Surgeon Modifiable Factors for Total Hip Arthroplasty with Inconsistent Quality Metric Performance

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INTRODUCTION:

Value-based reimbursement models assess clinical quality by risk-stratifying patients' medical and socioeconomic factors when determining outcomes. When making medical decisions, only certain patient/perioperative factors may be modifiable by the surgeon. This study evaluates surgeon modifiable factors associated with quality metric performance at a high-volume institution with extensive experience in alternative payment models.

METHODS:

We reviewed a consecutive series of 9,478 patients undergoing primary total hip (THA) from 2016-2021. Exclusion criteria were posttraumatic arthritis, oncologic disease, revision arthroplasty, incomplete one-year follow-up data. Modifiable factors included venous thromboembolism (VTE) prophylaxis, regional versus general anesthesia, tranexamic acid (TXA), body mass index (BMI), smoking status, alcohol or illicit drug use, cement use. Outcomes included complications, 90-day readmissions, HOOS MCID achievement one year postoperatively. Bivariate analysis determined variable association. Regression analysis determined likelihood of primary outcomes based on modifiable factors.

RESULTS:

A total of 3,562 of 9,478 (37.6%) THA patients met inclusion criteria and had complete one-year follow-up data. On bivariate analysis, TXA use was associated with greater HOOS MCID achievement (p=0.004). Regional anesthesia use (p<0.001) and TXA use (p=0.039) were associated with less postoperative complications. On regression analysis, TXA use had higher likelihood of HOOS MCID achievement (OR 1.43 CI 1.06=1.91; p=0.017) whereas cement use had less likelihood (OR 1.28 CI 0.37-0.92; p=0.017). Daily alcohol use had higher likelihood for THA postoperative complications (OR 2.42 CI 1.33-4.20; p=0.002), while higher BMI (OR 0.95 CI 0.92-0.99; p=0.011) and regional anesthesia use had less likelihood (OR 0.53 CI 0.36-0.77; p=0.001). Drug use had higher likelihood of readmission (OR 3.59 CI 1.0-10.56; p=0.04).

DISCUSSION AND CONCLUSION:

Certain modifiable patient and perioperative factors can significantly affect quality outcomes, including TXA, regional anesthesia use, alcohol and drug use. Factors for strong and poor performance were inconsistent among all metrics evaluated and analysis modality performed, however, and policy makers should take this into account.