

A PROSPECTIVE STUDY OF THE EFFECT OF EARLY ORAL FEEDING AFTER GASTROINTESTINAL ANASTOMOSESPurujit Choudhury¹**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: Thirty five patients who were randomly allocated to early feeding beginning with liquid diet 7 hour post-operatively then controlled liquid, liquid diet then semisolid and solid diet. Ryle's tube was removed immediately after operation. Post-operative ileus, anastomotic leak, wound dehiscence, mesenteric embolus, wound infection are not related to early feeding. Early feeding in G.I anastomosis seems to be safe, well tolerated and was not associated with increased post-operative GI complications. Though the number of patients is less in this study without comparative post-operative conventional feeding yet no untoward post-operative complication encountered and patients were discharged within 5-10 days post-operatively.

KEYWORDS: GJA; Anastomoses, Early feeding

INTRODUCTION: A period of starvation ("Nil by Mouth") is common practice for last 50 years after gastrointestinal surgery during which an intestinal anastomosis has been formed. There is no evidence that bowel rest and a period of starvation are beneficial for healing of wounds and anastomotic integrity¹. Indeed, the evidence is that luminal nutrition may enhance wound healing and increase anastomotic strength, particularly in malnourished patients. The rationale of nil by mouth is to prevent post-operative nausea and vomiting and to protect the anastomosis, allowing it time to heal before being stressed by food. Post-operative dysmotility predominantly affects the stomach and colon, with the small bowel recovering normal function 4-8 hours after laparotomy.

Feeding within 24 hours after laparotomy is tolerated and the feed absorbed. Gastrointestinal surgery is often undertaken in patients who are malnourished, which in severe cases is known to increase morbidity. In animals, starvation reduces the collagen content in anastomotic scar tissue and diminishes the quality of healing. Whereas feeding reverses mucosal atrophy induced by starvation and increases anastomotic collagen deposition and strength.^{1,2} Study reveals enteral nutrition is associated with an improvement in wound healing. Finally early enteral feeding may reduce septic morbidity after abdominal trauma and pancreatitis. The routine use of a nasogastric tube after elective gastrointestinal and colorectal surgery is no longer mandatory.

Traditionally, after abdominal surgery, the passage of flatus or bowel sounds is the clinical evidence for starting an oral diet. The resolution of post-operative ileus defined by the passage of flatus usually occurred within 5 days.³ Studies with a small group of patients were undertaken to evaluate whether different abdominal surgeries could benefit from early feeding. Early feeding improves the outcome of patients with trauma burns, although few studies have examined its use after gastrointestinal anastomosis. Theoretically, early enteral feeding improves tissue healing and reduces septic complications after gastrointestinal surgery. There is no benefit in keeping patients "nil by mouth" after gastrointestinal surgery. Septic complications and length of hospital stay were reduced in those patients who received early enteral feeding. In patients who received early enteral

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feeding there were no significant reductions in incidence of anastomotic dehiscence, wound infection, pneumonia, intra-abdominal abscess and mortality (Bisgaard. T et al)^{4,5}.

MATERIALS AND METHODS: A prospective clinical study on thirty five patients from March, 2011 till May, 2012 was undertaken subjected for early post-operative feeding after GI anastomosis (only elective cases). Male were 11 and female were 24 in numbers. Age between 26 to 67 years. Only elective patients were studied. Out of 35 patients 22 are of GJA (Ante + Retrocolic); 5 cases are of ileo-transverse anastomosis; 3 cases are of ileo-ileal end to side anastomosis, 5 cases are of primary end to end left colon anastomosis. Out of these cases 1 case was malignant at the junction of sigmoid and descending colon. The cases associated with medical problem, abdominal Koch's, Crohn's and Ulcerative colitis were excluded. All cases were put on Ryle's tube got removed on the same day just after operation. After 7 hours of arrival in the ward they were allowed liquid then controlled liquid diet followed by semisolid and normal diet in a very estimated and calculated way. If they tolerated 1 liter within 24 hours, they were started on free liquid on the second day and regular diet on the third day. Length of hospital stay didn't evaluate in this study.

The length of time until bowel movement was first passed was also noted. Patients were not given any laxative after surgery. Post-operative ileus doesn't have any relation with early or late feeding and it is not affected by early feeding. Clinical assessment and bowel sounds were auscultated regularly. Early or late conventional feeding doesn't have impact on post-operative complication. The main outcome to evaluate post-operative complications that included wound infection, leakage of anastomosis, obstruction, mesenteric emboli, upper GI bleeding, wound dehiscence, prolonged ileus, GI upset, discomfort, nausea, vomiting, distension and mortality. No cases were put on drainage tube. Early mobilization from 6-8 hours after operation was encouraged. No comparative study was associated with the present work.

RESULTS AND OBSERVATIONS: Usually Post-operative ileus resolved (active bowel sounds heard) on the day of surgery or 1st post-operative day, flatus by the first or second post-operative day and bowel movement by the second or third post-operative day. It is clear that though no much difference could be elicited in respect of post-operative ileus after early feeding bowel sounds could be heard from 2nd post-operative day from lighter to louder and flatus was also passed on the same day. Immediately after operation Ryle's tube was removed and no complain of any vomiting, nausea, dyspepsia or features of sepsis reported. No drainage tube was applied. Clinically all the patients showed no evidence of stomal (anastomotic) disruption and wound infection. Patients could well be mobilized from the 2nd post-operative days. All the patients could discharge from 5-10 days post-operatively. Clips were removed on 8-10th post-operative day.

DISCUSSION: The historic myth of mandatory routine nasogastric tube decompression after abdominal surgery already was refuted. In a recent survey of the members of the American Society of Colon and Rectal Surgeons, only 30% still routinely use nasogastric tubes.⁷ Small intestinal motility followed by gastric motility has been shown to return earlier than colonic motility. The key findings in this study was that post-operative complications did not differ significantly after early oral feeding with late starting of feeding after intestinal anastomosis. Oral feeding was tolerated with low morbidity following small or large bowel resection and not associated with the occurrence of

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anastomotic dehiscence. However, patients undergoing elective colorectal resection can be managed without post-operative nasogastric catheter, starting oral feeding on the first post-operative day.⁸ Interestingly, in older patients undergoing elective open colon resection, early feeding results in a short hospital stay and low post-operative morbidity.^{8,9} Reviewing the literature supports safety of early feeding after surgery. Post-operative ileus does not have much effect on early feeding.

Livingston and Passaro define ileus as the functional inhibition of propulsive bowel activity, irrespective of the pathologic mechanism. The exact etiology of the ileus is not known but it is believed to be more common after laparotomy and procedures that enter the peritoneal cavity. Many factors are said to be participating to it, including intra-operative, bowel manipulation, anesthetic agents, peri-operative narcotics and post-operative sympathetic hyperactivity. Post-operative ileus can result in accumulation of gas and secretion leading to distension, emesis, pain and longer hospital stay.^{9,10} Currently available therapies are supportive and include i.v. hydration and nasogastric suctioning. After surgery, return of bowel function and motility usually occurs within 6-12 hours in the small bowel, 12-24 hours in the stomach and 48-72 hours in the colon. Physiologic studies have found that myoelectric and motor activity in the stomach is not affected after abdominal surgery.¹¹

Schilder et al showed bowel activity before flatus was passed, which illustrates that patients tolerate fluid secretions of 1-2 liter from stomach and pancreas immediately after surgery. Studies also have shown tolerance to clear liquids on post-operative day 1 after GI surgeries. Seenu and Goel showed that early oral feeding after elective colorectal surgery is safe and can be tolerated by most patients.¹² Similarly Difronzo et al demonstrated a high tolerability (86.5%) to early post-operative oral feeding after elective open colon resection. Suehiro et al showed that early oral feeding after gastrectomy is safe and the incidence of complications including anastomosis leak is not related to early feeding or late conventional feeding. It was found that by offering liquid 6 hour after surgery, increased incidence of ileus, rather than following a rigid protocol. That finding is supported by Resnick et al.

The post-operative patients are in hypercatabolic state results immunodepressed. Hence early feed is justified (randomized study depicts)¹³ recently, changes in intestinal permeability have been shown in patients undergoing gastrointestinal surgery, increased permeability being associated with sepsis and systemic inflammation. Bacterial translocation has also been shown in patients undergoing laparotomy and a higher proportion of patients with bacterial translocation developed sepsis than those without. There is, however, no evidence in humans that increased intestinal permeability correlates with bacterial translocation or that early postoperative enteral nutrition influences intestinal permeability or reduces the incidence of bacterial translocation. The appealing hypothesis that early postoperative luminal nutrition might have a beneficial effect on the function of the intestinal barrier in respect of permeability, bacterial translocation, and the subsequent development of septic complications has no supporting evidence at present. Indeed, one study has found that supplementing "normal" oral diet in hospital wards with as little as 1250 kJ (300 kcal) and 12 g of protein per day resulted in a reduction of postoperative complications in patients undergoing gastrointestinal surgery.¹⁴

Therefore, there may be a threshold of nutritional intake which, if not achieved, may predispose some patients to postoperative complications. Recently, changes in intestinal permeability have been shown in patients undergoing gastrointestinal surgery, increased permeability being associated with sepsis and systemic inflammation. Ileus is defined as hypoactive

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bowel sounds, abdominal distension and no passage of flatus or bowel movement with or without nausea and vomiting after the first post-operative day.¹⁵

The study concluded by Prof. Yamin et al states that early feeding starts intestinal dysmotility to recover early, less hospital stay, early mobilization, good psychosomatic outcome, and increase strength to anastomotic stoma.^{15,16} Anderson and colleagues conducted a systemic 2006 review of 13 randomized trials totaling 1137 patients undergoing gastrointestinal surgery. There was no significance difference between restricted and early post-operative feed. There was no advantage of dietary restriction.¹⁶

In 2007, Charoenkwan and colleagues performed another systematic review of post-operative diets in patients undergoing abdominal gynecologic surgery. They found that early feeding was safe, but similar to other report associated with increased nausea. There appeared to be no significant shortening of time to first passage of flatus. They concluded that the decision to initiate early oral feeding should be made on an individual basis, taking into consideration cost-effectiveness, patient's satisfaction and other physiologic changes.

In a 2006 study of "fast-track" rehabilitation programs in colonic surgery^{15,17} the authors used a post-operative diet consisting tea and soup, which gave the patients optimistic signals that they were in good health and would leave the hospital shortly. The authors concluded that early feeding, then also may have positive psychological effects that can aid recovery. In any case, the authors cited studies showing that protein-enriched,¹⁹ high caloric nutritional supplements (1.5 Kcal and 0.05 g protein/ml) significantly decreases post-operative complications²⁰ and they recommended that they be administered immediately after surgery and continued until the patient starts eating and drinking normally.

In summary, the study under discussion here adds to information available from several prior studies indicating the early oral feeding is safe and does not increase morbidity or mortality. Because time to resumption of a normal diet significantly shorter hospital stay may be shortened. Perhaps the best policy might be an "In between" approach. Patients could be told: "after your operation you can eat and drink whatever appeals to you, but we don't advise resuming a normal diet or eating a lot of solid foods for the first 24-36 hours." Such a policy might avoid the increased nausea and reduce the need for reinsertion of a nasogastric tube.

CONCLUSION: It is common believed that starting of oral feeding immediately after intestinal anastomoses may cause dyspepsia, fullness of abdomen, vomiting and even anastomotic disruption and leak. As a matter of fact application of Ryle's tube after these operations is generally advocated so that the site of anastomoses gets rest and prolong parenteral nutrition is usually advised. But it is observed in the study that these are not related with onset of early or late oral feeding and feeding is not at all related with period of paralytic ileus. The post-operative patients are in hypercatabolic state results immunodepressed. Hence early feed is justified rather than prolong parenteral feed and Ryle's tube application and aspiration for long period. In any case, protein-enriched, high caloric nutritional supplements (1.5 Kcal and 0.05 g protein/ml) significantly decreases post-operative complications and recommended to administer immediately after surgery though lot of solid food for till 24-36 hrs. after surgery is restricted.

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Inference: Early oral feeding after intestinal anastomoses is advocated and it does not have any contraindication. It prevent sepsis, overcome post-operative catabolic crisis, adequate nutritional support for wound healing and gradually reduces hospital stay. Early feeding is not related with wound dehiscence or other complications.

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