

The Effects of Opioid Use on Thromboembolic Complications, Readmission Rates and 90-Day Episode of Care Costs

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Introduction: There is a paucity in the literature evaluating whether patients with a history of opioid use disorder (OUD) are at a greater risk of developing thromboembolic complications following primary total hip arthroplasty (THA). Therefore, the purpose of this study was to investigate whether OUD patients are at greater odds than non-opioid use disorder (NUD) patients in developing: 1) thromboembolic complications; 2) readmission rates; and 3) costs of care.

Methods: International Classification of Disease (ICD-9) codes and Boolean command operators were used to identify all patients with a 90-day history of OUD prior to THA. Patients with a previous history of venous thromboembolism (VTE), deep vein thrombosis (DVT), pulmonary embolism (PE), and coagulation disorders were excluded. Patients were matched 1:4 to controls by age, gender, Elixhauser Comorbidity Index scores and high-risk medical comorbidities, yielding 33,161 total patients with (n=6,665) and without (n=26,596) OUD. Multivariate logistic regression analyses were performed to compare the risks of developing VTE (DVT and/or PE) 90-days following the index procedure, 90-day readmission rates, and total global 90-day episode of care costs.

Results: Patients with a history of OUD were found to be at greater risk for 90-day VTEs (2.72 vs. 1.13%; OR 2.45, 95% CI 1.90-3.17, $p<0.001$) compared to matched NUD patients. Specifically, OUD patients were at greater risk for both DVT (OR 2.55, 95% CI 1.93-3.38, $p<0.001$) and PE (0.84 vs. 0.25%; OR 3.33, 95% CI 1.99-5.57, $p<0.001$). Additionally, patients with OUD were at an increased risk for 90-day readmission (OR 1.27, 95% CI 1.17-1.38, $p<0.001$) compared to controls. Primary THA patients with OUD incurred a 15% higher cost of care (\$21,595.82 vs. \$18,807.14) compared to NUD patients.

Conclusions: These findings demonstrate that primary THA patients with a history of OUD are at greater risk for thromboembolic complications, readmissions and higher costs of care in the 90-day postoperative period.