groups ($\chi^2 = 0.0006$, $p = 0.98$). These findings indicate that both groups were well matched at baseline.

Table 2: Postoperative Recovery Parameters of Study Participants (n = 58)

Parameter (In Days)	Group A (EOF) n=28	Group B (Traditional) n=30	t-value	p-value
Time to first bowel sound	1.6 ± 0.5	2.8 ± 0.7	7.45	<0.001
Time to passage of flatus	2.1 ± 0.6	3.4 ± 0.8	7.06	<0.001
Time to first oral intake	0.9 ± 0.3	3.1 ± 0.9	11.7	<0.001

Table 2 compares postoperative recovery parameters between the two groups. Patients in the early oral feeding group demonstrated a significantly faster recovery of gastrointestinal function.

The mean time to first bowel sound was significantly shorter in Group A (1.6 ± 0.5 days) compared to Group B (2.8 ± 0.7 days) ($t = 7.45$, $p < 0.001$). Similarly, the time to passage of flatus was earlier in Group A (2.1 ± 0.6 days) than in Group B (3.4 ± 0.8 days) ($t = 7.06$, $p < 0.001$).

The time to initiation of oral intake was markedly shorter in the early feeding group (0.9 ± 0.3 days) compared to the traditional feeding group (3.1 ± 0.9 days), and this difference was statistically significant ($t = 11.7$, $p < 0.001$). These results indicate that early oral feeding significantly accelerates postoperative gastrointestinal recovery.

Table 3: Postoperative Complications of Study Participants (n = 58)

Complication	Group A (EOF) n=28	Group B (Traditional) n=30	Chi-square	p-value
Postoperative nausea/vomiting	5 (17.9%)	10 (33.3%)	1.78	0.18
Postoperative ileus	2 (7.1%)	7 (23.3%)	2.89	0.09
Surgical site infection	3 (10.7%)	6 (20.0%)	0.91	0.34
Anastomotic leak	0 (0%)	1 (3.3%)	NA	0.31
NG tube reinsertion	2 (7.1%)	6 (20.0%)	1.98	0.16

Table 3 depicts the distribution of postoperative complications in both study groups. Postoperative nausea and vomiting were observed in 17.9% of patients in Group A and 33.3% in Group B, though this difference was not statistically significant ($\chi^2 = 1.78$, $p = 0.18$).

Postoperative ileus occurred in 7.1% of patients in the early feeding group compared to 23.3% in the traditional feeding group, showing a lower incidence in Group A, although the difference did not reach statistical significance ($\chi^2 = 2.89$, $p = 0.09$). Surgical site infections were noted in 10.7% of Group A and 20.0% of Group B patients ($\chi^2 = 0.91$, $p = 0.34$). Anastomotic leak was observed in one patient (3.3%) in Group B, while no cases were reported in Group A; this difference was not statistically significant ($p = 0.31$).

Nasogastric tube reinsertion was required in 7.1% of Group A and 20.0% of Group B patients ($\chi^2 = 1.98$, $p = 0.16$). Overall, postoperative complications were numerically lower in the early oral feeding group.

Table 4: Length of Hospital Stay of Study Participants (n = 58)

Parameter	Group A (EOF) n=28	Group B (Traditional) n=30	t-test	p-value
Length of hospital stay (days)	6.2 ± 1.4	8.5 ± 2.1	4.87	<0.001

Table 4 compares the length of hospital stay between the two groups. Patients in the early oral feeding group had a significantly shorter mean hospital stay of 6.2 ± 1.4 days compared to 8.5 ± 2.1 days in the traditional feeding group. This difference was statistically significant ($t = 4.87$, $p < 0.001$), indicating that early oral feeding contributes to earlier discharge and reduced hospitalization duration.

Discussion

In the present study, baseline demographic and clinical variables such as age, sex distribution, BMI, and type of gastrointestinal surgery were

comparable between the two groups, with no statistically significant differences. This comparability suggests that postoperative outcomes observed in the study can be reliably attributed to the feeding protocol rather than confounding baseline factors.

Postoperative Gastrointestinal Recovery: Our study demonstrated a significantly earlier return of bowel function in patients receiving early oral feeding, as evidenced by shorter time to first bowel sounds and earlier passage of flatus. These findings are consistent with the landmark BMJ meta-analysis by Lewis et al., which showed that early enteral feeding significantly accelerated gastrointestinal recovery and reduced hospital stay without increasing postoperative complications [1].

Similarly, Dag et al. reported earlier bowel movements and faster tolerance of diet in patients receiving early oral feeding after colorectal surgery, with no increase in morbidity [5]. Indian studies have also reported comparable findings. Prospective studies conducted in tertiary care centers in India observed that early feeding resulted in faster return of bowel activity and earlier mobilization, supporting the applicability of EOF in the Indian clinical setting [6,7].

Postoperative Complications: In the present study, postoperative complications such as nausea and vomiting, ileus, surgical site infection, and nasogastric tube reinsertion were numerically lower in the early oral feeding group, although these differences were not statistically significant. Importantly, early feeding was not associated with an increased incidence of anastomotic leak. These findings are in agreement with Lewis et al., who found no significant increase in anastomotic dehiscence or mortality with early feeding compared to a nil-by-mouth approach [1]. Dag et al. similarly reported no increase in postoperative complications or need for nasogastric decompression with early oral feeding [5]. Indian observational studies have also concluded that early oral feeding does not increase postoperative morbidity and is safe in selected patients undergoing elective gastrointestinal surgeries [6,7].

Length of Hospital Stay: A significant reduction in length of hospital stay was observed in the early oral feeding group in our study. This is a clinically important finding, as reduced hospitalization translates to lower healthcare costs, improved patient satisfaction, and better utilization of hospital resources.

The reduction in hospital stay observed in our study is consistent with the findings of the BMJ meta-analysis and subsequent systematic reviews, which demonstrated shorter postoperative hospitalization in patients receiving early enteral nutrition [1]. Similar reductions in hospital stay have been reported in Indian studies, reinforcing the feasibility and benefit of early feeding protocols in resource-constrained settings [6.7].

Alignment with ERAS and Guidelines: Our findings align well with Enhanced Recovery after Surgery (ERAS) recommendations, which emphasize early oral nutrition as a key element of multimodal postoperative care [3]. The European Society for Clinical Nutrition and Metabolism (ESPEN) guidelines also advocate early oral or enteral feeding following gastrointestinal surgery, unless contraindicated [4].

Conclusion

Early oral feeding following gastrointestinal surgery is safe and well tolerated. It results in a faster return of bowel function and a significantly shorter hospital stay without increasing postoperative complications. Early oral feeding should therefore be encouraged as part of routine postoperative care in appropriately selected patients undergoing elective gastrointestinal surgery.

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