

Comparative study of early vs late enteral feeding following intestinal anastomosis

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Abstract- INTRODUCTION – Observing the low incidence of complications following early feeding in patients undergoing intestinal anastomosis, the need for delayed feeding is frequently being questioned. The early enteral feeding in intestinal anastomosis can be safely started.

METHODS - In study group we started the feeding after 12-14 hours of surgery with clear water at the rate of 50ml/hr. Well tolerated patients were taken on semi-solid diet after 24-36 hours and on normal regular diet after 36-48 hours of surgery. Patients general vital charting, assessment of time of passage of first stool, appearance of bowel sounds and assessment of complains was done at 12 hourly all complications is recorded.

RESULTS – The average length of hospital stay was shorter in the early feeding group and was statistically significant with a ($P < 0.001$). There were no complications of anastomotic leakage in both the delayed feeding group and early feeding group.

CONCLUSION - Early feeding after intestinal anastomoses is a safe method that improves the condition of the patients without increasing the post-operative complications and this increases patient's satisfaction irrespective of the surgical technique used.

Index Terms- Anastomoses, Early Feeding, Delayed Feeding, Leakage

I. INTRODUCTION

The concept of delayed oral feeding following gut surgery only after passage of flatus or stool has been adopted over the years with the notion that restriction of oral feeding offers the GIT longer to heal and recover and reduces stress on anastomosis site and prevent leakage thus reducing post-operative complications, [1] but even if we do not give oral feeding, about 2-2.5 L of gastrointestinal and pancreatic secretions enters the small bowel and transit from the anastomosis site. It was antecedently assumed that the fasting would defend the anastomosis from any complication like abdominal distention, vomiting, ileus, anastomotic dehiscence or leaks, wound infection and would allow a hermetic closure of the anastomosis before the beginning of enteral feeding. [2-4]. It is clearly demonstrated that the mucosal epithelium of the bowel is perfectly sealed after the first 24 hours of the post-operative period. According to Davila-Perez et al. [5], it is not necessary to keep the 5-day fasting in order to prevent post-operative complications and should not be used routinely. ESPEN guidelines suggested early initiation of enteral feeding within twenty-four hours after gastrointestinal surgery

however conjointly state that it has to be adapted in keeping with the individual tolerance and type of surgery [6]. Initiation of feeding ought to be progressive and a 24-hr liquid diet should be maintained before starting a bland diet just in case of complications ought to arise. Gulsen Ekigen et al. reported in their study that early small-volume feed tends to be tolerated and are valuable despite the kind of abdominal surgery and in different study the time for reaching a complete diet were significantly earlier in the early feeding group, also hospital stay decreased [7].

II. MATERIAL & METHODS

SOURCE OF DATA

- Cases admitted and operated in surgery department at Dr. Sushila Tiwari Government Hospital, Haldwani undergoing intestinal anastomosis were clinically evaluated.

METHOD OF COLLECTION OF DATA

- Data was collected from patient admitted between January 2018 to September 2019 who underwent intestinal anastomosis in each group of study. Randomization was done with the alternate patient being placed in case and control group. Total 60 patients were studied.

INCLUSION CRITERIA :

- All patients fit for surgery
- Patient giving consent to be part of study

EXCLUSION CRITERIA :

- Patient not giving consent to be part of study

III. METHODOLOGY

- In study group we started the feeding after 12-14 hours of surgery with clear water at the rate of 50ml/hr. Well tolerated patients were taken on semi-solid diet after 24-36 hours and on normal regular diet after 36-48 hours of surgery.
- Patients who were not tolerating early feeding *i.e.* having abdominal distention and vomiting, feeding was stopped for 12 hours and refeeding was started afterwards. In late feeding groups, we started the feeding in traditional method (after bowel sounds and passage of flatus) after 5th day and same feeding plan was given as in early feeding group.
- Patients general vital charting (pulse rate, blood pressure, fever), assessment of time of passage of first stool, appearance of bowel sounds and assessment of time of passage of first stool, appearance of bowel sounds and assessment of

complains like vomiting, abdominal distension and sign of bowel anastomosis dehiscence (fever, tachycardia, abdominal distension, guarding, rigidity, drain content and output) was done at 12 hourly all complications is recorded.

IV. OBSERVATIONS & RESULTS

Table 1: Correlation between Sex distribution & two groups

Sex	Early		Late		Chi square value	P Value
	No. of Patients	%	No. of Patients	%		
F	8	26.7%	11	36.7%	0.693	0.405
M	22	73.3%	19	63.3%		
Total	30	100.0%	30	100.0%		

Table 2: Correlation between Age groups distribution & two groups

Age Groups	Early		Late		Chi square value	P Value
	No. of Patients	%	No. of Patients	%		
upto 20 yrs	6	20.0%	9	30.0%	5.623	0.228
21 - 30 yrs	9	30.0%	2	6.7%		
31 - 40 yrs	7	23.3%	8	26.7%		
41 - 50 yrs	4	13.3%	5	16.7%		
>50 yrs	4	13.3%	6	20.0%		
Total	30	100.0%	30	100.0%		

Table 3: Correlation between Resolution of Ileus (First passage of Faeces) & two groups

Resolution of Ileus (First passage of Faeces on POD)	Early		Late		Chi square value	P Value
	No. of Patients	%	No. of Patients	%		
2	22	73.3%	17	56.7%	2.974	0.226

3	6	20.0%	12	40.0%		
4	2	6.7%	1	3.3%		
Total	30	100.0%	30	100.0%		

Only 3 patients (10%) in the early group complained of vomiting and none of the patients had symptoms abdominal distension and, in any patient, we had not reinserted the nasogastric feeding tube. Feeding was stopped for next 12 hours in patient s with vomiting and was resumed after 12 hours. Patient well tolerated feeding after 12 hours.

Table 4: Correlation between Vomiting & two groups

Vomiting	Early		Late		Chi square value	P Value
	No. of Patients	%	No. of Patients	%		
+	3	10.0%	0	0.0%	3.158	0.237
-	27	90.0%	30	100.0%		
Total	30	100.0%	30	100.0%		

Table 5: Correlation between Abdominal Distension & two groups

Abdominal Distension	Early		Late		Chi square value	P Value
	No. of Patients	%	No. of Patients	%		
Yes	0	0.0%	0	0.0%	-	-
No	30	100.0%	30	100.0%		
Total	30	100.0%	30	100.0%		

Table 6: Comparison of mean Hospital stay between two groups

	Early	Late	Mean Difference	t value	P Value
	Mean ± SD	Mean ± SD			
Hospital stay	5.80 ± 0.81	9.23 ± 1.87	3.433	9.238	<0.001

Table 7: Correlation between Anastomotic Leakage & two groups

Anastomotic Leakage	Early		Late		Chi square value	P Value
	No. of Patients	%	No. of Patients	%		
Yes	0	0.0%	0	0.0%	-	-
No	30	100.0%	30	100.0%		
Total	30	100.0%	30	100.0%		

V. DISCUSSION

After intestinal anastomosis the practice has been to delay feeding until there is clinical evidence of bowel movement. Studies have shown that early enteral feeding has better outcome in terms of shorter duration of hospital stay and lower rates of complication. In spite of the documented evidence the practice of delayed feeding after small gut anastomosis is still the norm. Adequate nutrition in the postoperative period is a major goal that is never achieved when feeding is delayed after anastomosis. Early feeding reduces the incidence of infections, improves wound healing and anastomotic strength.

A study conducted by **Detry R et al** on 33 patients were placed under early oral feeding after elective colorectal surgery. Nasogastric tube was removed as soon as they were widely awake, or on the morning following the afternoon operations. Oral feeding was resumed four hours later, and the first meal consisted in a slight solid meal. There was no postoperative mortality or significant morbidity. Liquid and solid oral intakes were resumed eighteen and twenty-four hours respectively after the operation. Tolerance was perfect in 22 patients (66%), good (slight complaints) in 16%, and was considered as fair or bad in the last six cases. No adverse effect on the anastomoses was noted.

In our study, majority of the patients were within the age range of 18 to 60 years but extreme age groups were also included in the study. Mean age group of patients in the early feeding group was 34.27 ± 16.04 years and in the late feeding group was 34.45 ± 19.69 years. The age difference of the patients between the two study groups was statistically insignificant ($P=0.228$). With respect to sex, there was no significant difference in the male to female ratio between the two groups ($p=0.405$). In the early feeding group, the 22 (73.3%) were male and the female were 8 (26.7%). In the delayed feeding 19 (63.3%) were male while the female patients were 11 (36.7%).

There were no complaints pertaining to intolerance of feeding in the study group. Only 3 (10%) patients in the early feeding group developed vomiting which was statistically insignificant ($P=0.237$) and none of them developed abdominal distention.

A study conducted by **Rajeev Kapoor et al** compared the effects of early enteral feeding with those of conventional

management in patients undergoing intestinal anastomosis. Early feeding was shown to scale back the danger of any specific infection, mean length of hospital stay, anastomotic dehiscence, wound infection, pneumonia, intra-abdominal abscesses. Overall early enteral nutrition reduced post-operative morbidity and better patient outcome.

In this study, there were no complications of anastomotic leakage in both the delayed feeding group and early feeding group. The average length of hospital stay was shorter at 5.80 ± 0.81 days in the early feeding group than the late feeding group at 9.23 ± 1.87 days. This was statistically significant with a ($P<0.001$).

VI. CONCLUSIONS

In early feeding group, there were no such complication of anastomotic leakage like fever, tachycardia etc. In early feeding group, patient was well tolerated to early feeding. There was no such significant complication like vomiting, abdominal distension. In addition, in early feeding group as compared with late feeding group, hospital stay of the patient was shorter. This study showed that the early feeding after intestinal anastomoses is a safe method that improves the condition of the patients without increasing the post-operative complications and this increases patient's satisfaction irrespective of the surgical technique used. This approach also reduces hospital stay.

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