



**ORIGINAL RESEARCH PAPER**

**General Surgery**

**EARLY VS DELAYED ENTERAL FEEDING IN CASES OF DUODENAL PERFORATION : AN OBSERVATIONAL STUDY.**

**KEY WORDS:** : Early enteral feeding, traditional feeding, duodenal perforation, postoperative complications.

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**ABSTRACT**

This study was done to assess the feasibility of early feeding in patients undergone emergency duodenal perforation repair. An observational study was done in 80 patients who underwent duodenal perforation repair from March 2015 to March 2016. Patients with severe shock and co-morbid conditions like uncontrolled Diabetes Mellitus, Hypertension, Chronic Obstructive pulmonary Disease, malignancy. Patients were divided into early and late enteral feeding group. In early feeding group feeding started within 48 hrs after surgery. The outcomes of the early and the late feeding groups were compared. Pulmonary complications (7.5% vs 32.5%, p=0.005), wound infections (25% vs 45%, p=0.04), burst abdomen (5% vs 22.3%, p=0.023) were found to be significant and more commonly seen in late feeding group than early feeding group. Length of the hospital stay after duodenal perforation repair were significantly greater (8.63 days vs 11.45%, p=0.03) in late feeding group. Early enteral feeding after duodenal perforation repair may be feasible in patients without shock or other co-morbid condition.

**Introduction**

Traditionally, the postoperative management undergoing gastrointestinal surgery has been to keep them 'nil per mouth' and provide gastric decompression via a nasogastric tube until the postoperative ileus resolves and bowel function resumes(1). This management has been adopted over the years with the notion that restriction of oral feeding gives GI tract more time to heal and recover, thus reducing postoperative complications(1,2). However, clinical trials do not support this. Several studies have emphasized that early enteral feeding should be started as soon as possible after resuscitation because the immunomodulatory effect of enteral feeding could assist recovery.

**Materials and methods:**

An observational and comparative study was carried out on 80 patients, with stable hemodynamic condition without any co-morbid conditions, undergoing peptic perforation repair in emergency, in the Department of General Surgery, Bankura Sammilani Medical College and Hospital, between March 2016 to March 2017. Patients were divided into, group A (40) and group B (40). Group A patients were fed via enteral route within 48 hrs of peptic perforation repair. Group B were fed via enteral route after 96 hrs or appearance of full peristaltic sounds following peptic perforation repair. These patients were followed in post-operative period for, any nausea, vomiting, or significant abdominal distension, prolonged ileus, clinical leakage, infective complications, hospital stay. Early feeding was done in a form of liquid or soft diet per orally within 48 hrs after surgery and in late groups early feeding was done after 96 hrs. Feeding rate was dependent on patient's acceptance and status.

Statistical Analysis

Chi square test and 'T' Test.

**Results**

The mean age of the patient in group A was 43.79 yrs. (SD=9.85) and 44.95 (SD=12.20) in group B and was comparable. In group A 12.5% and 10% in group B were females. Thus these groups were comparable for the distribution of the emergency cases. Enteral feed was started within 48 hours of surgery and it was well tolerated in 36(90%) cases of group A and 34(85%) cases of group B. Remaining 4 cases(10%) of group A and 6 cases (15%) of group B could not tolerate early enteral feeds. Oral feeding had to be withheld for next 6-12 hrs, then all the patients could tolerate feed in small quantities. In the present study, 10% of patients in group A and 15% patients in group B complained of vomiting and

distension after the start of oral feeds. Intestinal peristaltic sounds appeared in a significantly shorter period of time in group A (mean 2.40 days ;SD=1.10) as compared to group B (mean 3.05 days; SD=1.58). In the present study, the diarrhea was also investigated but was not significant. The majority of the complications were wound infections, in Group A 10 cases (10%) and 18 cases (45%) in Group B were present which was significant. There was significant association between the burst abdomen and patients of the two group. In Group A, 2 patients (5%) and 9 patients (22.8%) had burst abdomen, the risk was 5.51 times more among the patients with early enteral feeding. In regards to the pulmonary complications after emergency surgery, Barlow, et al (3) demonstrated that operative morbidity was less common after major upper GI surgery in patients who received early enteral nutrition. In particular, chest infections were significantly less common in these patients. Moore, et al (4), via meta-analysis of high risk surgical patients, also found the early enteral feeding was associated with the lower incidence of pneumonia and other septic complications. In present study pulmonary infections were noted in 3 cases (7.5%) in early enteral feeding group and 13 cases (32.5%) in late enteral feeding group which was significant. In the present study the mean duration of postoperative hospital stay was 8.63 days (SD=3.51) in group A and 11.45 days (SD=5.93) in group B and the difference was statistically significant (p<0.03).

**Table. 1. Demographics**

Variable	Group A (n=40)	Group B (n=40)	P value
Age(yrs.)	43.73(9.85)	44.95(12.20)	0.58
Gender(M:F)	35:5	36:4	0.72

**Table. 2. Surgical complications and outcomes.**

Complication/outcome	Group A (n=40)	Group B (n=40)	P value
Pulmonary infections	3(7.5%)	13(32.5%)	0.005
Wound infections	10(25%)	18(45%)	0.04
Burst abdomen	2(5%)	9(22.8%)	0.023
Hospital stay	8.63(3.51)	11.45(5.93)	0.03

**Discussion**

The present study focused on the safety of early feeding after emergency GI surgery in patient with relatively stable hemodynamic status. The findings of this study suggest that

early feeding is safe after emergency GI surgery. The complication rates and the duration of hospital stay was less in early feeding group. Traditionally enteral feeding is not started until bowel motility has recovered after elective surgery on the GI tract (5), causing delays in enteral feeding after emergency surgery. Early enteral feeding is well tolerated and it reduces significantly the rate of postoperative complications (6). As a consequence, there is now consensus that critically ill patients are candidates to enteral feeding if they have a functioning GI tract. The timing of feeding, as related to surgery, also influences the clinical outcome. The earlier the patient is fed enterally; the better is the clinical outcome. The EN usually can begin postoperatively as soon as the patient is haemodynamically stable. Preferably it should start within 24 hours of surgery and no later than 48 hours (7, 8). Two influential trials were conducted at Denver General Hospital during the 1980s in severely injured patients. Moore EE et al. (9) demonstrated the advantage of early enteral feeding in post-trauma patients. They showed that after major abdominal trauma early EN performed through a needle catheter jejunostomy significantly decreased the rate of septic complications (9% vs. 29%), compared to the conventional practice of withholding A randomized prospective study carried out by Malhotra et al (10) demonstrated that there is no evidence to suggest that bowel rest and a period of starvation are beneficial for the healing of wounds and anastomotic integrity. Indeed, the evidence is that luminal nutrition within 24 hours of operation may enhance wound healing and increase anastomotic strength, particularly in malnourished patients nutritional support for several days after trauma. R Beier-Holgersen et al (11) in their study showed that early enteral nutrition given to patients after major abdominal surgery results in an important reduction in infectious complications. Lewis et al (12) in their systematic review and metaanalysis of randomized controlled trials comparing any type of enteral feeding started within 24 hours after surgery to nil by mouth management in elective gastrointestinal surgery showed that there is no clear advantage in keeping patients nil by mouth after elective gastrointestinal resection. Early feeding may be of benefit in term of reducing the risk of any type of infection and the mean length of stay in hospital.

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