

## **Identifiable Risk Factors to Minimize Postoperative Urinary Retention in Modern Outpatient Rapid Recover Total Joint Arthroplasty**

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**Introduction:** Postoperative urinary retention (POUR) following total joint arthroplasty (TJA) ranges from 0 to 75% reflecting variations in the perioperative practices of TJA programs; study populations; and definitions, measurement, and treatment methods for POUR. Further, POUR presents a significant barrier to outpatient and early discharge TJA. This study examined the incidence and risk factors for acute POUR in patients discharged on the day of, or the day after, surgery in a modern, evidence-based care and coordination early discharge TJA program.

**Methods:** Prospectively recorded data on 620 consecutive primary TJAs discharged on the day of or the day after surgery were retrospectively reviewed. POUR was diagnosed by a perioperative internal medicine specialist whose practice focuses exclusively on TJA. Univariate analysis of potential predictors was performed, followed by binary logistic regression (BLR) testing of predictors with  $p=0.20$ .

**Results:** After exclusions for confounds the final analysis sample consisted of 613 procedures. The overall incidence of POUR was 4.2% ( $n=26$ ). Male sex, THA, history of urinary retention, use of neostigmine, and the absence of an indwelling catheter were associated with a higher prevalence of acute POUR and met criteria for entry into multivariate BLR. Seventeen additional predictors, including opioid spinals and outpatient surgery were unrelated to POUR. In the final BLR model, the probability of developing POUR in patients with a history of urinary retention, without an indwelling catheter, and who received neostigmine was 82.4%, which declined to 2.5% in the absence of these risk factors. All cases of POUR resolved, and there were no long-term complications.

**Conclusions:** Despite a relatively low incidence of 4.2%, patients with a history of POUR, the use of neostigmine by anesthesia should be carefully considered and potentially avoided in stand-alone ambulatory surgery centers.