BOWEL PREPARATION FOR COLOSTOMY REVERSAL IN CHILDREN

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Category: Health Outcomes / Services Research

Background
Pediatric bowel preparation protocols used before colostomy reversal vary with no identified standard of practice.

Objectives
The aim of this study is to determine the practices at our institution and evaluate the impact of bowel preparations on postoperative outcomes and hospital length of stay in children.

Methods
This was a retrospective review of children 18 years old or younger undergoing colostomy reversals at a free standing academic children's hospital between 12/2013-8/2017. Preoperative bowel regimens, hospital length of stay and post-operative complications were collected and analyzed using descriptive statistics, Wilcoxon Rank-Sum and Fishers Exact tests. Continuous variables are presented as median [IQR].

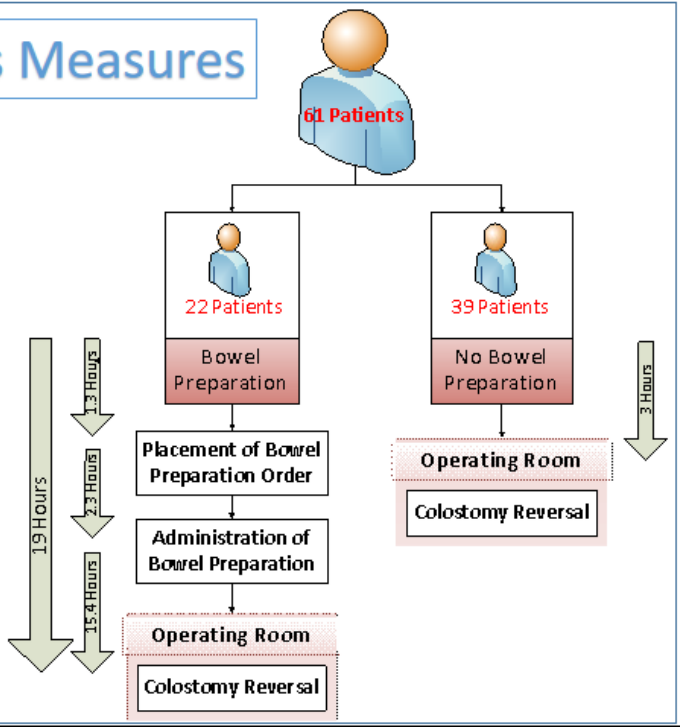
Results
61 children underwent colostomy reversal. 39 [64%] did not receive a pre-operative bowel preparation. Of the 22 [36%] who received a bowel preparation, 18 [82%] were admitted one-day prior surgery, 3 [14%] 2 days prior to surgery and 1 [5%] received a bowel preparation at home. The two cohorts were similar in age, gender and race. The most common indication for colostomy was anorectal malformation 38 [62%]. All patients undergoing bowel prep received Polyethylene glycol. Three of these [8%] required additional doses due to incomplete bowel preparation. No oral antibiotics were given. Time from admission to placement of bowel preparation order was 1.3 hours [0.7, 2.2] and it took an additional 2.3 hours [1.8, 4.0] till patients received their bowel preparations. Time from admission to surgery was longer in the bowel preparation group (19 hours [17, 23] vs 3 [2, 3]; $p<0.01$). However, hospital length of stay (6 [5, 8] vs 5 [4, 6]; $p=0.10$), complications (5 [23%] vs 7 [18%]; $p= 0.65$) and readmissions (1 [5%] vs 7 [18%]; $p=0.24$) were similar amongst both cohorts. Two patients had to return to the operating room. One patient returned to the operating room for dehiscence of the colonic anastomosis (bowel preparation group) and one for a drainage of an intra-abdominal abscess (non-preparation group).

Demographics & Pre-Operative Characteristics

	Bowel Prep (n=22)	No Bowel Prep (n=39)	P-Value
Age, median (IQR)	1.2 (0.7-5.4)	1.5 (0.5-6.8)	0.86
Gender, male	50% (11)	69% (27)	0.14
Bowel Preparation			.
Polyethylene glycol	100% (22)	0% (0)	
Sodium phosphate	5% (1)	0% (0)	
Indications for Colostomy			0.28
Imperforate anus/cloaca	59% (13)	62% (24)	
Hirschsprung's disease	14% (3)	10% (4)	
Bowel perforation	9% (2)	0% (0)	
Other	18% (4)	28% (11)	

Process Measures

Reasons for Treatment Delays
Difficulty placing nasogastric tube
Confusion regarding orders
Nasogastric tube pulled out prior to completion of MBP
Inadequate Preparation requiring additional bowel preparation



Discussion

There is substantial variation in the administration of pre-operative preparations in children undergoing colostomy reversals, with the majority of children not receiving a formal bowel preparation. Standardizing colostomy closure to eliminate bowel prep may decrease preoperative length of stay without increasing complications, although larger numbers and a prospective trial will be necessary to definitively answer this question.