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Original Article

# Early versus Traditional Oral Feeding after Elective Intestinal Stoma Closure

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## Abstract

***Background:*** *Postoperative feeding protocols following elective intestinal stoma closure remain debated, with limited consensus on optimal timing. Early enteral feeding is hypothesized to enhance recovery, reduce complications, and lower healthcare costs, particularly in resource-limited settings. The study aimed to compare the morbidity and outcome of early versus traditional oral feeding after elective intestinal stoma closure.*

***Materials and methods:*** *This quasi-experimental study compared the outcomes of early oral feeding (Within 12–24 hours post-surgery) versus traditional feeding (Initiated after ileus resolution) in 88 patients undergoing elective intestinal stoma closure (Ileostomy/colostomy) in the Department of Surgery, Chittagong Medical College Hospital from January 2022 to December 2022. Patients were divided into Group A (Traditional feeding, n=44) and Group B (Early feeding, n=44). Postoperative outcomes included bowel function recovery, complications (Fever, cough, wound infection, anastomotic leakage) and hospital stay.*

***Results:*** *Group B had significantly lower postoperative complications on days 3, 5 and 7. By day 3, Group A had higher rates of fever (61.4% vs. 20.5%) wound infection (25% vs. 9.1%), and cough (65.9% vs. 31.8%), all statistically significant ($p<0.05$). Anastomotic leakage occurred in 4.5% of Group A versus none in Group B, though statistically insignificant ($p=0.153$). Early feeding correlated with faster bowel function recovery: earlier bowel sounds, flatus and stool passage ($p<0.001$). Hospital stay was significantly shorter in Group B (4.02± 1.13 days vs. 7.95 ± 2.34 days, $p<0.001$).*

***Conclusion:*** *The study concluded that early oral feeding after elective stoma closure is safe, accelerates bowel recovery, reduces complications, and shortens hospital stay.*

**Key words:** Anastomosis leakage; Early feeding; Length of hospital stay; Stoma reversal.

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## INTRODUCTION

Intestinal stomas, including ileostomies and colostomies, are surgically created abdominal openings to divert bowel contents, commonly indicated in trauma, bowel obstruction or perforation, colorectal cancer and inflammatory bowel disease.[1] Stomas may be temporary or permanent, depending on pathology and surgical indication. Intestinal stomas can be temporary or permanent and temporary intestinal stomata must be surgically taken down after the patient has improved.[2]

As a traditional practice following intestinal stoma closure, patients are kept 'nil by mouth' till bowel sounds return and bowel function resumes. During this period, the patient remains with a nasogastric tube for decompression of the stomach and to rest in the gut. Early oral feeding following abdominal surgery is typically avoided due to paralytic ileus and has instead been replaced by routine nasogastric decompression. However, prolonged fasting may exacerbate catabolism, delay recovery, and prolong hospitalization, increasing healthcare costs and patient discomfort.[3-5]

Emerging evidence in gastrointestinal surgery challenges this paradigm of traditional practice, suggesting that early oral feeding (Initiated within 24–48 hours postoperatively) is safe and may accelerate recovery by stimulating gut motility and reducing metabolic stress. Studies in colorectal and upper gastrointestinal resections have demonstrated comparable complication rates between early and traditional feeding, with potential benefits including shorter hospital stays and improved patient satisfaction.[6-8] Despite ERAS (Enhanced Recovery After Surgery) Society guidelines recommend early postoperative feeding (6 hours after surgery) in intestinal stoma closure to reduce complications and decrease hospital length of stay, existing literature has been inconclusive in providing sufficient evidence for its use.[9-11]

Considering this background, we evaluated the safety, feasibility and efficacy of early oral feeding compared to traditional delayed feeding following elective intestinal stoma closure. We hypothesized that early feeding would reduce the time to recovery of bowel function and length of hospital stay without increasing postoperative complications.

## MATERIALS AND METHODS

A quasi-experimental study was conducted at the department of Surgery, Chittagong Medical College Hospital (CMCH) Chattogram, Bangladesh from January 2022 to December 2022. The protocol was approved by the Ethical Review Committee, Chittagong Medical College (Memo no. CMC/PG/2022/826; Date: 02/06/2022). Voluntary consent was taken from each patients' guardian to be enrolled for the forthcoming study.

Patients admitted in surgery ward of CMCH for elective intestinal stoma closure, with American Society of Anesthesiologists (ASA) physical status of grade I and II and normal distal loopogram study. Patients with uncontrolled co-morbid conditions, patients underwent simultaneous other abdominal procedure, developed post procedural other complications (Anesthetics and others) and patients with previous more than one bowel anastomosis were excluded.

The sample size was determined based on the primary outcome of Postoperative Ileus (POI). Using a two-sample proportion test, we assumed a POI rate of 10.25% in the early feeding group and 34.61% in the traditional feeding group, derived from prior observational study.[6] With a 95% confidence interval ($\alpha = 0.05$), 80% power ($\beta = 0.20$) and a two-sided test, the calculation (Via OpenEpi) yielded a required sample size of 43 participants per group. To account for potential attrition (e.g. loss to follow-up, protocol deviations) we increased the sample size by 2%, resulting in a final enrollment target of 44 participants per group (Total n = 88).

Consecutive patients admitted for elective intestinal stoma closure in the department of Surgery of CMCH were assessed for eligibility. By simple lottery method, patients were randomly allocated into either Group A (Traditional postoperative feeding) or Group B (Early postoperative feeding). Intestinal stoma closure was performed under general anesthesia at least 8 weeks after the first operation.

Patients in the traditional postoperative feeding group (Group A) were managed in the conventional way, that is, they were nothing by mouth and nasogastric decompression until the resolution of the ileus, then a clear liquid diet, progressing to a solid diet as tolerated.

In Early postoperative Feeding Group (Group B) nasogastric tube was not inserted and early feeding (Oral sips) was started after 12 hours to within 24 hours post-operatively, irrespective of return of bowel functions (Assessed by presence or absence of bowel sounds). The patients were given 30ml of clear liquid diet per hour in the 1$^{st}$ postoperative day. From 2$^{nd}$ postoperative day, liquid diet in the form of tea, fruit juice, milk was allowed to drink. The amount was 500ml 4 hourly. From 3$^{rd}$ postoperative day, semisolid and solid food were given according to the response of the patient. In patients who did not tolerate early oral feeds, nasogastric tube was inserted and the patient was managed subsequently as in the traditional feeding group.

Patients in both groups were monitored for vomiting, abdominal distention, length of ileus, time to start solid diet, length of hospitalization and any other complications. The primary outcome included time of the first passage of flatus and stools, The secondary outcome included tolerance to early feeding with symptoms of nausea, vomiting and abdominal distensions, anastomotic leakage, fever, cough, wound infection and length of hospital stay. Same discharge criteria were followed for the both group of patients. Patients in both groups were sent home when they passed flatus and stools and tolerate solid diet for at least 24 hours in the absence of other factors affecting discharge such as fever, wound infection, anastomotic leakage etc. After discharge, patients were followed up in surgical outpatient department on the seventh day, second week, and fourth week of discharge.

For presentation of quantitative data, mean ± SD and for qualitative data frequency and percentage were used. Mean difference between the groups were analyzed by Student t-test. Categorical variables were compared with Chi square test. p value was considered as statistically significant when it was <0.05. All statistical analyses were performed using SPSS statistics for Windows, version 26.0 (SPSS inc, Chicago, IL, USA).

## RESULTS

The study population predominantly underwent ileostomy closure (Group A: 75%, Group B: 86.4%) with no significant intergroup difference in surgical type or ASA physical status (Group A: 86.4% ASA I, Group B: 93.2% ASA I, $p > 0.05$). Mean age was comparable between groups (Group A: 38.2 ± 16.4 years, Group B: 35.4 ± 13.6 years, $p = 0.387$). While both groups showed male predominance (Group A: 65.9%, Group B: 86.4%) gender distribution differed significantly ($p = 0.024$) (Table I).


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**Table I** Preoperative characteristics of the patients

| Variables | Group A (n=44) | Group B (n=44) | p value |
|---|---|---|---|
| Age (Years) | 38.20 ± 16.42 | 35.41 ± 13.59 | 0.387† |
| **Gender** | | | |
| Male | 29 (65.9%) | 38 (86.4%) | 0.024* |
| Female | 15 (34.1%) | 6 (13.6%) | |
| **Name of operation** | | | |
| Ileostomy Closure | 33 (75.0%) | 38 (86.4%) | 0.177* |
| Colostomy Closure | 11 (25%) | 6 (13.6%) | |
| **ASA physical status** | | | |
| Grade I | 38 (86.4%) | 41 (93.2%) | 0.291* |
| Grade II | 6 (13.6%) | 3 (6.8%) | |

Group A: Traditional postoperative feeding group, Group B: Early postoperative feeding group, Data were expressed as n (%) or mean ±SD, *Chi-square test, †Independent sample t-test.

Post-operative complications were assessed across groups on post-operative days (POD) 1, 3, 5 and 7. On POD 1, vomiting (Group A: 84.1%, Group B: 81.8%) and abdominal distension (Group A: 45.5%, Group B: 27.3%) showed no statistically significant differences (p=0.077 and p=0.076, respectively). Fever, cough, wound infection and anastomotic leakage were absent in both groups. By POD 3, Group A exhibited significantly higher rates of fever (61.4% vs. 20.5%), cough (65.9% vs. 31.8%) and wound infection (25% vs. 9.1%) compared to Group B (All p<0.05). These differences became highly significant by POD 5 (Fever: 29.5% vs. 2.3%, cough: 34.1% vs. 2.3%, wound infection: 77.3% vs. 6.8%, all p<0.005). On POD 7, wound infection persisted in 27.3% of Group A but was absent in Group B (p<0.005). No anastomotic leakage occurred in either group. Complications in Group A remained elevated over time, while Group B showed marked reductions (Table II).

**Table II** Post-operative complications between two groups

| Complications | Group A n (%) | Group B n (%) | p value* |
|---|---|---|---|
| **Vomiting** | | | |
| 1st POD | 37 (84.1%) | 36 (81.8%) | 0.777 |
| 3rd POD | 8 (18.2%) | 4 (9.1%) | 0.214 |
| 5th POD | 1 (2.3%) | 1 (2.3%) | 1.000 |
| 7th POD | 1 (2.3%) | 0 (0%) | 0.315 |
| **Abdominal distension** | | | |
| 1st POD | 20 (45.5%) | 12 (27.3%) | 0.076 |
| 3rd POD | 14 (31.8%) | 8 (18.2%) | 0.140 |
| 5th POD | 1 (2.3%) | 1 (2.3%) | 1.000 |
| 7th POD | 1 (2.3%) | 0 (0%) | 0.315 |
| **Fever** | | | |
| 3rd POD | 27 (61.4%) | 9 (20.5%) | <0.001 |
| 5th POD | 13 (29.5%) | 1 (2.3%) | <0.001 |
| 7th POD | 1 (2.3%) | 0 (0%) | 0.315 |
| **Cough** | | | |
| 3rd POD | 29 (65.9%) | 14 (31.8%) | 0.001 |
| 5th POD | 15 (34.1%) | 1 (2.3%) | <0.001 |
| 7th POD | 1 (2.3%) | 0 (0%) | 0.315 |
| **Wound infection** | | | |
| 3rd POD | 11 (25.0%) | 4 (9.1%) | 0.047 |
| 5th POD | 34 (77.3%) | 3 (6.8%) | <0.001 |
| 7th POD | 12 (27.3%) | 0 (0%) | <0.001 |
| **Anastomotic leakage** | | | |
| 3rd POD | 1 (2.3%) | 0 (0%) | 0.315 |
| 5th POD | 2 (4.5%) | 0 (0%) | 0.153 |
| 7th POD | 1 (2.3%) | 0 (0%) | 0.315 |

Group A: Traditional postoperative feeding group, Group B: Early postoperative feeding group, Data were expressed as n (%), *Chi-square test.

Postoperative recovery outcomes are summarized in Table III. Significant differences were observed between the groups in time to bowel sound appearance, flatus passage, stool passage, and duration of hospital stay (All p < 0.001). However, no statistically significant difference was noted in anastomotic leakage rates (p = 0.153).

**Table III** Post-operative outcomes between two groups

| Outcome | Group A (n=44) | Group B (n=44) | p value |
|---|---|---|---|
| Appearance of bowel Sound (hr) | 53.27 ± 9.34 | 38.61 ± 14.16 | <0.001† |
| Passage of flatus (Hr) | 65.18 ± 10.42 | 47.68 ± 17.56 | <0.001† |
| Passage of stool (Hr) | 84.18 ± 10.87 | 62.68 ± 18.72 | <0.001† |
| Post operative hospital Stay (Day) | 7.95 ± 2.34 | 4.02 ± 1.13 | <0.001† |
| Anastomotic leakage | 2 (4.5%) | 0 (0%) | 0.153* |

Group A: Traditional postoperative feeding group, Group B: Early postoperative feeding group, Data were expressed as n (%) or mean ±SD, *Chi-square test, †Independent sample t-test.

## DISCUSSION

The findings of this quasi-experimental study demonstrated that early oral feeding following elective intestinal stoma closure was not only safe but also associated with significantly reduced postoperative complications compared to traditional delayed feeding. Our results challenge the conventional paradigm of withholding oral intake until bowel function resumes in our setting, offering compelling evidence to redefine postoperative care protocols in this patient population.

Postoperative complications diverged temporally between groups. While vomiting and abdominal distension on POD 1 were comparable (p > 0.05) Group A demonstrated escalating rates of fever, cough and wound infection by POD 3 (p < 0.05) peaking at POD 5 (e.g. wound infection: 77.3% vs. 6.8%, p < 0.005). By POD 7, wound infection resolved entirely in Group B but persisted in 27.3% of Group A (p < 0.005). These findings underscore a robust temporal trend: complications

in Group A remained elevated, while Group B exhibited marked and progressive reductions, highlighting the clinical advantage of early oral feeding in mitigating postoperative morbidity. The present study's results, comparing early and traditional postoperative feeding following elective stomal closure, agreed with those of earlier studies. [4-7,11-14]

In our study, anastomotic leakage occurred in 2 patients (4.5%) in the traditional feeding group, while no cases were observed in the early feeding group, though this difference did not reach statistical significance ($p = 0.153$). This trend aligns with findings by Ahmed et al. who reported lower leakage rates in early feeding cohorts (2.56% vs. 8.97%, $p = 0.083$) suggesting a potential protective effect of early enteral nutrition on anastomotic healing.[6] Notably, early feeding was associated with a significantly shorter postoperative hospital stay compared to traditional feeding (4.02 ±1.13 days vs. 7.95 ± 2.34 days, $p < 0.001$). This mirrors results from Ahmed et al. where early-fed patients were predominantly discharged by POD 3, contrasting with delayed discharges (5–7 days) in late-fed groups ($p < 0.001$).[6] Similarly, Mahla et al. and Pirzada et al. documented shorter hospitalization durations in early feeding protocols (3–4 days vs. prolonged stays, $p < 0.05$).[12,15] Collectively, these findings reinforce the clinical and logistical advantages of early oral feeding, emphasizing its role in accelerating recovery and optimizing healthcare resource utilization without compromising anastomotic safety.

In the present study, both groups were comparable in baseline characteristics, including preoperative age, ASA classification, and type of surgery. However, Group B had a significantly lower proportion of female patients. Notably, female gender was associated with reduced perioperative morbidity and mortality compared to males in prior analyses.[16] Despite these disparities—particularly the underrepresentation of females in Group B, a demographic linked to better outcomes—the significantly improved postoperative recovery in Group B highlights the robust clinical benefits of early oral feeding, transcending baseline demographic and surgical differences.

## LIMITATIONS

Several limitations of this study warrant consideration when interpreting its findings. First, the relatively small sample size ($n = 88$) though statistically powered to detect differences in primary outcomes, may limit the generalizability of results and reduce sensitivity to identify rare complications such as anastomotic leakage. Second, as a single-center trial, the findings may reflect institutional biases in surgical technique, postoperative care protocols, or patient demographics, potentially restricting broader applicability. Third, the short follow-up period precludes assessment of long- term outcomes such as stoma recurrence, chronic bowel dysfunction, or late-onset complications.

## CONCLUSION

In conclusion, this trial provides evidence that early oral feeding after elective intestinal stoma closure accelerates recovery, reduces infectious complications and is safe, with no increase in anastomotic leakage. It leads to early return of bowel functions, reduces post operative complications and shortens hospital stay. The consistency of our findings with prior literature strengthens the plausibility of the observed benefits.

## RECOMMENDATIONS

These results advocate for a paradigm shift in postoperative care, prioritizing early feeding to improve clinical outcomes and resource utilization. However, limitations of the present study underscore the need for larger, multicenter trials with extended follow-up durations to validate the safety and efficacy of early oral feeding across diverse clinical settings and to explore its impact on long-term recovery.

## DISCLOSURE

All the authors declared no competing interest.


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## REFERENCES


1. Qassim T, Saeed MF, Qassim A, Al-Rawi S, Al-Salmi S, Salman MT et al. Intestinal Stomas—Current Practice and Challenges: An Institutional Review. Euroasian journal of hepato-gastroenterology. 2023;13(2):115-119.
2. Ng ZQ, Levitt M, Platell C. The feasibility and safety of early ileostomy reversal: A systematic review and meta analysis. ANZ Journal of Surgery. 2020; 90(9):1580-1587.
3. Bisgaard T, Kehlet H. Early oral feeding after elective abdominal surgery—what are the issues? Nutrition. 2002;18(11-12):944-948.
4. Willcutts KF, Chung MC, Erenberg CL, Finn KL, Schirmer BD, Byham-Gray LD. Early oral feeding as compared with traditional timing of oral feeding after upper gastrointestinal surgery: A systematic review and meta-analysis. Annals of surgery. 2016;264(1):54-63.
5. Zhuang CL, Ye XZ, Zhang CJ, Dong QT, Chen BC, Yu Z. Early versus traditional postoperative oral feeding in patients undergoing elective colorectal surgery: A meta-analysis of randomized clinical trials. Digestive surgery. 2013;30(3):225-232.
6. Ahmad M, Qayyum A, Akhtar M, Shah R, Afridi S, Alam S et al. Safety of early versus delayed enteral feeding following ileostomy closure: Randomized controlled trial. Khyber Med Univ J. 2013;5(4):195-198.
7. Hussain S, Waqas SM, Jan Y. Comparison of frequency of anastomotic leak in early versus delayed oral feeding after elective colostomy closure. Khyber J Med Sci. 2015;8(3):351-356.
8. Roy A, Ghosal D, Jana A. Early enteral feeding following small gut anastomosis; An institution based prospective study. Journal of Surgical Arts. 2013;6(1):4-7.
9. Ljungqvist O, Scott M, Fearon KC. Enhanced recovery after surgery: a review. JAMA Surgery. 2017;152(3):292-298.
10. Kurmi S, Pandit N, Sah S, Subedi A, Adhikary S. Safety and feasibility of Enhanced Recovery After Surgery (ERAS) protocol in patients undergoing stoma closure. Indian Journal of Surgery. 2021n;83:703-707.
11. Wang H, Zhao J, Wang Y, Tian Y, Xing H, Tai H et al. Early enteral nutrition reduced postoperative ileus and improved the outcomes in patients with emergency intestinal surgery: Results from a propensity score analysis. Int J Clin Exp Med. 2017;10(4):7040-7048.
12. Mahla V, Khan S, Ahmad R, Jenaw RK. Early feeding after loop ileostomy reversal: A prospective study. Formosan Journal of Surgery. 2016;49(5):178-82.
13. Marwah S, Singla S, Tinna P. Role of gum chewing on the duration of postoperative ileus following ileostomy closure done for typhoid ileal perforation: A prospective randomized trial. Saudi Journal of Gastroenterology. 2012;18(2):111-117.
14. Nelson T, Pranavi AR, Sureshkumar S, Sreenath GS, Kate V. Early versus conventional stoma closure following bowel surgery: A randomized controlled trial. Saudi Journal of Gastroenterology. 2018;24(1):52-58.
15. Pirzada MT, Naseer F, Haider R, Haider J, Ahmed MJ, Alam SN et al. Enhanced Recovery After Surgery (ERAS) protocol in stoma reversals. JPMA. The Journal of the Pakistan Medical Association. 2017;67(11):1674-1678.
16. Al-Taki M, Sukkarieh HG, Hoballah JJ, Jamali SF, Habbal M, Masrouha KZ et al. Effect of gender on postoperative morbidity and mortality outcomes: A retrospective cohort study. The American Surgeon. 2018;84(3):377-386.