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“Preoperative Diabetes and HbA1c as Predictors of Post-Colectomy Outcomes in Inflammatory Bowel Disease”

Background: Inflammatory Bowel Disease (IBD) is among the most prevalent gastrointestinal disorders with rising incidence in recent decades. Given the chronic and progressive course of disease, surgical treatment is often employed for therapeutic and prophylactic purposes. Previous studies have linked diabetes with an increased risk for poor outcomes following colon surgery. The aim of our study was to evaluate the role of preoperative diabetes as well as preoperative HbA1C levels on the incidence of adverse postoperative outcomes in patients undergoing colectomy for the treatment of IBD.

Methods: We performed a retrospective analysis of patient data housed in the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database. Adult patients that underwent colectomy for Crohn’s disease or ulcerative colitis from 2017-2023 were included in the analysis cohort, leading to a total cohort size of 22,131 patients. The analysis cohort was then stratified by diabetes diagnosis and preoperative HbA1C levels, and a chi-square test was conducted to compare postoperative outcomes. A p-value <0.05 was considered statistically significant.

Results: From 2017-2023, patients with preoperative diabetes undergoing colectomy for IBD had significantly higher rates of occurrence for numerous postoperative outcomes, including length of hospital stay, surgical site infection, anastomotic leak, unplanned intubation, unplanned reoperation, pulmonary embolism, and organ dysfunction. Many of these associations remained significant following confounder-adjusted multivariate analysis. Similarly, higher HbA1c levels were independently associated with progressively higher rates of adverse postoperative outcomes. Interestingly, among diabetic patients, outcomes did not significantly differ by preoperative HbA1c status.

Conclusions: Given the high morbidity associated with IBD in conjunction with the prevalence of diabetes in the United States, it is critical to examine the interplay between these conditions when determining optimal management of each patient. Our study not only identified demographic subsets with higher diabetes prevalence among the IBD colectomy cohort but also pinpointed the postoperative outcomes associated with most profound risk. In addition, we found HbA1c as a strong predictor of outcomes, regardless of patient diabetes status; however, among diabetic patients, HbA1c status was not associated with differential outcomes. These findings are critical to accurately risk stratify surgical candidates preoperatively and emphasize the importance of both diabetes status and preoperative laboratory workup in tailoring treatments to reduce IBD-associated morbidity and mortality.