EARLY DISCONTINUATION OF 'NIL BY MOUTH' REDUCES THE INCIDENCE OF POST-OPERATIVE NAUSEA AND VOMITING.

Dr. Merary M
Ex-PG student, Department of Anesthesiology, Bharati Vidyapeeth DTU Medical College, Pune.

Dr. Shubhada Aphale
Professor, Department of Anesthesiology, Bharati Vidyapeeth DTU Medical College, Pune.

Dr. Reema Bodhe
Corresponding author, Ex-Assistant Professor, Department of Anesthesiology, Bharati Vidyapeeth DTU Medical College, Pune.

ABSTRACT

Introduction - The mandatory 'Nil by Mouth' (NBM) practice perioperatively aims to reduce the gastric volume and acidity. This reduces the risk of pulmonary aspiration and thus provides safe anaesthesia. Aspiration of ≥25ml or pH≤ 2.5 of the gastric contents, might cause serious consequences. Our study was done to assess the effect of early discontinuation of post-operative NBM period on Post Operative Nausea Vomiting (PONV). This is in accordance with Enhanced Recovery After Surgery (ERAS) concept, fast tracking discharge from Post Anaesthesia Care Unit (PACU).

Methodology-The study was conducted at a tertiary care centre. Patients were divided in 2 groups : 60 participants in Standard Group (S-Group) where conventional post-operative NBM period was observed and 60 participants in Early post-operative Discontinuation Group (D-Group) where post-operative NBM discontinuation was done within two hours of shifting to PACU. Patients fulfilling the inclusion criteria were selected randomly for the study and underwent a thorough pre-anaesthesia evaluation. The standard general anaesthesia protocol was followed along with Opioid (Inj. Fentanyl 2mcg/kg IV), Prophylactic antiemetic medication (Inj.Dexamethasone 0.1mg/kg IV after induction was given and Inj. Ondansetron 4mg IV was administered before extubation). Sips of water and subsequent clear liquids were introduced to D-Group patients within two hours of extubation and semisolids or a soft diet was introduced later. The scale and score were used to rate the incidence of PONV in both groups.

Results- Incidence of PONV was 71.7% and absent among 28.3% in S-Group. While in D-Group, incidence of PONV was 38.3% and absent among 61.7%. There was significant difference between two groups regarding incidence of PONV(p-value- 0.0001). Alongwith the incidence; the severity of PONV was significant in S-Group than D-Group. We will remove bracketed participants, only percentage will look better.

Conclusion- Early discontinuation of post-operative NBM reduced incidence and severity of PONV.

Keywords- PONV, NBM, post-operative, early discontinuation.

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INTRODUCTION

Keeping patients 'Nil By Mouth' (NBM) perioperatively is a common clinical practice.[1] Pre-operative 'NBM' is crucial in reducing the risk of pulmonary aspiration of gastric contents as General Anaesthesia(GA) causes loss of normal laryngopharyngeal reflexes. [2]Aspiration of ≥25 ml of stomach contents might cause serious morbidity and even mortality.[2- 3]. The 2nd most common contributor for delay in discharge after Pain, is PONV. PONV occurs in 30% of hospitalized patients and incidence increases in high-risk patients. ERAS criteria emphasize the importance of discontinuing NBM as early as possible. [4] Nowadays, early enteral or oral nutrition is encouraged even for colorectal procedures. Indicators of resuming bowel function include passing of flatus or the reappearance of bowel sounds[5]Patients undergoing gastrointestinal (GI) surgery have been typically kept NBM until the postoperative ileus clears. [6]The conventional practice of keeping patients NBM for a period of 6 to 8 hours following surgery still persists and is given as general instruction regardless of whether the surgery requires it. As medical professionals, we must question our practices and challenge ourselves to consider contemporary, evidence-based practice.

The Aim of current study was to compare the incidence and severity of PONV between two groups: Standard Group (S-Group) that adhered to the conventional NBM guidelines of 6 to 8 hours after surgery and Early Discontinuation Group (D-Group) where early discontinuation of NBM was done within 2 hours postoperatively.

MATERIAL AND METHODS

This randomised controlled interventional study was conducted at a tertiary care centre after getting approval from the Institutional Ethics Committee. The sample size taken was 120 patients (60 participants in S-Group where conventional practice of 6-8 hours NBM postoperatively was followed and 60 participants in D-Group where NBM was discontinued within 2 hours postoperatively).Patients coming to the Pre-anaesthesia Clinic(PAC),undergoing surgery under general anaesthesia were selected based on inclusion criteria.

Inclusion criteria were patients under ASA I and II, Age group of 18-65 years, duration of surgery- 2 to 4 hours, Patients undergoing general surgery, orthopaedics, spine, plastic, and vascular surgery.

Exclusion criteria included Previous history of excessive PONV, Chronic smoker,Patients undergoing Ear, Neuro ,GI surgery ,Laparotomy.

The study was explained to the patients in their local language. Written informed consent for participating in study was taken from the patients.

A computer-generated table was used to assign participants to one of the two groups. The standard general anaesthesia protocol was followed. Prophylactic antiemetic medication inj.Dexamethasone 0.1mg/kg IV, post induction and inj. Ondansetron 4mg IV before extubation was administered. Fentanyl 2 mcg / kg, IV, in divided doses was administered, intraoperatively to all patients as a part of standard GA procedure.

Sips of water and subsequent clear liquids were introduced to D-Group patients within two hours of extubation and semisolids or a soft diet was introduced after that. S-Group patients followed conventional instruction of 6-8 hours post-operative NBM. During the post-operative period, analgesics such as Fentanyl and Tramadol that are known to produce PONV were avoided. The scale and score listed below were used to rate PONV in both groups.

PONV Score using Verbal Analog Scale

TABLE:I

CRITERIA	PONV SCORE
No nausea and vomiting	0 (VAS0)
Mild nausea	1 (VAS1-3)
Moderate nausea	2 (VAS4-6)
Severe nausea	3 (VAS7-9)
Worst nausea	4 (VAS10)
Retching	5
Vomiting 1 episode	6
Vomiting >1 episode	7

RESULTS

Total 120 participants were included in the study. 60 in S-Group and 60 in D-Group.

The distribution of 2 groups related to age, gender, co-morbidities, BMI and duration of surgery did not show any statistical significance and p value was <0.5 for these factors.

TABLE 2: Incidence of PONV

PONV	Standard Group Percentage (Number)	Early Discontinuation Group Percentage (Number)	P value
Present	71.7% (43)	38.3% (23)	0.0001
Absent	28.3% (17)	61.7% (37)	
Total	100% (60)	100% (60)	

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Incidence of PONV was significantly less in early discontinuation of NBM group as compared to Standard Group. The Chi-square value was 13.468, Degrees of Freedom(Df)=1, Pvalue <0.05, statistically significant.

TABLE 3: PONV Score in two groups

PONV SCORE	Standard group Percentage (Number)	Early discontinuation group Percentage (Number)	
1	3.4% (2)	10% (6)	P VALUE
2	10% (6)	15% (9)	
3	16% (10)	8.3% (5)	
4	10% (6)	1.6% (1)	
5	13% (8)	1.6%(1)	0.001
6	10% (6)	0% (0)	
7	8.3% (5)	1.6% (1)	
Total	71.7% (43)	38.3% (23)	

Among the patients who had PONV, the severity of PONV (depicted by score) was much less in early discontinuation group and this observed finding is statistically significant using Chi square test.

From our study, we can infer that the incidence and severity of PONV was higher in S-Group compared to D-Group.

Data analysis was done after putting the data in Microsoft Excel 2019 spreadsheet and analyzed with IBM SPSS 21.0.

DISCUSSION

The purpose of this study was to assess if early discontinuation of postoperative NBM period reduced PONV. PONV is a bothersome side effect of anaesthesia and a major cause of delay in discharge after ambulatory anaesthesia. After surgery, PONV is unpleasant and can significantly delay returning to normal activities. PONV is usually non fatal but can cause dehydration/ electrolyte imbalance, suture tension, venous hypertension/bleeding and aspiration of gastric contents[7].Early but on demand oral feeding can be started even before return of bowel sounds in otherwise healthy individuals. Delayed gastric emptying can occur in certain individuals hence fluids can be started immediately but solids should be started with caution[8].Considerable inter-individual gastric emptying variability is known due to multiple factors like Pain, Diabetes Mellitus, Obstruction and Reflux diseases[7]. Potential advantage of early feeding is that, it decreases length of paralytic ileus and duration of hospital stay[8] Starting oral fluids and food after surgery plays an important role in postoperative recovery process[8] and patient satisfaction. Commonly oral feeds should not be started after colorectal surgeries as it may result in anastomotic leak. But data suggests that oral intake reverses mucosal atrophy and increases the anastomotic collagen deposition and strength[8.]We also strongly recommend that NBM orders should specify exact discontinuation time. So in agreement with our present study, we conclude that early discontinuation of NBM postoperatively should be encouraged. This certainly has shown to reduce severity and incidence of PONV. Major limiting factor in our study was that it did not include abdominal surgeries. Hence further studies are required to assess moderate to high-risk cases, as ERAS mainly considers a group of ASAI, II patients. We advocate change in conventional approach of 6 hrs post operative NBM in surgeries which really do not require such long duration of postoperative NBM hours. Further after better evidence and recommendations , we can extend further studies which include abdominal and major surgeries with variable duration.

CONCLUSION

From our study, we can successfully conclude that early discontinuation of post operative NBM period plays a vital role in reducing PONV. ERAS criteria emphasizes on early enteral feeding, early ambulation and early discharge. Our study is unique because we focused on early feeding in non-abdominal surgical cases. Further studies are necessary to dwell deeper into this concept and to access the patient satisfaction. After which early discontinuation of post-operative NBM has the potential to become the new standard guideline for post-operative NBM for abdominal and colorectal surgeries as well.

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REFERENCES

1. BradyMC, KinnS, StuartP. Preoperative fasting for adults to preven tperioperative complications. Cochrane Database SystRev2003;4:CD004423.
2. American Society of Anaesthesiologists Task Force on Preoperative Fasting. Practice guidelines for preoperative fasting and the use of pharmacological agents to reduce the risk of pulmonary aspiration :application to healthy patients undergoing elective procedures. Anesthesiology1999;90:896-905.
3. Smith HS, Smith EJ, Smith BR. Postoperative nausea and vomiting. AnnPalliatMed. 2012 Jul 1;1(2):94-102.
4. Wainwright TW, Gill M, McDonald DA, Middleton RG, Reed M, Sahota O,Yates P, Ljungqvist O. Consensus statement for perioperative care in total hip replacement and total knee replacement surgery: Enhanced Recovery After Surgery (ERAS®)Society recommendations.Actaorthopaedica.2020Jan2;91(1):3-19.
5. CastoCJ, KrammerJ, DrakeJ. Postoperative feeding: a clinical review. Obstetrical & Gynecological Survey. 2000Sep 1;55(9):571-3.
6. Kehlet H, Wilmore D W. Fast-track surgery. British Journal of Surgery 2005;92: 3–4
7. Jong et al Propensity Analysis- Effect of Body Mass Index on Postoperative Nausea and Vomiting: 2020 Jun; 9(6): 1612.
8. Stewart BT, Woods RJ, Collopy BT, et al. Early feeding after elective open colorectal resections: a prospective and randomized trial. AustNZJ Surg.1998; 68:125–8.
9. Huligeri HS. Abstract No.: ABS1042: A Randomized Controlled Trial To Compare The Occurrence Of Postoperative Nausea And Vomiting In EarlyVersus Conventional Feeding In Children Undergoing Day Care Surgery Under General Anaesthesia. Indian Journal of Anaesthesia.2022Mar;66 (Suppl1):S21.
10. Diks J, van Hoorn DE, Nijveldt RJ, Boelens PG, Hofman Z, Bouritius H, et al.Preoperative fasting: an out dated concept? JPEN 2005;29:298