Impact of History of Uncontrolled Diabetes on Postoperative Complications Following Joint Arthroplasty

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INTRODUCTION: Patients with uncontrolled diabetes face a greater risk for complications after total joint arthroplasty (TJA). Achieving preoperative glycemic control preoperatively reduces this risk, but it remains unknown whether certain physiologic changes associated with uncontrolled diabetes lead to persistently elevated perioperative risk. The purpose of this study was to determine if there is a significant difference in 90-day complications following TJA between diabetic patients with or without a past history of uncontrolled diabetes.

METHODS:

We conducted a retrospective study of optimized patients with diabetes undergoing primary TJA from 2006-2019 at an urban tertiary care center. HbA1c data, comorbidity data, surgical date, and 90-day complications were collected via chart review. A diagnosis of diabetes was determined through medical record coding, and a past history of uncontrolled diabetes was defined by any HbA1c ≥ 8.0% prior to surgery or previous diagnosis of uncontrolled diabetes. Multivariate logistic regression was conducted to analyze the relationship between past history of uncontrolled diabetes and odds of experiencing infection, reoperation, readmission, and other postoperative complications within 90 days postoperatively.

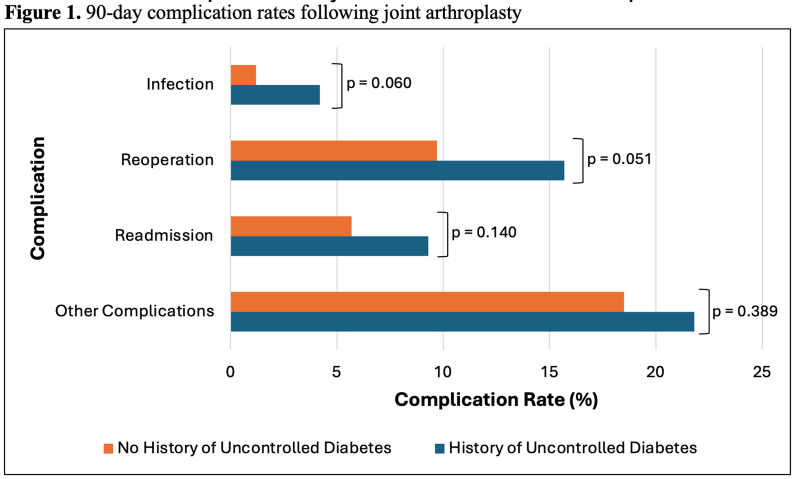
RESULTS:

Of the 464 optimized patients included in this study, 216 had a past history of uncontrolled diabetes. Patients with a past history of uncontrolled diabetes did not demonstrate statistically significant differences in odds of complications within 90 days of TJA, including surgical site infection (AOR 3.55; 95% CI 0.95–13.29; P = 0.060), reoperation (AOR 1.74; 95% CI 1.0–3.05, P = 0.051), readmission (AOR 1.71; 95% CI: 0.84–3.47; P = 0.140), and other medical or surgical complications (AOR 1.22; 95% CI: 0.77–1.92; P = 0.389) (Figure 1).

DISCUSSION AND CONCLUSION:

There was no significant difference in 90-day complications between patients with a past history of uncontrolled diabetes compared to patients with no history of uncontrolled diabetes. History of uncontrolled diabetes was not significantly associated with persistently elevated risk for complications after TJA if preoperative glycemic control is achieved.

Figure 1. 90-day complication rates following joint arthroplasty



No statistically significant differences in odds of complication were found between the two groups in any complication.