Greater Readmission Rates after Total Hip Arthroplasty with Discharge to a Facility vs. Home: A Propensity Score Matched Analysis

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INTRODUCTION: Total hip arthroplasty (THA) is a common orthopaedic procedure performed in the United States, with over 2.5 million Americans estimated to be living with a prosthetic hip as of 2010. Considering the prevalence of hip replacement and related complications in the U.S., it is vital to patient care and costs to understand risk factors associated with such adverse events. Additionally, as one of the most commonly performed orthopedic procedures, attempts to maximize the safety profile while reducing patient costs are imperative to explore for this patient population. Given the higher costs associated with care facilities, discharge destinations should be carefully analyzed for their risks and benefits to aid patients in deciding where to start their postoperative recovery course. This study primarily aims to assess differences in postoperative complication rates, look at differences in readmission rates and reasons, and account for demographic differences that contribute to readmissions based on discharge destination within the first 30 days after surgery.

METHODS: Patients undergoing THA (27130) between 2015 to 2020 were extracted from the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database based on CPT codes. Propensity score matching was employed to account for demographic differences, and the short-term complication and readmission rates were compared between the three cohorts. Statistical analysis was defined as P < 0.05 throughout our analyses and was performed using one-way analysis of variance (ANOVA), Chi-square tests, and multivariable logistic regression.

RESULTS: 219,960 patients were identified with 189,841 discharged to home, 19,355 to a skilled nursing facility, and 10,764 to a rehabilitation facility. After matching, the rehabilitation and SNF cohorts both had significantly greater rates of readmission (6.9% vs. 6.88% vs. 4.56% for rehabilitation, SNF, and home respectively, p < 0.001), AAE (21.3% vs. 18% vs. 9.02%, p < 0.001), postoperative transfusion (13% vs. 10.7% vs. 4.14%, p < 0.001), UTIs (2.06% vs. 1.70% vs. 0.96%, p < 0.001), SSIs (2.14% vs. 1.88% vs. 1.46%, p = 0.04), return to the OR (4.18% vs. 3.72% vs. 2.2%, p < 0.001), and extended LOS (27.9% vs. 22.8% vs. 6.7%, p < 0.001) compared to discharges to home. Both the rehabilitation and SNF discharge groups showed greater rates of readmission for renal complications (0.14% vs. 0.12% vs. 0%, p = 0.04) and dislocations of a hip prosthesis (0.4% vs. 0.36% vs. 0.12%, p = 0.02) compared to home discharge. SNF patients showed higher rates of readmission for pulmonary embolism (0.24% vs. 0.06% vs. 0.1%, p = 0.03), pneumonia (0.34% vs. 0.14% vs. 0.1%, p = 0.01), SSI (1.26% vs. 1.02% vs. 0.72%, p = 0.02), and fever (0.08% vs. 0% vs. 0%, p = 0.02). The rehabilitation cohort demonstrated significantly higher rates of readmission for altered mental status (0.18% vs. 0.04% vs. 0.04%, p = 0.02) and falls (0.1% vs. 0.02% vs. 0%, p = 0.02) compared to the SNF and home cohorts respectively. Older age (odds ratio [OR]: 1.00, 95% confidence interval [CI]: 1.00-1.00), longer operative time (OR: 1.00, 95% CI: 1.00-1.00), ASA classification of 4 (OR: 1.09, 95% CI: 1.04-1.14), history of COPD (OR: 1.03, 95% CI: 1.01-1.05), history of bleeding disorder (OR: 1.03, 95% CI: 1.02-1.05), steroid use (OR: 1.03, 95% CI: 1.01-1.05), and smoking (OR: 1.02, 95% CI: 1.01-1.03) increased risk of readmission.

DISCUSSION AND CONCLUSION: Given that the results of this study demonstrate significantly higher risk of readmission and short-term complications in individuals discharged to facility care after matching for demographic variations, physicians and care teams should heavily consider the risks and benefits associated with their specific discharge plan for each patient. At present, our study identified that about 86% of patients in our subject pool were discharged to home, 9% to SNFs, and 5% to rehabilitation centers. Recent studies have begun to demonstrate that significantly higher costs of total joint arthroplasties are associated with discharge to non-home locations, especially in African American populations. In light of the number of patients recovering in non-home facilities, the elevated risks of complications, and the drastic increase in overall cost of non-home disposition, our study supports the notion of making every effort to discharge patients to their home. especially after an elective procedure.

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