

Reduction of Urinary Retention and Readmission is Associated with Same-Day Ambulation After Lumbar Spine Surgery

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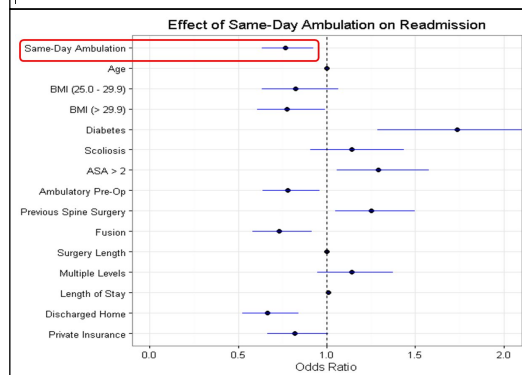
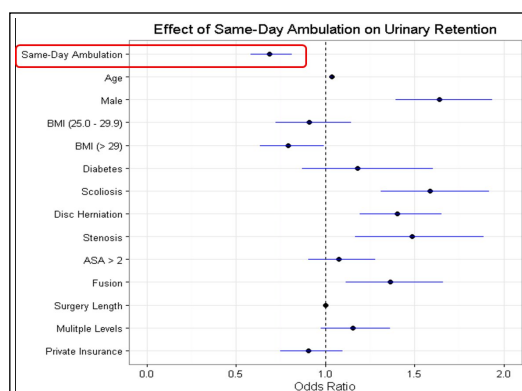


Introduction

Urinary retention (UR), readmission and surgical site infection (SSI) are important complications of spine surgery. The goal of the study was to identify modifiable factors that could be addressed to reduce these complications.

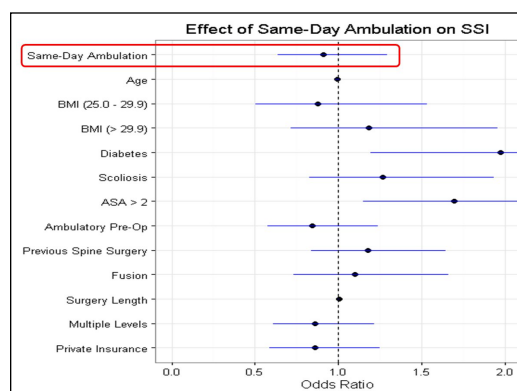
Methods

The Michigan Spine Surgery Improvement Collaborative is a hospital-based, surgeon-driven Collaborative Quality Initiative supported by Blue Cross Blue Shield of Michigan. Prospective data collection is performed on ~1000 lumbar and cervical surgeries per month for degenerative spinal disease across 27 hospitals. We examined contributing factors to UR, SSI and readmission within 90 days after surgery to identify areas of potential process improvement. Logistic regression was performed on data from lumbar surgery cases performed between Oct 2013 and Sept 2016, analyzing potential contributing variables suggested by surgeon experts. Day of surgery ambulation was identified as a potential predictor of decreased urinary retention and readmission. A Generalized Estimating Equation (GEE) Model was used to more rigorously examine this relationship, adjusting for confounding factors such as patient characteristics and

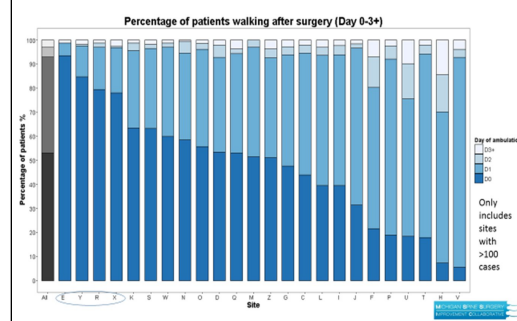


Results

Urinary retention was found in 1,139 out of 12,662 patients (9%) for whom UR data were available. 1,065 out of 12,649 patients (8%) were readmitted. SSI was found in 240 out of 12,647 patients (2%). Patients who ambulated on the day of surgery vs. those who didn't had an adjusted odds ratio of 0.78 (95% confidence interval: 0.66-0.92) of developing urinary retention and 0.80 (0.67-0.96) of readmission. The adjusted odds ratio for SSI was 1.00 (0.99-1.01).



Heterogeneity of day of ambulation after spine surgery



Conclusions

These data show that same-day ambulation is associated with significantly lower rates of readmission and UR, but not SSI, after surgery for lumbar degenerative disease. The heterogeneity of day of ambulation across hospitals suggest that earlier ambulation can be instituted. Future efforts will examine whether increasing early ambulation leads to a reduction in these complications.

Learning Objectives

Identify factors that predict urinary retention, surgical site infections and readmission after surgery for degenerative lumbar disease.

Describe potential interventions to improve surgical outcomes for degenerative lumbar disease

Acknowledgment

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