

PREOPERATIVE BOWEL PREPARATION FOR COLORECTAL SURGERY

Purpose:

- To decrease the risk of postoperative morbidities:
wound infections, anastomotic leaks and deep abscesses
- Cultures most commonly reveal colonic flora pathogens
Anaerobes and Aerobes
- Therefore logical to decrease the fecal load and bacterial count in lumen and have therapeutic levels of appropriate antibiotics at the time of contamination

Components:

1. Mechanical Bowel Preparation

- Intended to reduce the amount of feces present/facilitate procedure
- Reduced chance of spillage/contamination - wound and peritoneal cavity
- Eliminates the proximal colonic stool column
preventing mechanical disruption of the anastomosis may attenuate the clinical sequela should anastomotic leak occur
- Facilitates palpation, enables intraoperative colonoscopy & laparoscopic manipulation

4 published randomized trials

Authors	Year	N	Wound		Intra-Abdom		Anastomotic	
			Prep	NoPrep	Prep	NoPrep	Prep	NoPrep
Brownson, et al	1992	179	5.8	7.5	9.3*	2.2*	12*	1.5*
Burke, et al	1994	186	4.9	3.4	NS	NS	3.7	4.6
Santos, et al	1994	149	24*	12*	NS	NS	10	5
Miettinen, et al	2000	267	4	2	2	3	4	2

NS- not specified; **Prep**- mechanical bowel preparation; **NoPrep**- without bowel preparation
 Figures are percentages unless otherwise specified
 p < 0.05

Agents Used

- **Isotonic solution** - 1973 - Hewitt et al
- **Mannitol** reduced the absorption of water that was associated with isotonic solution
Associated with dehydration and loss of electrolytes
Fermented by *E. Coli* to a potentially explosive gas
- **PEG** (polyethylene glycol - *Golytely*) osmotically balanced solution - associated with less electrolyte abnormalities.
Cons - 4 liters, salty tasting - N.N abdominal fullness and discomfort
- **Sodium phosphate** (*Fleets Phosphosoda*)- 90oc only

2. Antibiotic Prophylaxis

- Oral - neomycin and erythromycin (19, 12 and 7 hours prior to surgery)
Largely abandoned outside the US
- Systemic - aerobic and anaerobic

Zmora et al Dis Colon Rectum. 2001 Oct;44(10): 1537-49

Review:

- Sodium phosphate and polyethylene glycol
- Colorectal surgeons practicing in North America currently prefer sodium phosphate.
- Perioperative parenteral antibiotics
- Slightly lesser degree, preoperative oral antibiotic preparation
- Although some recent prospective, randomized studies have suggested that omission of mechanical bowel preparation for elective colorectal surgery is not only feasible but potentially preferable, caution is recommended before routinely omitting these widely practiced measures, because data to support such routine omission are limited.

Colonic trauma - primary anastomoses are done and are safe and effective

Guenaga et al Cochrane Database system - 2003 from Brazil

Meta-Analysis

- The results failed to support the hypothesis that bowel preparation reduces anastomotic leak rates and other complications.
- The routine use of mechanical bowel preparation in patients undergoing elective colorectal surgery is questioned.