

Colonoscopy within 6 Months Before TKA May Be Associated with Increased Risk of Healthcare Utilization

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INTRODUCTION: Periprosthetic joint infection (PJI) is a rare but devastating complication. Many patients undergoing total knee arthroplasty (TKA) also need a colonoscopy, in which transient bacteremia may be a potential source for hematogenous PJI. Patients and surgeons must decide on an optimal time span or sequence for these 2 generally elective procedures, but no such guidelines currently exist. As such, we aimed to investigate the risk of PJI and other surgical complications following primary TKA in patients with a history of colonoscopy in the 6 months prior to surgery.

METHODS: A retrospective cohort study using an all-payer national database was conducted between 2010-2020 to identify adult patients who underwent primary unilateral TKA for osteoarthritis. Patients with <1 year of follow-up were excluded. Patients who underwent colonoscopy within 6 months preceding TKA were identified (n=25,291) and matched in a 1:1 ratio to TKA patients without such history using propensity score matching. Matching variables included age, gender, body mass index (BMI), smoking status, Elixhauser comorbidity index (ECI), hypertension, diabetes mellitus, chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), and cancer diagnosis. Standardized mean difference (SMD) was <0.1 for all matching variables, indicating balanced matching. Outcomes included the risk of PJI, sepsis, hematoma, superficial infection, wound disruption, reoperation, readmission, and emergency department (ED) visits within 90 days following surgery. Additionally, we examined the risk of PJI at 1 and 2 years following surgery. Regression analyses were performed accounting for age, gender, ECI, and obesity.

RESULTS: Upon multivariate analysis of 50,582 TKA patients with and without a history of colonoscopy in the 6 months before surgery, there were no statistically significant differences in the risk of PJI at 90 days (odds ratio [OR] 0.92, p=0.34), 1 year (OR 0.93, p=0.33), or 2 years (OR 0.98, p=0.74). Similarly, there were no significant differences in 90-day sepsis (OR 1.03, p=0.79), superficial infection (OR 1.15, p=0.06), hematoma formation (OR 1.18, p=0.18), or wound dehiscence (OR 1.07, p=0.42). However, patients with prior colonoscopy had slightly higher odds of ED visits within 90 days (OR 1.14, p<0.001), 90-day reoperations (OR 1.14, p<0.01), 1-year reoperations (OR 1.07, p=0.03), and 90-day readmissions (OR 1.12, p<0.01). Stratified analysis by timing of colonoscopy (0–2, 2–4, 4–6 months preoperatively) showed no significant difference in PJI risk compared to patients without colonoscopy (p>0.05).

DISCUSSION AND CONCLUSION: Colonoscopy within six months prior to TKA was not associated with an increased risk of PJI at 90 days, 1 year, or 2 years. However, a modest association was observed between colonoscopy and increased healthcare utilization. The underlying reasons for this association remain unclear. It is possible that patients undergoing preoperative colonoscopy represent a population with more complex medical needs or increased surveillance, but further investigation is warranted to better understand the potential contributing factors, such as patient selection or unmeasured confounders, that may be driving this pattern.