

To Study the Efficacy of Early Enteral / Oral Feeding in Acute Pancreatitis

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Abstract

Background: Aim: The present preprospective, observational Study was conducted to evaluate the efficacy of Early Enteral / Oral Feeding in Acute Pancreatitis. **Methods:** the study population consisted of 50 patients of either sex with the diagnosis of pancreatitis (mild, moderate and severe) made clinically, biochemically & radiologically. Patients were divided into two groups, the study group A (25 patients) were put on early enteral / oral feeding (within 48 hours) and control group B (25 patients) were put on parenteral feeding (IV fluids) or NPO. In both the groups, patient demographics, duration from onset of symptoms, clinical findings, investigations, length of hospital stay, complications were assessed and compared. The data from both groups were compared. Data was collected & analyzed by using SPSS statistics software 22 version. **Results:** The results showed that the mean age of the patients was 45.27± 17.5 and male predominance was seen. Alcohol (38%), gall stones (40%) and post ERCP(20%) were the main aetiological factors for Acute Pancreatitis. Pain abdomen, nausea /vomiting, ileus and diarrhea after enteral feeding was less while it was more in patients on parenteral feed . It was observed that all the features were significantly more in control group. It was observed that patients with EN feeding were significantly more tolerant to diet than PN feeding group. Similar trends were seen in length of hospital stay, patients with enteral feeding had less hospital stay duration than other group. **Conclusions:** Thus our study showed that pancreatitis patients can be safely started on early enteral feeds and it showed lesser number of gastro intestinal adverse effects, better oral tolerance to feeds, lesser complications, and hence lesser duration of stay which is in concordance to various studies.

Keywords:- Early Enteral, Oral Feeding, Acute Pancreatitis.

INTRODUCTION

Acute pancreatitis is an acute abdominal condition presenting with abdominal pain and is usually associated with the raised pancreatic enzyme levels in the blood or urine as a result of pancreatic inflammation.^[1] It is a disease with

a high mortality, and frequently caused by gallstone or excess alcohol ingestion.

Just a decade ago, treating a patient with Acute Pancreatitis looked rather straight forward for just about every resident: it meant IV fluids, suitable pain killers and a strict nil-by-mouth regimen for at least a couple of days. Nutritional

support was, if at all, given via the parenteral route.^[2]

But now it is thought that prolonged parenteral feeding has many side-effects such as increased permeability and atrophy of gut mucosa. Other than that, the lack of peristaltic movement results in hypomotility of the gut, and the stagnant contents in bowel also leads to changes in the microflora of intestines. Due to these adverse effects caused by parenteral route the enteral feeding is suggested. It is believed that it prevents the above mentioned atrophic changes as the uptake of nutrients in intestinal epithelial cells directly comes from the intestinal lumen.^[3]

Thus the present study was conducted to observe and compare the effects and benefits of early enteral / oral feeding with that of parenteral feeding in acute pancreatitis patients. We also evaluated the occurrence of complications and hospital stay in both types of feeding.

MATERIAL AND METHODS

The present study was prospective, observational trial and was conducted on 50 patients of either sex in surgical ward of Rajindra Hospital, Patiala. The patients with the diagnosis of pancreatitis (mild, moderate and severe) made clinically, biochemically & radiologically were included in the study. Patients who refused to give consent for the trial were excluded from the study.

Patients were divided into two groups, the study group A (25 patients) were put on early enteral / oral feeding (within 48 hours) and control group B (25 patients) were put on parenteral feeding (IV fluids) or NPO. Enteral

feeding was done using a clear liquid through nasogastric tube followed by diet for the first 24 hours. If tolerated the diet was advanced to soft low - fat diet orally over the next 24 hours and then to a low fat solid diet.

In both the groups, patient demographics, duration from onset of symptoms, clinical findings, investigations, length of hospital stay, complications were assessed and compared. The data from both groups were compared. Data was collected & analyzed by using SPSS statistics software 22 version.

RESULTS

The results showed that the mean age of the patients was 45.27 ± 17.5 and male predominance was seen in the patients with acute pancreatitis with 66% of patients being male. Both the study groups and control group were comparable based on age and sex. Alcohol (38%), gall stones(40%) and post ERCP(20%) were the main aetiological factors for Acute Pancreatitis.

While distributing the patient according to Balthazar CT score both the groups were comparable. Pain abdomen, nausea /vomiting, ileus and diarrhea after enteral feeding was present in 16%, 16% ,8% and 4% respectively of the patients of the study group while it was present in 56%, 48%, 52% and 44% respectively in patients of the control (PN) group. It was observed that all the features were significantly more in control group. On distributing patients according to full tolerance to diet in various grades of acute pancreatitis it was observed that patients with EN feeding were significantly more tolerant to diet then PN feeding group. Similar trends were seen in length of hospital

stay, patients with enteral feeding had less hospital stay duration than other group.

Table 1: Baseline Characteristics of enrolled patients

Parameter	Total	EN	PN	P value
Age	45.27± 17.5	45.52 ± 18.72	45.04 ± 16.65	0.85
Male sex(%)	33 (66%)	18 (72%)	15 (60%)	0.69
Etiology				
Alcohol	19 (38%)	10 (40%)	9 (36%)	0.525
Gall stones	20 (40%)	9 (36%)	11 (44%)	
Post ERCP	5 (20%)	4 (16%)	1 (4%)	
Idiopathic	6 (24%)	2 (8%)	4 (16%)	

Table 2: Grading of Acute Pancreatitis According To Balthazar CT-Score

Grades	Study group (%)	Control group (%)	p- value
Mild (%)	9 (36%)	10 (50%)	0.778
Moderate (%)	10 (40%)	11 (44%)	
Severe (%)	6 (24%)	4 (16%)	

Table 3: Post feeding complications in both the groups after commencement of treatment

Post feeding complications	EN n(%)	PN n(%)	p- value
Pain abdomen	4 (16%)	14 (56%)	0.006*
Nausea/Vomiting	21 (84%)	11 (44%)	0.005*
Ileus	1 (4%)	11 (44%)	0.002*
Diarrhoea	2 (8%)	12 (48%)	0.007*
Aspiration of contents	0 (0%)	0 (0%)	-

Table 4: Distribution of patients according to full tolerance to diet in various grades of acute pancreatitis.

Full tolerance to diet in various grades of Acute Pancreatitis	Study group		Control group		p- value
	Number /Total	% Age	Number/Total	% Age	
Mild	9 / 9	100%	7 / 10	70%	0.020
Moderate	9 / 10	90%	5 / 11	45.5%	0.030
Severe	5 / 6	83.33%	2 / 4	50%	0.250
Total	23 / 25	92%	14 / 25	56%	0.003

Table 5: Hospital Stay (Days)

Grades	Study group (%)	Control group (%)	p- value
5 to 7	13(52%)	0(0%)	0.0001
8 to 10	10(40%)	10(40%)	



11 to 13	2(8%)	13(52%)
≥14	0(0%)	2(8%)
Mean ± SD	7.56 ± 1.94	11.16 ± 1.43

DISCUSSION

Acute Pancreatitis is an acute inflammatory condition which is thought to be due to triggering of enzymes within the pancreatic acinar cells, causing inflammation extending into the surrounding tissues. The two most common causative factors, contributing more than 80% of cases, are gallstones and alcohol abuse.^[4]

In present study alcohol, gall stones and post ERCP were the main aetiological factors for Acute Pancreatitis. Our results were in concordance with the results obtained by previous authors who also reported alcohol as the main etiologic factor for Acute Pancreatitis. In a study conducted by Manjunath BD et al,^[5] Alcohol was the etiologic factor in 83.8% cases of study group and 87.1% of cases of control group. In their study also gall stones were second most common etiologic agents. Bhansali SK et al,^[6] also reported alcohol followed by gallstones as the main etiologic factor for Acute Pancreatitis.

According to Balthazar CT score, in the study group, 36% (N=9) of the patients, 40% (N=10) of the patients and 24% (N=6) of the patients had mild, moderate and severe grade of Acute Pancreatitis respectively; while in the control group, 50% (N=10) of the patients, 44% (N=11) of the patients and 16% (N=4) of the patients had mild, moderate and severe grade of Acute Pancreatitis respectively. In a study conducted by Farooq O et al,^[1] both the groups were comparable in terms of severity of pancreatitis. They reported that 57.3%, 17.9% and 24.8% of

the patients of the early enteral nutrition group had mild, moderate and severe pancreatitis respectively; while 61.5%, 15.4% and 23.1% of the patients of the total parenteral nutrition group had mild, moderate and severe pancreatitis respectively. In both the studies no significant difference was observed.

Pain, nausea, diarrhea was significantly high in control group than study group in present study. Chandran K et al,^[7] also reported the same results who observed pain and nausea vomiting to be high in patients with parenteral feeding. In a study conducted by Manjunath BD et al,^[5] incidence of Nausea/Vomiting among the patients of the early feed group and parenteral feed group was 74.19% and 85.48% respectively. In a same study they observed that Ileus among the patients of the early feed group and parenteral feed group to be 12.9% and 14.52% respectively. In their study they also reported incidence of diarrhoea to be significantly lower among the patients of the early feed group (6.45%) in comparison to the patients of the parenteral group (11.29%).

Full tolerance to diet after enteral feeding was present in 92% (N=23) of the patients of the study group and 56% (N=14) of the patients of the control group respectively. Our results were in concordance with the results obtained by previous study of Chandran K et al,^[7] Mc Clave et al,^[8] and Farooq et al,^[2] who also reported full tolerated to diet in study group significantly as compared to control group.

In the present study the length of hospital stay in patients with enteral feeding was

significantly less than other group. Our results were in concordance with the results obtained by previous authors who also reported significantly lower hospital stay among the patients of the early feed group (Farooq O et al, Zhao et al, Chandran K et al).^[2,7,9] Similarly there was another study by Eckerwall et al,^[10] which was a randomized clinical study and it concluded that immediate oral feeding in patients with mild Acute Pancreatitis is safe and resulted in accelerated recovery without adverse gastro intestinal effects and reduced hospital stay. Meta-analysis by Marik et al,^[11] and Mc Clave et al,^[8] demonstrated that use of enteral nutrition in Acute Pancreatitis resulted in significant reduction in infections, complications other than infections, operative interventions and length of hospital stay as well as a decreasing trend toward organ failure. The reason for shorter duration of hospital stay could be attributed to the fact that even small amounts of enteral nutrition may help to preserve intestinal epithelium and epithelial tight cell junctions, stimulating secretion of brush border enzymes, enhancing immune function and prevents bacterial translocation.

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Thus our study showed that pancreatitis patients can be safely started on early enteral feeds and it showed lesser number of gastro intestinal adverse effects, better oral tolerance to feeds, lesser complications, and hence lesser duration of stay which is in concordance to various studies.

CONCLUSIONS

Patients with Acute Pancreatitis can be safely started on early enteral feeding within 48 hours of hospital admission. Early Enteral feeding within 48 hours of hospital admission reduces gastro intestinal side effects like, Pain abdomen, Nausea/Vomiting, Ileus, Diarrhoea, Aspiration of contents. This also shows full tolerance to diet in all the grades of Acute Pancreatitis (Mild, Moderate and Severe Acute Pancreatitis) with statistically significant results in mild and moderate degree of Acute Pancreatitis and statistically insignificant results in severe degree of Acute Pancreatitis in our study. Early enteral feeding also shortens Hospital stay. However, small sample size and short follow up period are the limitations of the study.



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