USEFULNESS AND SAFETY OF EARLY AGAINST DELAYED ORAL INTAKE AFTER APPENDECTOMY

Irfan Ali Sheikh, Irfan Shukr*, Rizwan Ullah Taj, Muhammad Waseem Anwar*****

Combined Military Hospital Rawalpindi, Pakistan, *Combined Military Hospital Rawalpindi, Pakistan, **Kingdom of Saudia Arabia, ***Pakistan Air Force Hospital Mianwali, Pakistan

ABSTRACT

Objective: To evaluate the usefulness and safety of early versus late oral intake after appendectomy.

Study Design: Randomized clinical trial.

Place and Duration of Study: Combined Military Hospital Multan from August 2008 to February 2009.

Material and Methods: One hundred patients with uncomplicated acute appendicitis, undergoing appendectomy under general anesthesia were included in the study and randomly divided into two equal groups. Early oral intake group (group A) was allowed fluids, when patients were out of effects of general anesthesia. Delayed fed (group B) was started oral fluids, on appearance of normal bowel sounds or passage of flatus. Low residue solid diet was started, after tolerance of oral fluids, in both groups.

Results: Early oral intake resulted in start of solid diet earlier by average 9 hours; these patients had normal bowel sounds, and passed flatus, earlier, after 4 hours and 5 hours as compared to late feeding group. Six (12%) patients had mild ileus in early fed group whereas 4(8%) patients in delayed fed group had mild ileus. Thirty eight (76%) early fed patients were very satisfied, as compared to 29 (58%) delayed fed patients. The hospital stay was prolonged by 2 days in delayed fed group.

Conclusion: Early oral feeding implemented after appendectomy is safe and effective, with a shortened hospital stay as the primary benefit in patients after appendectomy.

Keywords: Appendectomy, Early feeding, Patient satisfaction.

INTRODUCTION

The effect of early postoperative feeding is fast and early recovery. Its advantageous effects are reduced protein store depletion, improved wound healing, and helpful effect on psyche of patient[1]. There is concern that early post operative feeding after abdominal surgery, causes post operative ileus, nausea and vomiting, leading to aspiration, wound and anastomotic complications[2]. After appendectomy, traditional care regimens have usually included restricted oral intake. After 18 to 24 hours, oral fluids are allowed. Solid diet is permitted after patient passes flatus, has normal bowel sounds, or patient has tolerated fluids well[3].

Several concerns are anecdotal, rather than evidence based. The necessity for post operative starvation and late feeding has come under review. The clinical evidence for starting oral diet after abdominal surgery is passage of flatus or presence of bowel sounds. This led to traditional approach, in which postoperative oral intake is not started early, but with-held until the return of bowel function, confirmed by appearance of normal bowel sounds or passage of flatus. The management consists of 'nil by mouth', where patient receives fluids followed by solid diet, when tolerated.

The concern is that early oral intake will not be tolerated. It will result in accumulation of gasses and secretion, resulting in nausea, vomiting, aggravation of ileus, with consequent complications related to lung, wound, anastomotic site and sepsis. The effect will be decreased patient satisfaction, and prolonged hospital stay.

Standardized care pathways have shown potential advantage of an early feeding scheme with shorter hospital stay. Physiologically, it is useful in maintaining gut mucosal barrier integrity, mucosal structure and function and release of gut hormones and decreased septic complications[5].

Correspondence: Dr Irfan Ali Sheikh, Classified Surgeon, CMH Rawalpindi, Pakistan
Email: irfanalisheikh2003@gmail.com
Received: 18 Oct 2010; received revised: 19 Dec 2014; accepted: 24 Dec 2014

The objective of this study was to evaluate the usefulness and safety of early oral intake after appendectomy.

MATERIAL AND METHODS

This randomized clinical trial was carried out at Combined Military Hospital Multan from August 2008 to February 2009. One hundred patients were randomly divided into two groups. Average age of patients in group A was 34 years while in group B it was 35 years. Male / female ratio was 90 / 10%. The Alvarado score is a clinical scoring system used in the diagnosis of appendicitis. The score has 6 clinical items and 2 laboratory measurements with a total 10 points. Patients who had clinically acute appendicitis with ALVARADO score of 4 or more were included in the study. Patients who were children or elderly, with any comorbidity, with acute appendicitis of more than 48 hours duration, complicated acute appendicitis, and that in which incision other than right lower abdominal incision was used, were not included in the study. After the approval of ethical committee of the hospital, one hundred patients were included in the study. After obtaining informed consent, patients were randomly divided into two groups of 50 each i.e. "Early Fed Group–Group A", and "Delayed Fed Group–Group B". Appendectomy was done under general anesthesia, using right lower abdominal, Lanz or Grid Iron incision. Fluids were started in Group A, 06 hours after surgery, and in Group B, next post operation day, after confirming presence of normal bowel sounds. Solid diet was started in both groups, after passage of flatus by the patient. All patients were kept without oral diet for 6 hours before appendectomy. Intra venous Dextrose saline was started at rate of 30 drops per minute. Blood complete picture and urine examination were done. Injection cefuroxime 750 mg 8 hourly IV and injection metronidazole 500 mg 8 hourly IV were started. Appendectomy was done under general anesthesia. Post operatively antibiotics were stopped after 48 hours. Intravenous hydration was continued, if required. Diclofenac sodium 75 mg I.M was given 8 hours after operation, and repeated when patient asked for pain relief. Clear fluids were started in Group A, when patient was out of effects of general anesthesia. Clear fluids were started in Group B, after patient passed flatus or had normal bowel sounds. The diet was shifted to solid gradually when patients tolerated fluid diet. Intravenous hydration was continued till patient had solid meal without nausea. Post operative outcome measures were time for first drink, first solid meal, appearance

Table-1: Comparison of post operative outcome measures between the groups.

Outcome measures		Group A (Early Fed) (n = 50)	Group B (Late Fed) (n = 50)	
Time of enteral feeding	First drink(hours)	6 ± 1.56	28 ± 4.35	< 0.001
	First solid diet(hours)	23 ± 4.68	32 ± 5.94	< 0.001
Clinical evidence of bowel movement	Appearance of normal bowel sounds (hours)	22 ± 5.84	26 ± 6.72	0.002
	Passage of flatus (hours)	24 ± 5	29 ± 7	< 0.001
Ambulation (hours)		12 ± 2.95	24 ± 5	< 0.001
GIT symptoms	Nausea	7 (14%)	6 (12%)	0.766
	Vomiting	2 (4%)	0 (0%)	0.153
	Mild ileus	6 (12%)	4 (8%)	0.505
Patient satisfaction	Very satisfied	38 (76%)	29 (58%)	0.056
	Satisfied	12 (24%)	21 (42%)	
	Not satisfied	0 (0%)	0 (0%)	
Surgical site infection (n)		7 (14%)	6 (12%)	0.766
Hospital stay(Days)		2 ± 0.55	4 ± 1.2	< 0.001

of normal bowel sound, passage of flatus and ambulation. Other variables were time period of hospital stay, vomiting, mild ileus, and patient satisfaction. The time of surgery was taken as zero, for measurement of different time variables, except hospital stay. Hospital stay was defined as length of time between admission and discharge. Ileus was defined as abdominal distention with or without feeble bowel sounds, or inability to pass flatus for 24 hours. Patient satisfaction was measured using Likert scale[4].

Data were analyzed using SPSS version 15. Descriptive statistics were used to describe the results. Independent samples' t-test was applied for comparison of quantitative variables while chi-square test was applied or the comparison of qualitative variables between the groups. A *p*-value < 0.05 was considered as significant.

RESULTS

One hundred patients were registered in the study, fifty patients in each group. Average age of group A was 34.56 ± 3.41 years while in group B it was 35.74 ± 3.79 years. In group A, 90% were males while in group B 96% were males. Both the groups were comparable with respect to age ($p = 0.105$) and gender ($p = 0.436$). In group A, patients started solid diet 9 hours earlier than group B. In group A, patients had normal bowel sounds and passed flatus after 4 to 5 hours. Six (12%) patients had mild ileus in group A whereas 4(8%) patient in group B had mild ileus. Thirty eight (76%) patients in group A were satisfied with the treatment as compared to 29 (58%) patients in group B. The hospital stay was prolonged by 2 days in group B. (Table-I).

DISCUSSION

The controversial role of early post operative oral feeding after abdominal operations is being questioned. Many studies have shown that early oral feeding is safe and tolerated well by majority of patients after abdominal surgery, including gastrointestinal[6], colorectal[7] and gynecological surgery. Our study is in agreement with these studies. Even after gastrointestinal anastomosis, early oral feeding was well tolerated with early resolution of ileus, and decreased hospital stay[6]. The hospital stay was less in early fed group, in our study, because patients were ambulant, and taking oral feed earlier. Thirteen randomized controlled trials, with 1173 patients undergoing gastrointestinal surgery, showed that there was no statistical significance in post surgical complications in patients with early oral feed[8].

Twenty-three RCTs including 2784 patients receiving enteral or parentral nutrition were compared. Enteral nutrition was found more beneficial in the reduction of anastomotic dehiscence and duration of hospital stay. The risk of vomiting was increased among patients with enteral nutrition[6,9,10], but there was no significant difference in postoperative ileus, abdominal distention, time to presence of flatus, time to first passage of stools, post operative nasogastric placement, febrile morbidity, wound complications, or pneumonia[11,12]. In our study there was increased incidence of nausea, vomiting, early appearance of bowel sounds, and passage of flatus in Group A, but that was not statistically significant. Surgical site infection rate was similar in both groups. Patients were more satisfied in early fed group because they felt less thirsty, hungry and better without I.V. line, which affected their ambulation.

CONCLUSION

Early oral intake was demonstrated to be safe and effective, with a shortened hospital stay as the primary benefit in patients after appendectomy .

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

REFERENCES:

1. Pearl ML, Valea FA, Fischer M. A Randomised Controlled Trial of Early Post Operative Feeding in Gynaecological Oncology Patients Undergoing Intra abdominal Surgery. Obstet Gynecol 1998; 92: 94-7.
2. Reissman P, Teoh TA, Cohen SM, Is Oral Feeding Safe After Elective Colorectal Surgery? Ann Surg 1995;222: 73-7.
3. Horowitz IR, Rock JA: Post Anaesthesia and Operative Care. In: Thompson JD, Rock JA, et al. Eds. Telende's Operative Gynaecology. 8th Ed. Philadelphia: JB Lippincot 1997; *p.* 142-63.
4. Ben-David MF. Principles of Assessment. In:Dent JA, Harden RM, editors. APractical Guide for Medical Teachers. 2nd ed. Edinburg: Elsvier Churchill Livingstone 2005; *p.*282-292.
5. Dobb GJ. Enteral feeding. In: TE OH. ed. Intensive Care Manual. 4th Ed. Oxford 1997. Butterworth –Heineman;716-21.

6. Mazaki T, Ebiswa K. Entral versus parenteral nutrition after gastrointestinal surgery: a systematic review aand meta-analysis of randomized controlled trials in the English literature. J Gastrointest Surg. 2008 Apr; 12(4): 739-55. [cited on line]]cited on 2010 March 28] availableat: http://www.ncbi.nlm.nih.gov/pubmed/17939012?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_SingleItemSupl.Pubmed_Discovery_RA&linkpos=1&log$=relatedreviews&logdbfrom=pubmed.
7. El Nakeeb A, Fikry A, El Metwally. Early oral feeding in patients undergoing elective colonic anastomosis. Int J Surg. 2009; 7(3): 206-9.
8. Andersen HK, Lewis SJ, Thomas S. Early enteral nutrtrition within 24h of colorectal surgery versus later commencement of feeding for postoperative complications. Cochrane Database Sysst Rev. 2006 Oct 18;(4):CD004080. [cited on line] [cited on 2010 March 28] available at: http://www.ncbi.nlm.nih.gov/pubmed/17054196?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_SingleItemSupl.Pubmed_Discovery_RA&linkpos=2&log$=relatedreviews&logdbfrom=pubmed
9. Weng HQ, He XL, Li FX, Liu T, Wang PZ. Entral versus parentral nutrition after gastrointestinal surgery: a meta-analysis of randomized controlled trials. Zhonghua Wai Ke Za Zhi. 2009; 47(18): 1368-73.
10. Lewis SJ, Andersen, Thomas S. Early enteral nutrition within 24h of intestinal surgery versus later commencement of feeding: a systematic review and meta-analysis. J Gastrointest Surg 2009; 13(3):569-75.
11. Charoenkwan K, Phi;;ipson G, Valyavanich T. Early versus Delayed (Traditional) Oral fluids and food for reducing complications after major abdominal gynaecological surgey. Cochrane Database Syst Rev. 2007 Oct 17;(4):CD004508 [on line] [cited on 2010 March 28] availablefrom: http://www.ncbi.nlm.nih.gov/pubmed/17943817?ordinalpos=1&itool=PPMCLayout.PPMCAppController.PPMCArticlePage.PPMCPubmedRA&linkpos=5.
12. Marwah S, Godara MS, Goyal MS, Marwah N. Early enteral nutrition following gastrointestinal anastomosis. Internet J Gastroenterol 2008;7

.....