Fast Track Program for Bowel Surgery

Cindy Ward, MSN, RNC, CMSRN, ACNS-BC

Background

Post-Operative Ileus is a major health problem
Causes extended recovery time from surgery, increased morbidity, and longer hospital length of stay (Person & Wexner, 2006).
Post-operative ileus is a major cause of increased hospital length of stay in the United States, and is thought to add more than a billion dollars to direct health care costs (Miedema & Johnson, 2003).

Summary of Literature Review

Fast-track colon resection has been shown to decrease the hospital length of stay by 5 - 7 days. A combination of techniques is used to decrease ileus, including the use of epidural analgesia, avoiding the use of nasogastric tubes, avoiding fluid excess, early feeding, and laparoscopic surgery (Kehlet, 2006).

Purpose of the Study

Implement best practices to prevent the development of post-operative ileus after surgery.

Hypothesis

The implementation of a fast-track program for bowel surgery will result in decreased incidence of post-operative ileus and decreased length of stay.

Project Design

• Intervention research method
• Retrospective chart review on patient charts meeting the sample criteria.
• After the implementation of the fast-track intervention, concurrent charts of patients included in the program were reviewed.
• The results after the intervention were compared with the results before the implementation of the program.

Sample

Patients having any of the following procedures by two local Board certified surgeons:

- right hemicolectomy
- lysis of adhesions
- small bowel resection
- colectomy with colostomy
- closure of colostomy
- closure of ileostomy
- colectomy without colostomy
- low anterior resection.

Exclusionary Criteria

Length of surgery (greater than 4 hours, incision to close).
Greater than 3 co-morbidities such as:

- Hypertension
- Diabetes
- Coronary artery disease
- Chronic lung disease
- Cancer
- Cerebrovascular disease
- Obesity
- Renal failure

Results

	Traditional Care	Fast Track
Sample size	n = 24 (6 excluded)	n = 23 (3 excluded)
Procedure	R hemi-colectomy n = 12 Colectomy with anastomosis n = 4 Lysis of adhesions = 5 Small bowel resection n = 1 Colectomy with colostomy n = 1 Closure of colostomy n = 1 Low anterior resection = 0	R hemi-colectomy n = 9 Colectomy with anastomosis n = 7 Lysis of adhesions n = 2 Small bowel resection n = 0 Colectomy with colostomy n = 3 Closure of colostomy = 1 Low anterior resection = 1
Sex	Male n = 10 Female n = 14	Male n = 7 Female n = 16
Surgeon	Surgeon A n = 9 Surgeon B n = 15	Surgeon A n = 4 Surgeon B n = 19
Co-morbidities	m = 1.7	m = 2.21
Age	m = 60.91	m = 62.26

Selected References

Kehlet, H. (2006). Future perspectives and research initiatives in fast-track surgery. *Langenbecks Archives of Surgery, 391*, 495 - 498.
Miedema, B. W., Johnson, J. O. (2003). Methods for decreasing postoperative gut dysmotility. *The Lancet, 4*, 365 - 372.
Person, B. & Wexner, S.D. (2006). The management of postoperative ileus. *Current Problems in Surgery, 43*(1), 12 - 65.

Fast Track Orders

VITAL SIGNS
Every 4 hrs for 24 hours, then every shift
NUTRITION
Encourage patient to chew gum
◘NPO except for ice if NG tube present
□NPO until post nausea, then clear liquids with clear liquid supplement protein drink at each meal if no NG tube
□NPO until post nausea, then advance diet from clear liquids to regular as tolerated with protein drink at each meal
Protein drink with each meal
ACTIVITY
Dangle on side of bed times 1 on day of surgery
Out of bed to chair times 1 on day of surgery
Up to chair a minimum of tid starting in AM
Ambulate to BR with assistance prn
Ambulate in hall a minimum of tid starting in AM
Perform leg exercises every 2 hours while awake and every 4 hours at night
Turn every 2 hours while in bed
IV FLUID MANAGEMENT
Add Multivitamins to 1 bag of IV fluid daily for 2 days
□D5 ½ NS with 20 mEq KCl at _____ ml/hr until POD 2
□D 5 ½ NS at _____ ml/hr until POD 2
□Normal Saline at _____ ml/hr until POD 2
□Other fluid _____ at _____ ml/hr until POD 2
MEDICATIONS
Multivitamin 1 tablet oral daily starting POD 3
Ascorbic Acid (Vitamin C) 500 mg oral daily starting POD 3
PAIN MANAGEMENT
PCA Morphine 1:1, _____ continuous (0.5 - 1 mg/hr usual dose), _____ mg dose, 6 minute lockout, _____ mg 4 hour limit
Ketorolac (Toradol) 30 mg IV every 6 hours for 2 days
NAUSEA
Ondansetron (Zofran) 4 mg IV every 8 hours for 2 days
Promethazine (Phenergan) 6.25 – 12.5 mg IV every 4h prn
DRAINS
□Foley catheter to straight drainage
If no Foley present, scan bladder if unable to void in 8 hours. Catheterize if > 250 ml in bladder. Leave catheter in place if > 500 ml in bladder
□NG tube to low intermittent suction.
Once patient passes flatus, clamp NG tube and begin clear liquids. Reconnect NG to lo intermittent suction if the patient has vomiting or significant nausea
□Once patient has bowel movement, discontinue NG tube.
□If no NG present, insert NG for abdominal distention or uncontrolled nausea and vomiting.
PATIENT TEACHING
Review use of incentive spirometry.
Review activity expectations. Family members are encouraged to assist patient with ambulation.
Instruct patient how to splint incision.
Instruct patient and family in technique of getting out of bed.
Deep vein thrombosis prevention (ambulation, leg exercises, SCD's, anticoagulants.

Results

Variable	Traditional Care Mean/n	Fast Track Mean/n	*t*
Number of hours post-op until first up in chair	27.29 21	17.05 23	2.28*
Number of hours post-op until first ambulation	52.68 24	26.67 23	3.60*
Number of hours post-op until NG tube discontinued	86.34 12	35.88 3	1.50
Number of hours post-op until Foley catheter discontinued	73.27 24	35.37 20	3.49*
Number of hours post-op until first clear liquid meal	58.97 24	22.21 23	3.13*
Length of stay	165.00 24	132.57 23	1.69*
Number of times up in chair	10.58 24	15.00 23	1.49
Number of times walked	5.54 24	6.19 23	.97

*One-tailed test; $p<.05$

Note - One of the patients in the fast track program developed acute renal failure which required a four day stay in the medical intensive care unit.