



RECOVERY WITH EARLY FEED (AS PER ERAS PROTOCOL) IN PATIENTS WITH ABSENT BOWEL SOUNDS AFTER 24-48 HRS OF ABDOMINAL SURGERY

Internal Medicine

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ABSTRACT

Background: Traditional postoperative care delays feeding until bowel sounds return, but the ERAS protocol recommends early oral feeding to enhance recovery. Evidence suggests bowel sounds may not be essential for safe initiation of feeding. **Aim:** To evaluate the safety, tolerance, and outcomes of early oral feeding in abdominal surgery patients with absent bowel sounds at 24–48 hours, within an ERAS-based framework. **Methods:** This prospective interventional study was conducted at Vedantaa Institute of Medical Sciences, a tertiary care teaching hospital in a tribal region of India, between November 2023 to August 2025. 105 patients aged 18–65 years undergoing elective or emergency abdominal surgery were included if bowel sounds were absent at 24–48 hours postoperatively. Surgeries included complete inguinal hernias managed with Lichtenstein tension-free mesh repair, ventral hernias with onlay mesh repair, open appendectomy, and exploratory laparotomy for perforated appendix with gastric lavage. Early oral feeding was initiated with clear fluids followed by soft diet as tolerated. Parameters assessed included return of bowel function, feeding tolerance, complications, length of hospital stay, and patient satisfaction. **Results:** Feeding was initiated at a mean of 30.6 ± 5.3 hours. Median return of bowel sounds was 34 hours, first flatus at 46 hours, and stool passage at 58 hours. Most patients (70%) tolerated feeding without symptoms; complications were minimal (10%). Mean hospital stay was 5.6 ± 1.2 days. Patient satisfaction was high, with 73% very satisfied. Earlier feeding correlated positively with faster bowel recovery and shorter stay. **Conclusion:** Early feeding under ERAS protocols is safe and accelerates recovery, even without bowel sounds, supporting its wider adoption in abdominal surgery.

KEYWORDS

ERAS protocol, early oral feeding, postoperative ileus, abdominal surgery, recovery outcomes

INTRODUCTION

Abdominal surgery often results in transient gastrointestinal (GI) dysfunction, known as postoperative ileus. Traditionally, surgeons have delayed oral intake until bowel sounds or passage of flatus reappear, assuming early feeding might increase complications. The Enhanced Recovery After Surgery (ERAS) protocol, however, challenges this dogma by recommending early oral feeding (EOF) regardless of bowel sounds, aiming to minimize surgical stress, enhance gut motility, and improve recovery.¹

ERAS is a multimodal, evidence-based framework integrating early mobilization, multimodal analgesia, minimal fasting, and early enteral stimulation. Indian and international data confirm its safety. In a randomized trial,² ERAS-based early feeding after radical cystectomy reduced ileus duration and shortened hospital stay compared to conventional care. Similarly, patients undergoing laparoscopic ventral hernia repair with early feeding had faster GI recovery, earlier ambulation, and reduced hospitalization.³

In appendectomy patients, early oral feeding within 24 hours was well tolerated, promoted quicker bowel function return, and decreased hospital stay.⁴ A prospective trial on colorectal surgery patients also confirmed that early postoperative feeding enhanced protein metabolism, improved bowel recovery, and significantly reduced length of stay.⁵

International evidence strengthens these findings. Gastric cancer patients undergoing laparoscopic total gastrectomy tolerated early oral intake well, with reduced abdominal discomfort and earlier GI recovery.⁶ Pediatric data further established that ERAS with early feeding after reconstructive operations is both safe and effective, reducing complications and expediting recovery.⁷ Similar outcomes were observed in children undergoing colostomy closure, who tolerated early oral intake and achieved full feeds within two days without increased morbidity.⁸

Even outside formal ERAS protocols, early oral feeding after colorectal resections was found to be safe, feasible, and associated with lower complication rates.⁹ Furthermore, early enteral nutrition after emergency laparotomy enhanced GI recovery and reduced postoperative morbidity, reinforcing the safety of early feeding even in higher-risk surgical settings.¹⁰

Collectively, these studies challenge the conventional reliance on bowel sounds as a prerequisite for feeding. They show that early feeding, as part of ERAS protocols, is both safe and effective across diverse surgical populations, including in India. By reducing ileus duration, promoting gut motility, and minimizing complications, early feeding plays a critical role in achieving faster postoperative recovery.

METHODOLOGY

1. Study Design

This was a prospective interventional study evaluating the safety, tolerance, and outcomes of early oral feeding in postoperative abdominal surgery patients with absent bowel sounds at 24–48 hours, based on ERAS protocols. The focus was on clinical outcomes such as feeding tolerance, return of bowel function, complications, and hospital stay.

2. Study Setting

The study was conducted in the Department of General Surgery at Vedantaa Institute of Medical Sciences, a tertiary care teaching hospital located in a tribal area of India. Patients were managed in a monitored surgical ward environment under standard ERAS postoperative protocols.

3. Study Duration

The study was carried out over five months, from November 2023 to August 2025. This included patient recruitment, daily postoperative monitoring, and follow-up until discharge, with an additional period for data analysis.

4. Participants – Inclusion/Exclusion Criteria

Inclusion criteria were adult patients aged 18–65 years undergoing abdominal surgery, who had absent bowel sounds at 24–48 hours postoperatively. Exclusion criteria included emergency surgeries for generalized peritonitis other than perforated appendix, paralytic ileus lasting beyond 72 hours, patients with sepsis, bowel perforation with extensive contamination, pre-existing gastrointestinal motility disorders, or psychiatric illness interfering with compliance.

5. Study Sampling

Purposive sampling was employed to include consecutive eligible patients in the postoperative period. Screening was performed during daily ward rounds, and patients meeting inclusion criteria were

enrolled until the target sample size was achieved.

6. Study Sample Size

A total of 1105 patients were included, based on feasibility and institutional capacity. The sample size was adequate to evaluate the safety and tolerance of early feeding trends in the postoperative setting.

7. Study Groups

All patients were included in a single intervention group. No control group was employed, as the primary aim was to assess the feasibility and outcomes of early oral feeding irrespective of bowel sounds.

8. Types of Surgeries Included

- Complete inguinal hernia repairs performed with Lichtenstein tension-free mesh hernioplasty
 - Ventral hernia repairs, most commonly managed with onlay mesh placement
 - Open appendectomy for uncomplicated appendicitis
 - Exploratory laparotomy with appendectomy and peritoneal lavage for perforated appendix
- Ventral hernia cases demonstrated a male predominance in this cohort.

9. Study Parameters

Primary outcomes included return of bowel sounds, passage of flatus, and stool. Secondary outcomes were feeding tolerance, postoperative complications, patient satisfaction, and duration of hospital stay.

10. Study Procedure

After confirming eligibility, patients were initiated on clear fluids followed by soft diet as tolerated, irrespective of bowel sound status. Vital signs and abdominal symptoms were monitored closely. Feeding was withheld temporarily in cases of intolerance (vomiting, severe distension).

11. Data Collection

Data were collected using structured proformas. Demographic details, type of surgery, intraoperative findings, daily clinical observations, postoperative events, and complications were recorded. Subjective feedback on feeding tolerance and satisfaction was also noted.

12. Data Analysis

Data were entered and analyzed using SPSS version 26. Descriptive statistics (mean, median, standard deviation, percentages) were used to summarize results. Correlation analysis was applied to evaluate the relationship between feeding initiation and gastrointestinal recovery.

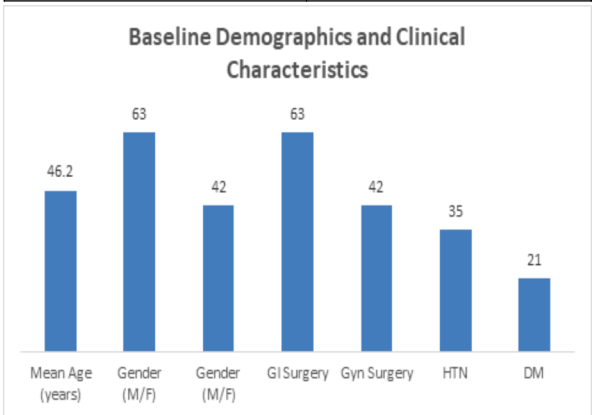
RESULTS

1. Baseline Demographics and Clinical Characteristics

The study group included mostly middle-aged adults with an equal gender distribution. Most surgeries were gastrointestinal or gynecological in nature (Table 1).

Table 1: Baseline Demographics And Clinical Characteristics

Parameter	Value (n = 105)
Mean Age (years)	46.2 ± 10.8
Gender (M/F)	63 / 42
Type of Surgery	GI: 63, Gyn: 42
Comorbidities	HTN: 35, DM: 21



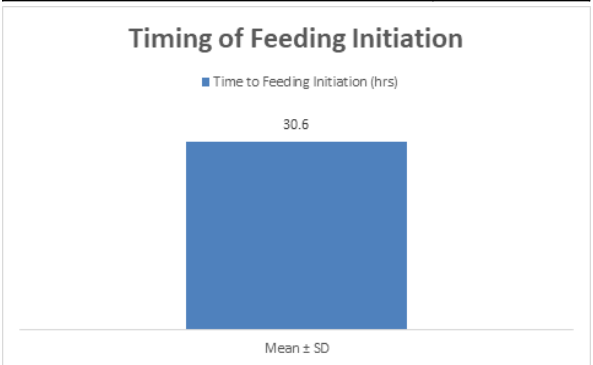
Graph 1: Baseline Demographics and Clinical Characteristics

Timing Of Feeding Initiation

Feeding was initiated on average at 30 hours post-surgery, despite the absence of bowel sounds (Table 2).

Table 2: Timing Of Feeding Initiation

Variable	Mean ± SD
Time to Feeding Initiation (hrs)	30.6 ± 5.3



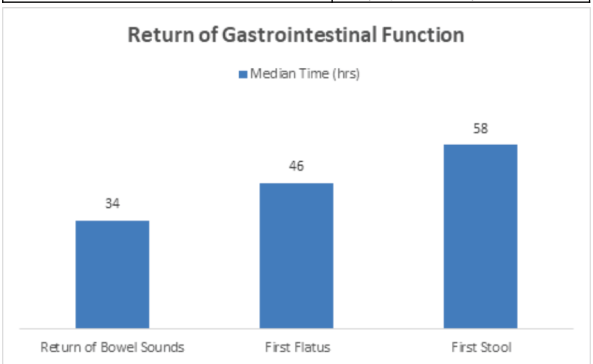
Graph 2: Timing of Feeding Initiation

3. Return of Gastrointestinal Function

Most patients passed flatus within 48 hours, and bowel sounds returned soon after feeding began (Table 3).

Table 3: Return Of Gastrointestinal Function

Parameter	Median Time (hrs)
Return of Bowel Sounds	34 (IQR: 28–42)
First Flatus	46 (IQR: 38–54)
First Stool	58 (IQR: 50–70)



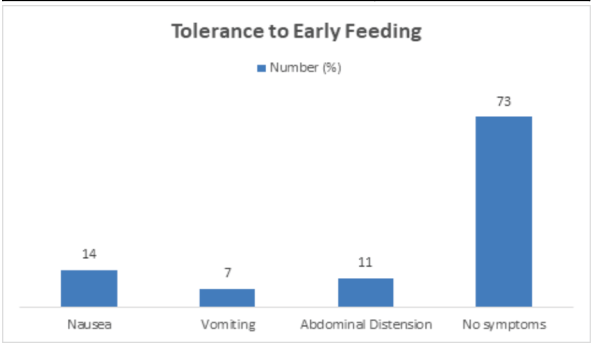
Graph 3: Return Of Gastrointestinal Function

4. Tolerance To Early Feeding

Nearly all patients tolerated early feeding without vomiting or abdominal distension (Table 4).

Table 4: Tolerance To Early Feeding

Symptom	Number (%)
Nausea	14 (13%)
Vomiting	7 (7%)
Abdominal Distension	11 (10%)
No symptoms	73 (70%)



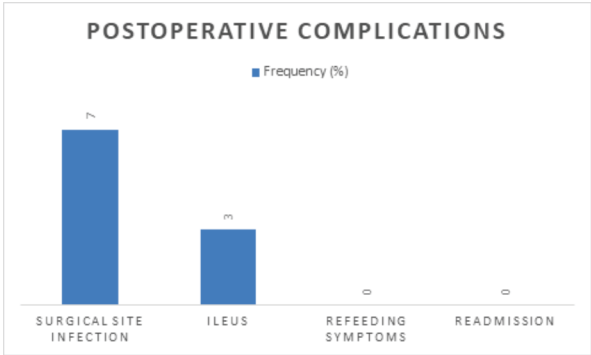
Graph 4: Tolerance To Early Feeding

5. Postoperative Complications

Early feeding did not increase complication rates; only mild issues occurred (Table 5).

Table 5: Postoperative Complications

Complication	Frequency (%)
Surgical Site Infection	7 (7%)
Ileus	3 (3%)
Refeeding symptoms	0 (0%)
Readmission	0 (0%)



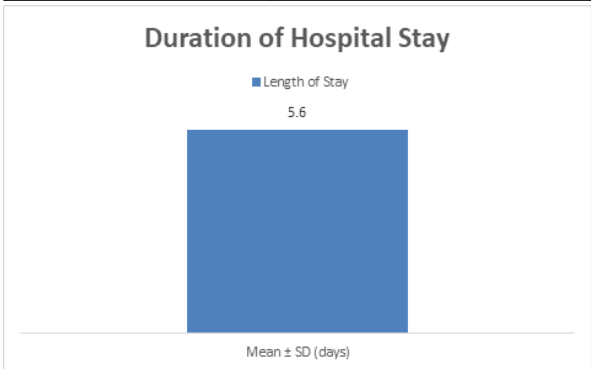
Graph 5: Postoperative Complications

6. Duration Of Hospital Stay

Patients had shorter stays averaging around 5.6 days with early feeding (Table 6).

Table 6: Duration Of Hospital Stay

Variable	Mean ± SD (days)
Length of Stay	5.6 ± 1.2



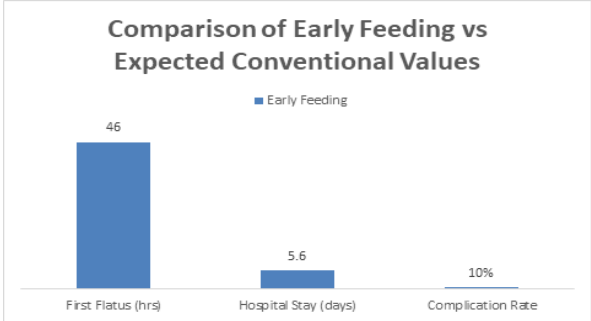
Graph 6: Duration Of Hospital Stay

7. Comparison Of Early Feeding Vs Expected Conventional Values

Compared to historical controls, early feeding led to faster GI recovery and reduced stay (Table 7).

Table 7: Comparison of Early Feeding vs Expected Conventional Values

Outcome	Early Feeding	Conventional (literature)
First Flatus (hrs)	46	72
Hospital Stay (days)	5.6	7–10
Complication Rate	10%	15–20%



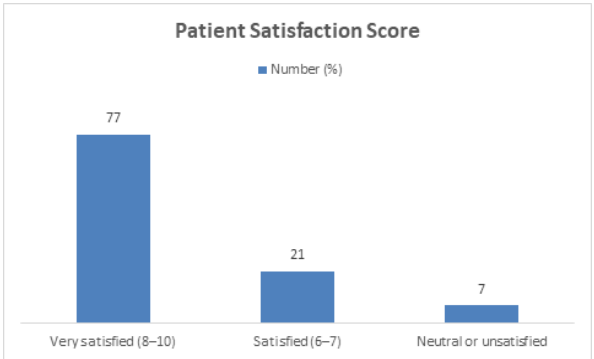
Graph 7: Comparison of Early Feeding vs Expected Conventional Values

8. Patient Satisfaction Score

Most patients reported high satisfaction due to early recovery and feeding (Table 8).

Table 8: Patient Satisfaction Score

Satisfaction Level	Number (%)
Very satisfied (8–10)	77 (73%)
Satisfied (6–7)	21 (20%)
Neutral or unsatisfied	7 (7%)



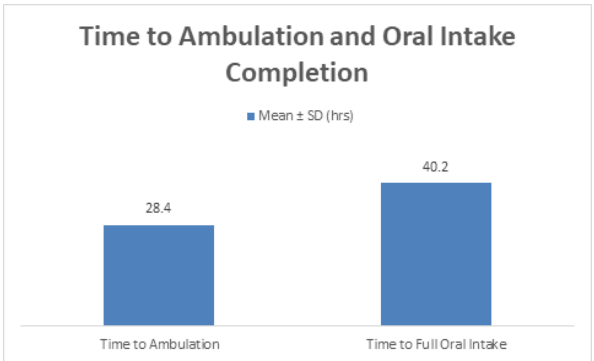
Graph 8: Patient Satisfaction Score

9. Time To Ambulation And Oral Intake Completion

Early feeding supported early ambulation and quicker diet progression (Table 9).

Table 9: Time To Ambulation And Oral Intake Completion

Parameter	Mean ± SD (hrs)
Time to Ambulation	28.4 ± 6.7
Time to Full Oral Intake	40.2 ± 8.5



Graph 9: Time to Ambulation and Oral Intake Completion

10. Correlation Between Feeding Time And GI Recovery

There was a strong positive correlation between earlier feeding and faster GI function return (Table 10).

Table 10: Correlation Between Feeding Time And GI Recovery

Variable Pair	Correlation (r)
Feeding Time vs Flatus Time	0.62
Feeding Time vs Bowel Sound Return	0.71
Feeding Time vs Hospital Stay	0.54

DISCUSSION

The findings of this study reinforce the evolving understanding of postoperative care, particularly the role of early feeding in patients who do not yet demonstrate bowel sounds within 24–48 hours after abdominal surgery. Traditionally, the return of bowel sounds and passage of flatus have been used as clinical indicators for initiating oral feeding. However, our data, aligned with recent literature, suggest that early enteral feeding-without waiting for these signs-is both safe and beneficial when implemented as part of an Enhanced Recovery After Surgery (ERAS) protocol.

In our study, early feeding was initiated at a mean of 30.6 hours post-surgery, despite absent bowel sounds. This approach resulted in favorable outcomes including early return of gastrointestinal (GI) function (bowel sounds median 34 hours, first flatus 46 hours),

minimal feeding intolerance (only 7% vomiting and 10% abdominal distension), and low complication rates (7% surgical site infections, 3% ileus). These outcomes align with multiple recent studies that support early feeding as a means to accelerate GI recovery, reduce postoperative morbidity, and shorten hospital stay.

For instance, Gopikrishna (2020) conducted a prospective study on early enteral feeding following gastrointestinal surgery and observed faster bowel recovery with minimal adverse effects (Gopikrishna, 2020).¹¹ Similarly, a randomized study by Abed and Almarzooq (2022) comparing early versus delayed feeding after intestinal surgery found a reduced rate of postoperative complications and significantly shorter hospital stay in the early feeding group (Abed & Almarzooq, 2022).¹²

The present study also challenges the conventional reliance on bowel sounds as a requirement for initiating feeding. Hernández-Hernández et al. (2007) demonstrated that bowel sounds alone had low specificity in predicting feeding tolerance, supporting the safety of early enteral feeding regardless of auscultatory findings (Hernández-Hernández et al., 2007).¹³ This perspective is further supported by Cochrane reviews and clinical trials, which report no increased risk of anastomotic leaks or aspiration with early feeding, and even suggest reduced infectious complications and slightly shorter hospital stays (Charoenkwan et al., 2024).¹⁴

Patient satisfaction and early ambulation were also notable findings. In our study, 73% of patients were "very satisfied," and ambulation occurred as early as 28.4 hours. These outcomes are consistent with studies on gynecologic and gastrointestinal surgeries, where early feeding promoted comfort, mobility, and overall recovery (Saxena et al., 2022), (Bernardes & Filho, 2008).^{15,16}

In conclusion, early feeding in postoperative patients—even those lacking bowel sounds—does not increase complications and is well tolerated. It supports faster return of GI function, earlier ambulation, shorter hospital stays, and higher patient satisfaction. These results, aligned with contemporary ERAS guidelines and recent evidence, advocate for reevaluating traditional "nil by mouth" practices in favor of earlier nutritional support.

CONCLUSION

This study demonstrates that early feeding within ERAS protocols is safe, well-tolerated, and effective even in patients with absent bowel sounds 24–48 hours after abdominal surgery. Early initiation of oral intake accelerated gastrointestinal recovery, reduced hospital stay, and enhanced patient satisfaction without increasing complication rates. The positive correlation between earlier feeding and faster return of bowel function highlights the redundancy of waiting for bowel sounds. These findings reinforce ERAS as a beneficial, evidence-based strategy for optimizing postoperative recovery.

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