



# Research Week 2021

## Association of Clinically Relevant Preoperative Urinary Symptoms with Postoperative Urinary Retention in Spinal Fusion Surgery Patients

Jason Brant BS, Stephanie Radoslovich BA, Spencer Smith BS, Alden Wyland BS, Jorge Walker MS, Rui Heng Chen BS, Lynn M. Marshall ScD, Jung U. Yoo MD

brantj@ohsu.edu

Oregon Health & Science University

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### Abstract

#### Background

Preoperative lower urinary tract symptoms (LUTS) are present in over 40% of elective spine surgery patients. Postoperative urinary retention (POUR) is an adverse complication that can occur after spinal fusion surgery. We determined the extent to which the risk of POUR after elective spinal fusion surgery was elevated among patients with LUTS when compared to those without LUTS.

#### Methods

A prospective cohort study was performed among adults undergoing spinal fusion surgery at OHSU between July 2017 and March 2020. To assess LUTS, patients completed the validated International Prostate Symptom Score (IPSS) at their preoperative visit, which is applicable for both sexes. POUR was defined as the insertion of a Foley or straight catheter between the time of anesthesia stop to admission discharge. The association of preoperative LUTS and risk of POUR was estimated with risk ratios (RR) and 95% confidence intervals (CI) from a multivariable Poisson regression with a robust variance estimation.

## Results

The analytic cohort included 456 patients: 160 undergoing cervical fusion and 296 undergoing lumbar fusion. Preoperative LUTS prevalence was 58% and 53% among patients undergoing cervical and lumbar fusion, respectively. In the cohort, 19 (9%) of 207 without LUTS and 36 (14%) of 249 with LUTS developed POUR and the unadjusted RR was 1.6 (95% CI: 0.9, 2.7). Adjustment for fusion location (cervical, lumbar), age, sex, and intraoperative Foley catheter use did not materially alter this association: the multivariable RR was 1.6 (95% CI: 0.9, 2.6).

## Discussion and Conclusion

Among patients undergoing spinal fusion surgery, those with preoperative LUTS had a 60% increased risk of developing POUR when compared to those without LUTS. However, the association was of borderline statistical significance. These results indicate that preoperatively screening this patient population for LUTS could identify those in need of attentive postoperative urinary care.