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Comparison between Early and Delayed Oral Feeding in the Postoperative Period for the Patients Underwent Spinal Anaesthesia

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Abstract

The timing of postoperative oral feeding after spinal anesthesia remains a topic of debate. A prospective, comparative study was conducted in the Department of Anaesthesiology of Community Based Medical College, Bangladesh (CBMC,B) Hospital, Mymensingh, Bangladesh, between January and June of 2025, to compare the effects of early versus delayed oral feeding in patients who underwent spinal anaesthesia. A total of 80 patients were purposively selected and randomly divided into two equal groups: group A (early feeding, i.e., within 6 hours) and group B (delayed feeding, i.e., after 12 hours). The mean age of the patients in group A and group B were 42.5±11.3 years and 44.2±10.8 years respectively. In group A, male and female were 55% and 45% respectively, while in group B male and female were 60% and 40% respectively. In group A, 70% and 30% patients belonged to the ASA-I and ASA-II category respectively, while in group B, 65% and 35% patients respectively. The mean duration of surgery was observed in group A and group B were 85.6±18.2 minutes and 82.4±20.1 minutes respectively. No differences were found in age, gender, ASA category and duration of surgery between two groups ($p>0.05$). Early return of bowel sounds (8.2±1.5 hours vs. 12.6±2.1 hours) and passage of flatus (14.3±3.2 hours vs. 19.8±4.5 hours) were reported in group A compared to group B ($p<0.001$). However, no differences were found in postoperative nausea and vomiting (PONV) (15% vs. 20%) and severe PONV (5% vs. 7.5%) between two groups ($p>0.05$). Shorter duration of hospital stay (2.3±0.7 days vs. 3.5±1.1 days) and higher patient satisfaction (8.6±1.2 vs. 6.9±1.5) were found in group A compared to group B ($p<0.001$). No difference was found in postoperative complications (e.g., wound infection 2.5% vs. 5.0%) between two groups ($p>0.05$). Our findings support the implementation of early feeding protocols in clinical practice in patients underwent spinal anaesthesia, particularly in resource-limited settings, where enhanced recovery can optimize outcomes.

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Introduction

The optimal timing for postoperative oral feeding following spinal anaesthesia is a continuous debatable topic in clinical practice.[1] While traditional protocols advocated delayed feeding to prevent nausea, vomiting, and gastrointestinal complications,[2] contemporary evidence indicated that early feeding may actually accelerate recovery of the patients without elevating risks.[3] Historical postoperative management typically mandated prolonged nil-by-mouth periods, driven by concerns regarding aspiration risk and delayed gut motility. However, research demonstrated that early nutritional intake stimulates intestinal activity, decreases catabolic stress responses, and facilitates overall recovery.[4-6] These findings have led to the incorporation of early feeding in enhanced recovery after surgery (ERAS) protocols for various surgical procedures.[7]

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Despite this paradigm shift, implementation remains inconsistent globally, with resource-constrained settings particularly slow to adopt these updated practices.[8] Spinal anaesthesia offers distinct advantages for gastrointestinal function compared to general anaesthesia, as it avoids systemic depression of gut motility.[5] However, postoperative ileus persists as a clinical challenge, attributable to multiple factors including sympathetic hyperactivity, opioid analgesia, and surgical stress responses.[9] Early feeding protocols may counteract these effects by activating the vagus nerve and reducing bowel wall oedema.[4] Recent evidence confirmed that early nutritional initiation after spinal anaesthesia significantly hastens the return of bowel function and reduces hospitalization duration, without compromising patient safety.[6,10,11]

However, we lack reports, guideline or protocol on such debatable topic in our country. In the context of low-resource settings like Bangladesh, we need evidence base through gathering of extensive data from community based hospitals, where current feeding practices often reflect traditional rather than evidence-based approaches. The study aimed to examine outcomes between patients receiving early (within 6 hours) versus delayed (after 12 hours) postoperative feeding following various surgical procedures under spinal anaesthesia. The study findings are expected to help optimize recovery protocols in similar healthcare environment, where resources are limited but quality improvement remains a priority.

Methods

A prospective, comparative study was conducted in the Department of Anaesthesiology, Community Based Medical College, Bangladesh (CBMC,B) Hospital, Mymensingh, Bangladesh, between January and June of 2025. A total of 80 adult patients who underwent spinal anaesthesia for elective surgeries were enrolled in this study. The participants were randomly divided into two equal groups (having 40 patients in each group) – group A (early feeding, i.e., within 6 hours) and group B (delayed feeding, i.e., after 12 hours) in the postoperative period.

Inclusion criteria: Patients aged between 18 and 65 years with American Society of Anesthesiologists (ASA) physical status I-II were included. Eligible surgeries included lower abdominal, urological, and orthopaedic procedures with an expected duration of ≤2 hours.

Exclusion criteria: Patients with pre-existing gastrointestinal disorders, diabetes mellitus, or neurological conditions affecting gut motility were excluded. Additional exclusion criteria included emergency surgeries, conversion to general anaesthesia, intraoperative complications, and refusal to participate in the study.

Group A received clear fluids within 6 hours postoperatively, advancing to solid food as tolerated. Group B remained nil-per-os for 12 hours before initiating any feeding. Both groups received standardized spinal anaesthesia and postoperative analgesia. Outcomes, including appearance of bowel sounds, passage of flatus, postoperative nausea and vomiting (PONV) episodes, duration of hospital stay, complications, and patient satisfaction score (based on a 10-point Likert scale) were recorded in the patient data sheet. After collection, data was scrutinized, compiled and coded. Then data was analyzed using IBM SPSS Statistics for Windows, version 23 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean± SD (standard deviation), while categorical variables were expressed as frequency and percentage.

Comparisons were done using unpaired Student's t-test, Mann-Whitney U test, and Chi-square test as applicable. A p-value <0.05 was considered statistically significant. Ethical clearance for this study was received from the Ethical Review Committee of Community Based Medical College, Bangladesh (CBMC,B), Mymensingh, Bangladesh.

Results

The mean age of the patients in group A and group B were 42.5± 11.3 years and 44.2± 10.8 years respectively. In group A, male and female were 55% and 45% respectively, while in group B male and female were 60% and 40% respectively. In group A, 70% and 30% patients belonged to the ASA-I and ASA-II category respectively, while in group B, 65% and 35% patients respectively. The mean duration of surgery was observed in group A and group B were 85.6± 18.2 minutes and 82.4± 20.1 minutes respectively. No differences were found in age, gender, ASA category and duration of surgery between two groups (p>0.05) (Table-I). Early return of bowel sounds (8.2±1.5 hours vs. 12.6±2.1 hours) and passage of flatus (14.3±3.2 hours vs. 19.8±4.5 hours) were reported in group A compared to group B (p<0.001). However, no differences were found in postoperative nausea and vomiting (PONV) (15% vs. 20%) and severe PONV (5% vs. 7.5%) between two groups (p>0.05) (Table-II). Shorter duration of hospital stay (2.3±0.7 days vs. 3.5±1.1 days) and higher patient satisfaction (8.6±1.2 vs. 6.9±1.5) were found in group A compared to group B (p<0.001). No difference was found in postoperative complications (e.g., wound infection 2.5% vs. 5.0%) between two groups (p>0.05) (Table-III).

Table-I: Baseline characteristics of study participants (N=80)

Characteristic	Feeding		p-value
	Group A (n=40)	Group B (n=40)	
Age (in years)* Mean± SD	42.5± 11.3	44.2± 10.8	>0.05^{NS}
Male gender** Frequency (Percentage)	22 (55%)	24 (60%)	>0.05^{NS}
ASA-I** Frequency (Percentage)	28 (70%)	26 (65%)	>0.05^{NS}
Duration surgery (in minutes)* Mean± SD	85.6± 18.2	82.4± 20.1	>0.05^{NS}

*=Unpaired Student's t-test, **=Chi-square test; NS=Not significant.

Table-II: Gastrointestinal recovery parameters

Variables	Group A (n=40)	Group B (n=40)	p-value
Time to appearance of bowel sounds (in hours)* Mean± SD	8.2± 1.5	12.6± 2.1	<0.001^{S}
Time to passage of flatus (in hours)* Mean± SD	14.3± 3.2	19.8± 4.5	<0.001^{S}
Postoperative nausea and vomiting (PONV)** Frequency (Percentage)	6 (15%)	8 (20%)	>0.05^{NS}
Severe PONV (requiring antiemetics)** Frequency (Percentage)	2 (5%)	3 (7.5%)	>0.05^{NS}

*=Unpaired Student's t-test, **=Chi-square test; S=Significant, NS=Not significant.

Table-III: Outcome related parameters

Variables	Group A (n=40)	Group B (n=40)	p-value
Duration of hospital stay (in days)* Mean± SD	2.3± 0.7	3.5± 1.1	<0.001^{S}
Patient satisfaction scores (10-point Likert scale)** Mean± SD	8.6± 1.2	6.9± 1.5	<0.001^{S}
Aspiration*** Frequency (Percentage)	-	-	-
Wound infection*** Frequency (Percentage)	1 (2.5%)	2 (5%)	>0.05^{NS}

*=Unpaired Student's t-test, **=Mann-Whitney U test, ***=Chi-square test; S=Significant, NS=Not significant.

Discussion

Ensuring perioperative patient safety remains a major challenge in low-resource countries like Bangladesh.[12] An optimum and safe care include implementating less invasive surgery, safe anaesthesia, preoperative testing, intraoperative care, and postanaesthesia recovery until discharge from the hospital.[7,13] The findings of the present study demonstrated that early postoperative oral feeding within 6 hours following spinal anaesthesia is both safe and beneficial compared to traditional delayed feeding protocols. Our results are in congruence with contemporary evidence challenging conventional postoperative delayed feeding practice.[3,6,10,11] A significantly faster return of bowel function in the early feeding group supports the physiological rationale that enteral nutrition stimulates gastrointestinal motility through neural and hormonal mechanisms.[9.14] The mean difference of 4.4 hours in bowel sound reappearance and 5.5 hours in first flatus between groups is clinically meaningful, as these parameters are established markers of postoperative ileus resolution.[14] These findings corroborate previous studies showing that early feeding after spinal anaesthesia accelerates gastrointestinal recovery.[3,6,10,11] Our study found no significant difference in postoperative nausea and vomiting (PONV) incidence between two groups. This observation is particularly important as nausea and vomiting remain primary reasons for delayed feeding implementation.[5,15] The comparable rate of PONV (15% vs. 20%; p>0.05) suggested that early feeding hardly increases such common postoperative complications, which is consistent with findings from recent evidence.[6,10,11] This may be attributed to the limited gastrointestinal effects of spinal anaesthesia compared to general anaesthesia. In contrast, another study showed significant nausea in early feeding.[16] The significantly shorter hospital stays in the early feeding group (2.3 days vs. 3.5 days; p<0.001) has important implications for healthcare systems, particularly in resource-constrained settings. The reduction in hospital stay may be due to the combined effects of faster gastrointestinal recovery and earlier mobilization;[10,11,13] it, therefore, improved patient satisfaction as well.[17,18] Patient satisfaction scores were significantly higher in the early feeding group (8.6 vs. 6.9; p<0.001) reinforcing the psychological benefits of minimizing preoperative and postoperative fasting periods, which in congruence with the previous studies.[19] Reduced hospitalization could substantially lower treatment costs in developing countries.[18] Our finding is particularly relevant in the context of patient-centered care and enhanced recovery protocols.[5,18] The absence of major complications in both groups further supports the safety of early feeding after spinal anaesthesia.[3,6]

Several limitations should be acknowledged. Firstly, the single-center design may limit generalizability, though this was mitigated by strict inclusion/exclusion criteria. Secondly, the study focused on relatively healthy patients (ASA I-II), and results may not apply to higher-risk populations. Thirdly, although our relatively small sample size is adequate for primary outcomes, it is still insufficient to detect rare complications. Finally, exclusion of high-risk patients (ASA III-IV) and inclusion of only elective surgeries also limit generalizability. Future studies with larger samples and multicenter studies with larger samples could address these limitations.

Conclusion

This study demonstrates that early postoperative feeding within 6 hours after spinal anesthesia is safe

and beneficial, promoting faster gastrointestinal recovery, shorter hospital stays, and higher patient satisfaction without any complications. These findings support adopting early feeding protocols in similar clinical settings, particularly in resource-limited environment, where enhanced recovery can significantly impact healthcare delivery and patient outcomes. Based on our findings, we recommend implementing early oral feeding within 6 hours postoperatively for spinal anaesthesia patients in clinical practice. Healthcare institutions should modify traditional fasting protocols and train staff accordingly, while further research should explore optimal nutritional strategies for high-risk surgical populations.

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