

Neil Blanchard – 2021 – RRD - Urinary Tract Infections Diagnosed within Two Weeks Prior to Shoulder Arthroplasty are Associated with Increased Postoperative Infection Rates

**Title:**

Urinary Tract Infections Diagnosed within Two Weeks Prior to Shoulder Arthroplasty are Associated with Increased Postoperative Infection Rates

**ABSTRACT**

**BACKGROUND:** While literature describing the increased risk of postoperative infection of patients undergoing lower extremity arthroplasty with a preoperative urinary tract infection (UTI) is inconclusive, this relationship is not well described for shoulder arthroplasty patients. The purpose of the present study was to (1) examine the association between preoperative UTIs and their timing with periprosthetic joint infection (PJI) following shoulder arthroplasty, and (2) determine if an antibiotic course prior to surgery will mitigate this risk.

**METHODS:** Patients undergoing primary shoulder arthroplasty diagnosed with a UTI in the preoperative period were identified in a national insurance database and separated into mutually exclusive groups based on 1-week intervals up to 6 weeks prior to surgery. Patients in each study cohort who received a preoperative antibiotic prescription for the UTI were then identified and separately analyzed. A matched control cohort without a preoperative UTI was analyzed for comparison purposes. The incidence of PJI within two years was then assessed for each cohort and compared using a regression analysis controlling for patient demographics and confounders.

**RESULTS:** Compared with matched controls, patients with a UTI diagnosed within 1 week of surgery (OR, 2.73; 95% CI 1.67-4.46;) and within 1 to 2 weeks of surgery (OR, 1.77; 95% CI 1.24-2.52) experienced significantly higher rates of PJI within 2 years of surgery. There were no significant differences in the incidence of PJI between patients diagnosed with a UTI greater than 2 weeks prior to surgery and matched controls. No significant differences were observed across all cohorts when comparing the incidence of PJI in patients who received an antibiotic prescription and those who did not.

**DISCUSSION and CONCLUSION:** Patients diagnosed with a UTI within 2 weeks prior to shoulder arthroplasty may be at an increased risk of postoperative PJI. Antibiotics do not appear to mitigate this increased risk. These results demonstrate the necessity for thoughtful timing of operative intervention.

**LEVEL OF EVIDENCE:** Level III; Retrospective case-control comparison using large database; prognosis study

**KEY WORDS:** Total shoulder arthroplasty, reverse total shoulder arthroplasty, periprosthetic joint infection, urinary tract infection