

# Safety of short stay Hospitalization in Reversal of Loop Ileostomy

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## Abstract

**Study Design:** Prospective, randomized **Place:** Surgical-3 Jinnah Hospital/ Allama Iqbal Medical College, Lahore. **Duration:** Two years, January 2009-December 2011. **Methods:** Patients between 10-50 years, waiting for ileal stoma reversal were re-investigated and were prepared on out door basis. Admissions were done one day before operation of stoma reversal. All operations were undertaken on elective lists by the same grade of surgeons. Patients were randomly allocated one of the two groups. Each group consisted of 60 patients. Group-1 patients were allowed to take clear liquids 4 hours after surgery and fluid diet was given on first postoperative day and were discharged from hospital 24 hours after operation. Patients of group-2 were kept NPO for 4 days with nasogastric tube in situ. Clear fluids were allowed on 4<sup>th</sup> postoperative day. Fluid diet was permitted on 5<sup>th</sup> postoperative day and were discharged from hospital on 6-7<sup>th</sup> postoperative day. **Inclusion criteria:** Loop ileostomy. **Exclusion criteria:** End ileostomy, Extremes of age. **Results:** Sample size of the research was 120 patients with random division

in two groups. Group-1 consisted of 60 patients undergoing protocol of short stay hospitalization whereas 60 patients of group-2 were managed with conventional method of intravenous fluid and nil by mouth for 4-5 day. The demographic characteristics of group-1 and group-2 were similar. The indications of constructing of ileostomy were abdominal tuberculosis, typhoid perforation, obstetrical trauma, firearm injury, iatrogenic intestinal injury during adhenolysis and strangulated hernia with gangrenous intestine. The indications were almost identical in both groups. Majority of patients of group-1(70%) were able to go home on first postoperative day with total hospital stay of 2 days. In group-2, 66.6% of the total patients had hospital stay of 8 days with p value of .674 (p=.674) which is insignificant statistically. Similarly the statistics of postoperative complications were similar with p value of .805 (p=.805) which is again not significant. **Conclusion:** Short stay hospitalization is safe and feasible in majority of the patients undergoing ileostomy reversal. **Key Word:** Ileostomy reversal-short stay.

## INTRODUCTION

Ileostomy is a life saving procedure. Indications of this operation are not same through out the world. In western world, loop ileostomy is constructed after proctocolectomy for inflammatory bowel disease to protect distal anastomosis. In Southeast Asia typhoid enteric and abdominal tuberculosis are the commonest causes of temporary ileostomy. In countries of this region, salmonella infections and tuberculosis is endemic. In these entities patients may present either with peritonitis or complicated intestinal obstruction. Condition of intestine is usually so bad that primary closure or primary resection and anastomosis is not safe and feasible. In such patients quick life saving procedures are required. Proximal loop ileostomy is

optimal option in such situation. The reversal of loop ileostomy is considered a simple procedure but can be associated with significantly high morbidity and even mortality<sup>1</sup>. Stoma is closed after maturation and complete recovery of patient from his initial illness. Conventionally, after reversal operations, patients are kept nothing by mouth for 4-5 days with nasogastric tube in situ. Intravenous fluids and antibiotics are given for 5 days. The advancement in understanding of physiology of gastrointestinal tract, maintenance of fluid and electrolyte balance, availability of parenteral nutrition and better quality of suture material have made intestinal surgery safe. Meta analysis of this

subject,<sup>2</sup> and the results of present randomized clinical study negates the 5days fasting.

### MATERIAL AND METHOD

This study was carried out in surgical-III of Jinnah hospital/Allama Iqbal Medical College, Lahore, from January 2010 to December 2011. Patients in whom loop ileostomy was made in our department and were waiting for reversal were included in this project. In ileostomy for abdominal tuberculosis, reversal was done after completion of anti tuberculosis therapy whereas in rest of the patients closure of stoma was undertaken after 3 months of initial operation. A detailed history was taken in out patient department and complete examination was done, special inquiry and assessment was done regarding the nutritional status of the patients. Patients with significant malnutrition were deferred for reversal till improvement in the nutritional status. The operation notes of previous operation were studied in detail and type of ileostomy was confirmed. The patency and condition of intestine distal to ileostomy was assessed with distal loopogram.

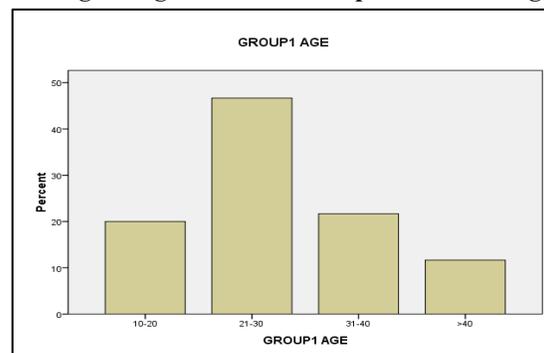
Patients were operated on elective lists. A dose of third generation cephalosporin and metronidazole was injected intravenously after induction of anesthesia. After complete mobilization, rent in intestine was repaired with single layer of extra mucosal sutures using 00 polylactide. When there was problem in the patency of lumen of intestine, formal resection of stoma site was done and end to end anastomosis was performed. Haemostasis was ensured. Gentle anal dilatation was done in all patients before reversing from anesthesia. For postoperative management patients were randomly divided in two groups. In patients of group-1 intravenous fluids and analgesia was continued for 12 hours. Clear fluids were started 4 hours after operation and on toleration of clear fluids, they were encouraged to mobilize and go to toilet for passing urine. Inquiry was made on first postoperative morning regarding nausea, vomiting and passage of flatus. Those patients who have tolerated clear fluids, were allowed to take fluid diet like Ensure(Abbots). A complete record of abdominal examination, like abdominal distension and condition of bowel sounds was kept. Examination of wound was performed and fresh dressing was done. Those patients who tolerated fluid diet, had no vomiting and had passed flatus were discharged from hospital with very clear instructions. Results were entered in a Performa. Patients of group-2 were kept nil orally with nasogastric tube in situ for

four days. Intravenous fluids and antibiotics were administered for five days. Clear fluids were started on fourth postoperative day and fluid diet was allowed on 5<sup>th</sup> postoperative day. Those patients who tolerated oral feedings were discharged from hospital on 6<sup>th</sup> postoperative day. The data was analyzed and necessary tests of SPSS were also applied.

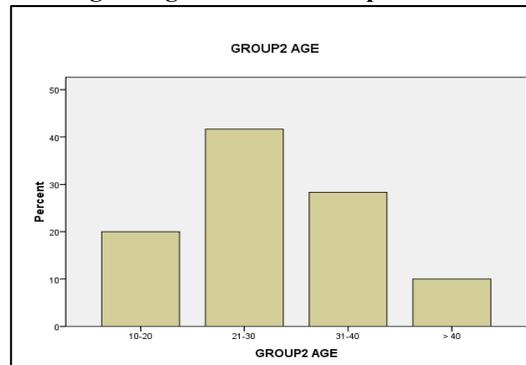
### RESULTS

120 patients underwent this study. Patients were randomly divided in two groups. Patients of group-1(n=60) had short stay hospitalization and group-2(n=60) patients were treated with conventional regime of postoperative care with fasting of 4-5 days. Demographically main bulk of the patients was in 4<sup>th</sup> decade of their lives. The age distribution of patients was by and large similar in group-1 and 2.(Figure ,1 A & B) The indications of ileostomy were also almost similar in two groups. Typhoid enteric perforation and abdominal tuberculosis were the two main indications, 64% patients of group-1 and 65% of group-2 patients suffered these diseases. (Figure, 2 A & B).

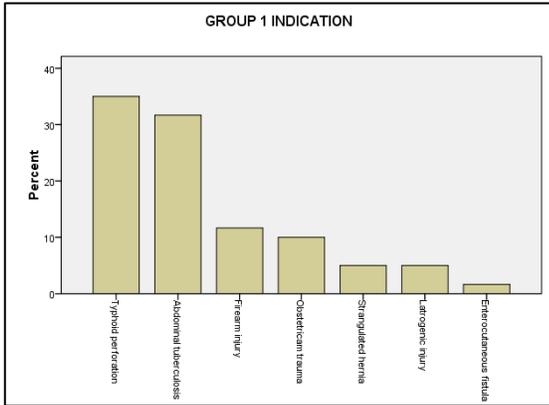
**Figure-1(A)**  
Showing the age distribution of patients in two groups



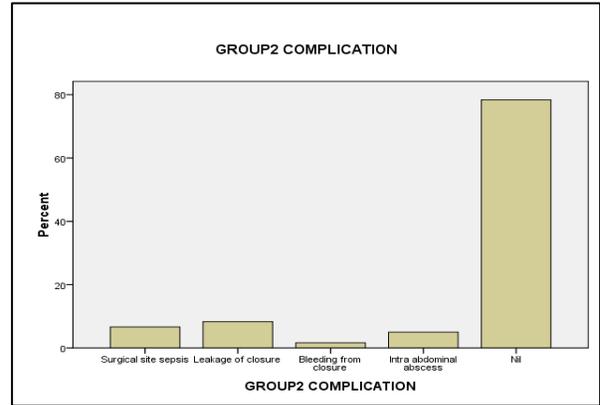
**Figure-1(B)**  
Showing the age distribution of patients in two groups



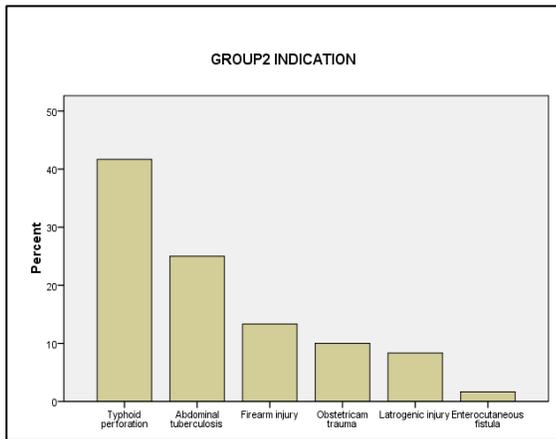
**Figure-2(A)**  
Showing indications of Ileostomy



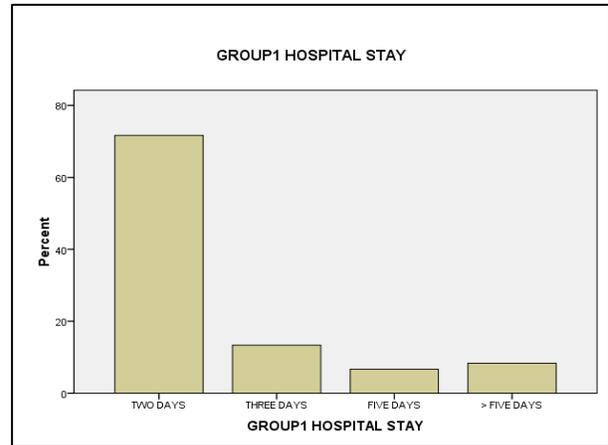
**Figure-3(B)**  
Showing postoperative complications



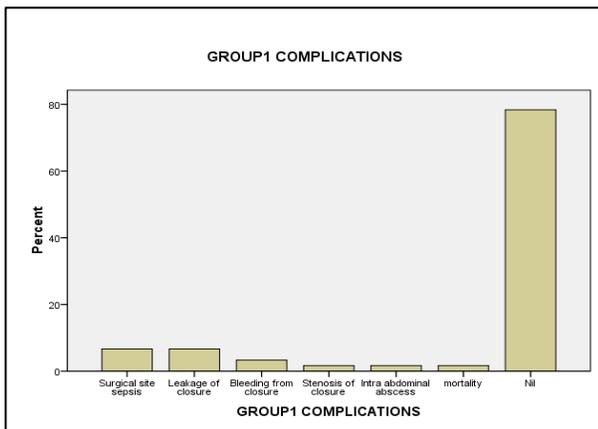
**Figure-2(B)**  
Showing indications of Ileostomy



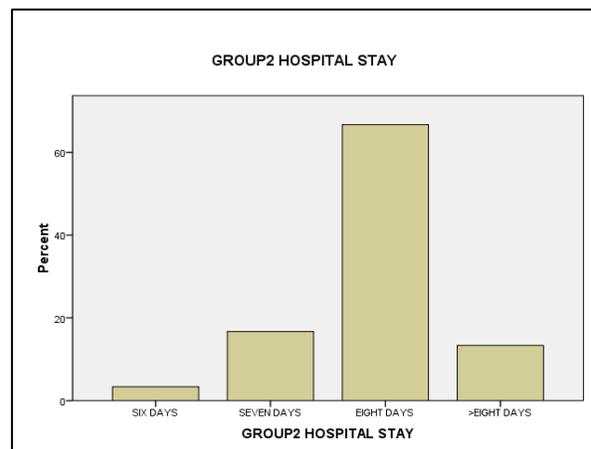
**Figure-4(A)**  
Showing total duration of hospital stay



**Figure-3(A)**  
Showing postoperative complication



**Figure-4(B)**  
Showing total duration of hospital stay



The other indications were extensive and unpredictable damage and sepsis due obstetrical trauma, firearm injuries and iatrogenic intestinal injuries during adhenolysis.

42 patients (70%) of group-1, tolerated early oral intake and were able to go home on first postoperative day with hospital stay of 2 days. On the other side in group-2, 66% of the patients were discharged on 6<sup>th</sup> postoperative day with hospital stay of 8days and 8 patients (13.3%) had hospital stay of more than 8days. (Figure ,4 A & B)

**Table-1**  
**Showing p- value of hospital stay of patients**

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.643 <sup>a</sup>	9	.674

**Table-2**  
**Showing p-value of postoperative complications**

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.954 <sup>a</sup>	24	.805

Statistical analysis ( Table-1) with Pearson Chi-square test gave p value of .674 (p=.674) which seems insignificant but percentage analysis of hospital stay, there is benefit of 6 days of less of hospital stay in majority of patients of group-1 series when compared to group-2 series patients. Regarding postoperative complication, leakage of the closure was the commonest postoperative complication in both groups. (Figure, 3 A & B) and incidence was almost similar with p value of. 805 (p=.805), (Table-2).The other complications were surgical site sepsis, bleeding from closure, stenosis of closure and intra abdominal abscess and percentage were also similar and compare able in two groups. One patient died in group-1 due to haemorrhage.

Statistically p value of hospital stay (p=.674) and postoperative complication (p=.805) ensures the safety and feasibility of short stay hospitalization in ileostomy reversal.

## DISCUSSION

Loop Ileostomy is a life saving procedure; not acceptable by patients and not likened by majority of the surgeons. The earliest stomas were actually fistulas that developed spontaneously following bowel perforation. First formal construction of colostomy was done by an innovative surgeon in 1787 in a neonate for imperforated anus<sup>3</sup>. First ileostomy was made in 19<sup>th</sup> century as a temporary measure in an obstructive lesion of ascending colon. Early ileostomies were at skin level and were associated with breakdown, severe skin excoriation and high morbidity and mortality.

In UK and USA operation of loop ileostomy is rarely required and is done to protect the distal anastomosis. In western world, more common is the end ileostomy and the usual indications are; Crohn's disease, ulcerative colitis, familial adenomatosis coli and complicated colon carcinoma. In our part of world, complicated typhoid enteritis and abdominal tuberculosis are the common indications of loop ieostomy<sup>4</sup>. In developed world, early reversal and short postoperative hospital stay is understandable because ileostomy was done just to protect the distal anastomosis otherwise small intestine was healthy. The general health of their population is superior. Safety of early discharge after loop ileostomy in their patients has established<sup>5,6,7</sup>.

Traditionally in our patients ileostomy reversal has required in-patient treatment with observation, intravenous fluids until return of bowel activity and control of pain. Conventionally patients are kept nothing by mouth for 4- 5 days. There has been fear that early oral intake would result in nausea, vomiting, abdominal distension which may lead to leakage from the closure of ileostomy. Now there is time to re- think about this philosophy and traditional perioperative fasting seems unnecessary<sup>8</sup>. Early feeding is defined as oral intake of fluid or food within first 24 after surgery regardless of the presence or absence of signs intestinal activity. In our 40% patient early oral intake was tolerated very well though there was no evidence of passing flatus or bowel sounds 6 hours after the reversal operation.

Encouragement, active and focused management of preoperative and postoperative period always results in enhanced recovery. Early mobilization, early permission to take oral diet leads short hospital stay<sup>9,10</sup>. Median length of hospital stay even in recent studies is

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8 days. 11 We were able to safely discharge from hospital on first postoperative day. This saved hospital cost and expenses. This period could have been further reduced as we admitted the patient a day before surgery. Our patients came from the adjacent districts and rural area. It was difficult for them to report on the day of operation and one day preoperative hospital stay was just due to the logistic reasons.

### CONCLUSION

Typhoid perforation and abdominal tuberculosis are the two common causes of loop ileostomy in our part of world. Majority of the patients were young. Seventy percent patients were able to go home on first postoperative day. Leakage of the closure was the commonest postoperative complication. Short stay hospitalization is safe and can be opted for reversal of loop ileostomy.

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