

Diverting Ileostomy vs Colostomy in Colorectal Surgery: A Single Institution Outcomes Comparison

Nicholas Cairl, MD¹; Marianne Huebner, PhD²; Nivya Kolli, PhD³; Robert Cleary, MD¹

¹Department of Surgery, Trinity Health Ann Arbor Hospital, Ypsilanti, Michigan;

²Department of Statistics and Probability, Michigan State University, East Lansing, Michigan; ³Department of Academic Research, Trinity Health Ann Arbor, Ypsilanti, Michigan

Introduction: Diverting stomas often accompany total mesorectal excision (TME) for rectal cancer and for patients having anterior resection for complicated diverticulitis when the risk for anastomotic leak is increased. Diverting stomas are also an option to urgently relieve colonic obstruction from neoplasia or diverticular disease. The diverting stoma choice is often a loop ileostomy that increases the risk for acute kidney injury (AKI) or a diverting loop transverse that may be greater risk for stoma prolapse. The objective of this study is to determine if ileostomy or colostomy is a better diversion option when considering complications and outcomes on a dedicated enhanced recovery colorectal surgery service.

Methods: This is a single institution analysis of a prospectively maintained institutional colorectal surgery database between 01/01/2018 and 09/30/2023. The primary outcome was the postoperative 30-day complication rate after diverting ileostomy or colostomy. Secondary outcomes were AKI, stoma prolapse, other individual complications, and readmissions. Strength of association was estimated with multivariable logistic regression models adjusted for patient characteristics.

Results: 347 patients met inclusion criteria – 81 with a diverting colostomy and 266 with a diverting ileostomy. Patients undergoing diverting colostomy were older than those undergoing diverting ileostomy (64.2 +/- 14.5 years versus 59.1 +/- 13.9 years, $p=0.006$), had lower BMI (26.32 +/- 5.95 kg versus 27.66 +/- 6.39 kg, $p=0.028$), and had a higher incidence of diabetes (18.5% versus 10.2%, $p=0.043$). The overall complication rate was significantly higher for ileostomies (29.6% vs 59.8%, $p<0.001$) as was acute kidney injury (1.2% vs 16.2%, $p<0.001$), ileus (13.6% vs 35.7%, $p<0.001$), SSI III (2.5% vs 9.8%, $p=0.035$), ED visits (9.9% vs 24.4%, $p=0.005$), and readmissions (6.2% vs 18%, $p=0.009$). Stoma prolapse within 6 months (4.9% vs 0.4%, $p=0.003$), reoperation (7.4% vs 0.8%, $p<0.001$), and postoperative death (4.9% vs 0%, $p<0.001$) were significantly higher for the colostomy group.

Conclusions: Colostomies are associated with fewer complications and may be a better option for fecal diversion when there are no other factors that preclude this choice.