



ROLE OF EARLY FEEDING THROUGH JEJUNOSTOMY IN MORIBUND PATIENTS OF PERFORATION PERITONITIS

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ABSTRACT

INTRODUCTION: Patients of perforation peritonitis are regularly being attended in emergency section of all hospitals. Majority of patients report in a very critical conditions as septicemia, dehydration and are in malnourished state. It has been repeatedly demonstrated that pre and post-operative nutritional status of patients has a direct bearing with recovery postoperative morbidity and mortality. Clinical trials and many metanalysis suggest that early post-operative parenteral feeding should be started as soon as possible, even within 12 hrs, as it helps in mucosal regeneration due to more calories and proteins being given, and also improve the immune status of patients. We in our study started early feeding in severely sick patients of peptic perforation by feeding jejunostomy within 24 hrs and observed the results closely.

MATERIALS AND METHOD: The study was conducted on 60 patients of peptic perforation, admitted in emergency section of TMU Hospital, Moradabad UP, and were grouped in two groups, Gr A & Gr B, the study and control group respectively, a detailed clinical history, examination and assessment of patients was done. After proper resuscitation, surgical repair of perforation was undertaken and in Gr A additional Witzel feeding jejunostomy was created. In addition to IV fluids, nasogastric suction, liquid feeds were given through jejunostomy tube. Amount, calories, proteins, were given on the advice of dietician of hospital.

RESULTS: Post-operative observations and results were recorded and analyzed for surgical site wound infection, wound dehiscence, weight of patient's, hemoglobin levels, general feeling, and hospital stay, in ICU and in wards.

CONCLUSION: Results of our study had matched with many previous studies that patients gained weight, rise in hemoglobin level, reduction in number of SSI infection, wound dehiscence, and duration of hospital stay. Thus we conclude that early jejunal feeding in severely sick patients can be of help in early recovery and can be started.

KEYWORDS : Peptic Perforation, Early Enteral Nutrition, Feeding Jejunostomy

INTRODUCTION

Peptic ulcer disease (PUD) affects almost 4 million people worldwide annually and its incidence has been estimated to be around 1.5% to 3%. Peptic perforation is a serious complication of PUD . Lifetime prevalence of perforation in patients of PUD is about 5%, its 30 days mortality is around 20%, reaching 30% after 90 days ⁽¹⁾.

Nutritional support is an integral part of management in critically ill patients. Ever since 1936 Studley ⁽²⁾, it has repeatedly been proved and demonstrated that pre and post-operative nutritional status of patients has a direct relationship with morbidity and mortality, thus it becomes considerable and also significant aspect to be considered, especially in critically ill patients. Patient's risk during and after surgery should be identified early, periods of long fasting should be minimized, and enteral nutrition be started as early as possible, has been suggested in many studies.

Malnutrition occurs in 30% surgical patients with Gastrointestinal(GI) diseases and about 60% during whole hospital stay, if fasting is prolonged because of post-operative complications. There is substantial evidence that patients who suffer from starvation or are kept nil orally for long time, have higher risk of death in comparison with patients with adequate nutritional reserve (MacFe) ⁽³⁾.

The optimal time to start post-operative enteral feeding can be influenced by factors like age of patient, comorbid conditions, metabolic state, organ involved, out of feeding etc. Early enteral feeding prevents adverse structural and functional changes in mucosa, augments visceral blood flow and improves local and systemic immune system.

The beneficial effects of early feeding postoperatively in GI surgery has been advocated and shown by E Nakeeb at el ⁽⁴⁾ and there is strong evidence that oral nutritional support (200 ml) twice daily given from the day of surgery is beneficial.

It has been a trend and practice to keep patients "Nil Orally" and put nasogastric tube for 3 to 7 days because of concept that gastric and colonic atony lasts up to 72 hours, but on contrary small intestine usually recovers with 12 hours or even in less time ⁽⁵⁾, concept being that keeping patient nil orally gives more time to heal and recover, thus reducing post-operative complications ^(6,7), but clinical trials however don't support it, and several studies have strongly recommended that

early enteral feeding should be started as soon as possible after resuscitation because immune-modulatory effect assists in tissue healing.

MATERIAL AND METHODS

A prospective, observational and comparative study on 60 patients, who were admitted with confirmed diagnosis of peptic perforation, was carried out in department of surgery of Teerthanker Mahaveer University Moradabad, UP. Duration of study was from Sept 2018 to Feb 20.

INCLUSION CRITERIA

- Both Male and Female sexes.
- All patients diagnosed with perforation peritonitis reporting to surgery department of TMMC&RC.

EXCLUSION CRITERIA

- Patients with comorbid diseases as, diabetes, Cardiac involvement, Metabolic and Renal disease.
- Malignancy

METHODOLOGY

We divided patients in two groups, A the study and B control group in alternate patients reporting to hospital. In Group A patients early feeding through feeding jejunostomy was started within 24 hrs, In liquid form along with IV fluids. In Group B patients were treated with conventional method of keeping patients nil orally for 3-5 days only on parenteral fluids in post-operative period. Selected patients after proper resuscitation underwent surgical repair under general anesthesia, and in all patients Graham's modified repair was done, peritoneal closure after its proper lavage, and drains were put in flank. In study group a Witzel feeding jejunostomy was created and strict aseptic precautions were maintained during feeding. Nasogastric suction, IV fluids were routinely and regularly given according to patient's output, and considering the natural loss. Calorie required in 24hrs were calculated and given as guided by dietician of the hospital, throughout post-operative period. In study group liquid milk feed along with sugar, protein, were supplemented after 12hrs. Jejunal feeding was monitored two hourly. Continuous nasogastric suction was done for 48hrs.

Patients were followed closely in post-operative period in ICU and later in wards, for abdominal distention, vomiting, nausea, leakage of

anastomotic site, infection either generalized or local wound site, burst abdomen, pulmonary complications, and hospital stay including ICU. Special record was done of local complications because of jejunostomy.

RESULTS

Sixty patients, included in the study were divided in two groups, Gr A the study and Gr B the control. Maximum number of patients was in age ranging from 45 to 60 yrs. Male 47 and females 13, reported in emergency section of hospital, and we selected alternative for study.

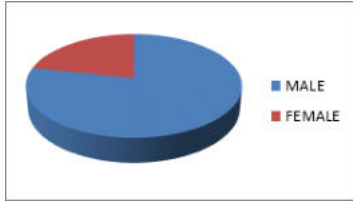


TABLE NO: 1

Sr.No	AGE in Years	No of patients (n = 60)
1	0---25	8
2	26----45	19
3	46----60	24
4	>60	9

POST-OPERATIVE SYMPTOMS AND SIGNS

Abdominal distention and diarrhea were distressing symptoms to patients, feeding was withheld for 4 to 6 hrs and then restarted. Lactobacillus was given through feeding. Wound infection and Burst abdomen, were significantly lower in Gr A. Remarkable observation was stay in hospital and feeling of wellbeing. Bowel sounds also appeared in study group on 2.1 (average) day. Number of patients developing chest infection, septicemia, Burst abdomen, and leakage from anastomotic site were significantly lesser in study Gr, and these results were very similar to Barlow and Moore. (Table No 2)

Weight loss was significant in Gr B, while hemoglobin level also improved but was not very marked.

TABLE NO: 2

Sr.No	Symptoms and Sign	Group A	Group B
1	Vomiting	9	6
2	Abdominal distention	22	16
3	Diarrhea	17	2
4	Leakage from repaired site	3	11
5	Septicemia	13	21
6	SSI	11	17
7	Burst Abdomen	2	7
8	Chest Infection	12	21
9	Hospital stay(in days) including ICU	9	14
10	Average intestinal bowel sounds(in days)	2.1	3.5
11	Death	3	7

CALORIES GIVEN

TABLE NO: 3

Sr.NO	Day	Through Jejunostomy in (Group A)	Oral Feeds in (Group B)
1	After 12Hrs	200ml/day	Nil
2	1	400ml	Nil
3	2&3	800ml	Nil
4	4	1500 ml	100 ml
5	5	3000	300 ml
6	6-8th	3600	3600

TABLE NO: 4

Sr.No	Parameters	Group A	Group B
1	Total Wt. Loss during Hosp Stay	2.74 Kg	5.9 Kg
2	Hemoglobin	>2.19gm	Loss of 1.5gm
3	Serum Albumin	Rise 0.15gm	Fall 1gm
4	Feeling of wellbeing	24 patients	3 patients

DISCUSSION

“WHENEVER GUT IS AVAILABLE USE IT” – is well said. In every emergency department of all hospitals, patients of perforation peritonitis are regularly and constantly admitted in all season. In our

tertiary hospital the scenario is not different, and are mostly due to peptic perforation.

After resuscitation of patients, we did repair and 60 patients were included in our study, 30 patient were given early feeding (within 24 hours) through jejunostomy, and results were compared with control group and also with other similar studies⁽⁸⁾. Majority of patients reporting are malnourished, with pedal edema, low albumin levels, good number patients were also found to be suffering from chronic diseases like Diabetes, Hypertension, Malignancies and other metabolic diseases, add to morbidity and mortality. Dempsey at el⁽⁹⁾ in their study established association between malnutrition status and Outcomes of surgery. Singh at el⁽¹⁰⁾ in his study is also of opinion to start early resumption of enteral feeding, even immediate feeding is feasible in patients with perforation and it reduces septic mortality.

Early enteral feeding has been emphasized by many multiple trials at different centers, and the same has been formulated in ASPEN but its timing still remains variable⁽¹¹⁾. Several studies have concluded and shown the trophic effects of Early Nutrition(EN) on gut mucosa, thus it becomes a rationale to start EN early, particularly in critical patients, but this important factor is usually overlooked in most centers post-operatively⁽¹²⁾, because of fear and apprehension of leakage from anastomotic site, leading delay in EN⁽¹³⁾

Several observational studies of different centers have documented, EN to be effective in recovery of postoperative patients^(14,15,16), but early initiation of parenteral nutrition has proven to cause more harm than benefits in well-nourished patients in emergency surgery.

Tejaswani at el⁽¹⁷⁾ concluded that EN in abdominal surgery ICU patients, was associated, with reduced hospital stay and infection rate, but duration or mortality did not vary significantly.

Moor at el⁽¹⁸⁾ in metanalysis comparing early feeding with parenteral nutrition in post-operative patients found reduced incidence of septic complications when given EN.

Lewis at el⁽¹⁹⁾ concluding a metanalysis that EN within 24 hrs versus late feeding, there was no obvious advantage in keeping patients nil orally following GI surgery.

In our study EN was through jejunostomy, and was associated with significant reduction in hospital stay 9 Days(average) , rate of infection, burst abdomen and anastomotic site leakage.

Our observations are in line with other studies^(20,21), that keeping patients nil orally, has no beneficial effects on post-operative healing process but on contrary, the evidence is that luminal nutrition may enhance and improve healing, and increases the anastomotic strength especially in malnourished patients.

There was reduction in septicemia in our study, as has been concluded in many studies^(19,22,23). In our study mean hospital stay was less, general condition and lookwise, also patients were better as compared to control group.

Keel at el⁽²⁴⁾ demonstrated that supplementary oral diet with 300 calories and 12 gram of protein per day reduced post- operative complications in patients undergoing GI surgery.

Singh at el⁽¹⁰⁾ found a positive nitrogen balance on 3rd day while Hoover⁽²⁵⁾ claimed it reaching on 4th post- operative day.

Weight loss was also a significant and important parameter in our study, because it psychologically imparts a positive effect of wellbeing. We noticed it being significant as compared to control group. Total loss in weight on the day of discharge was 2.74 Kg in study group while 5.9 kg in control group but Hooper did not record any weight gain.

Distention of abdomen and diarrhea were also noted in some cases in our study also in very few patients, but were controlled on the same day. Carr at el⁽²⁶⁾ claims that incidence of vomiting and nausea was much higher on EN. Fabio's at el⁽²⁷⁾ in his study on Enteral Vs. Parenteral nutrition after GI surgery failed to demonstrate any reduction in post-operative complications and morbidity, when compared with parenteral nutrition, but Malhotra at el⁽⁸⁾ were of opinion that early enteral nutrition is safe and associated with beneficial effects like lower weight loss, early recovery in positive

nitrogen balance as compared to conventional group of keeping patients nil orally.

A metanalysis has advocated that early commencement of post-operative nutrition (with in 24 hrs.) vs. traditional management in abdominal surgery, reduces mortality and morbidity rates⁽²¹⁾

CONCLUSION

In our study we concluded that early parenteral feeding through feeding jejunostomy.

Especially in very sick patients of perforation peritonitis, has great advantages like reduced hospital stay, gain in weight, feeling of better, increases in immune system, low incidence of wound dehiscence, over conventional methods of keeping patients nil orally thus it can be followed as a routine for better post-operative outcomes.

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