



Impact of perioperative nutritional support in patients undergoing major inflammatory bowel disease surgery: a nationwide analysis



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BACKGROUND

- Patients with inflammatory bowel disease (IBD) frequently require surgical intervention for management of complicated or severe disease.
- Up to 47% of Crohn's disease (CD) and 16% of ulcerative colitis (CD) patients undergo one or more surgical procedures in their lifetime.¹
- IBD is often associated with protein-calorie malnutrition (PCM)², which is a risk factor for poor postoperative outcomes.
- Evidence on the impact of perioperative nutritional support for this patient population remains equivocal.^{3,4}

OBJECTIVE

- To assess the impact of perioperative nutritional support on postoperative outcomes and complications in IBD patients with PCM.

METHODS

- Study design: retrospective propensity score-matched study using the Nationwide Readmissions Database from 2010-2018.
- Population: IBD patients with PCM who underwent intestinal surgery.
- Using propensity score matching, patients who received NS were matched with patients who did not receive NS based on:
 - age, sex, IBD subtype, Charlson Comorbidity Index, elective admission status, income, expected insurance coverage, teaching hospital status, urban/rural hospital locality, and PCM severity.
 - 1:1 matched using nearest-neighbor matching with caliper distance of 0.2
- Logistic regression and Kaplan-Meier survival analysis were used to compare postoperative outcomes;
 - 30-day readmission, infection, wound dehiscence, pneumonia, urinary tract infection (UTI), deep venous thrombosis (DVT), central-line associated bloodstream infection (CLABSI), and mortality.

RESULTS

- N=30,008 IBD patients with PCM who underwent intestinal surgery.
 - 15,306 patients received NS during the hospitalization and 14,702 controls did not receive NS
- NS was associated with lower odds of 30-day postoperative mortality (OR 0.73, p<0.01) but similar odds of 30-day readmission (OR 1.06, p=0.36).
- NS was also associated with increased rates of overall infection (OR 1.27, p<0.01), CLABSI (OR 2.21, p=0.001), and DVT (OR 1.28, p=0.01). No significant differences were identified in rates of wound dehiscence, pneumonia, or UTI.

Outcome variables	Odds Ratio	P-Value
30-Day Readmission	1.06	0.36
30-Day Postoperative Mortality	0.73	<0.01
Postoperative Infection	1.27	<0.01
Postoperative Wound Dehiscence	0.89	0.43
Postoperative Pneumonia	1.08	0.30
Postoperative Urinary Tract Infection	1.09	0.18
Postoperative Deep Vein Thrombosis	1.28	0.01
Central Line Associated Blood Stream Infection	2.21	<0.01

Table 1. Comparison of postoperative outcomes for IBD patients with PCM who received artificial nutritional support versus those that did not receive nutritional support.

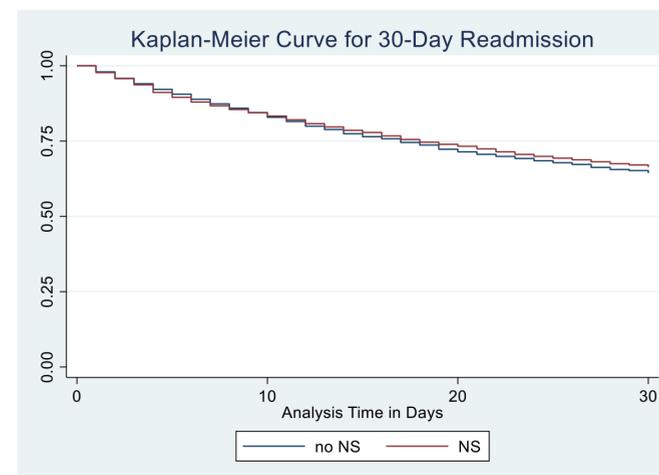


Figure 1. Kaplan-Meier curve for 30-day readmission for IBD patients with PCM who received artificial nutritional support (red line) versus those that did not receive nutritional support (blue line), HR=0.99, p=0.82.

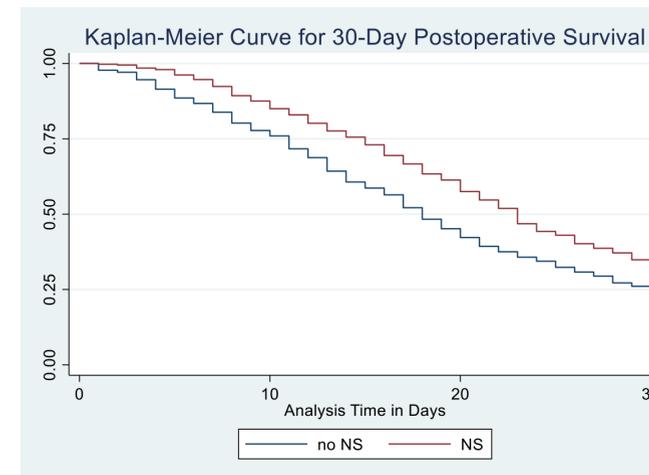


Figure 2. Kaplan-Meier curve for 30-day postoperative survival for IBD patients with PCM who received artificial nutritional support (red line) versus those that did not receive nutritional support (blue line), HR=0.82, p=0.005.

DISCUSSION

- Malnutrition is a well-known risk factor for adverse postoperative outcomes in all surgical patients.
- Optimization of nutritional status in IBD patients with PCM is recommended to mitigate postoperative complications.
- Key findings:
 - Utilization of NS in patients with IBD with PCM undergoing intestinal surgery was associated with lower 30-day mortality.
 - NS was associated with increased infectious complications and DVT.

CONCLUSION

- Our findings indicate that perioperative NS has mortality benefit for high-risk IBD patients, particularly when balanced against risks of other postoperative complications.

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