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# Morbidity and Mortality Following Total Hip and Knee Arthroplasty with Spinal vs. General Anesthesia: A Retrospective Analysis

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## Introduction

Despite longstanding debate surrounding anesthesia in total joint arthroplasty, an optimal anesthetic mode has yet to be clearly identified. Patients undergoing total joint arthroplasty may be offered spinal anesthesia (SA) or general anesthesia (GA). Historically, GA was recommended for total hip and knee arthroplasty (THA, TKA); however, in more recent years, SA has become more popular, especially in elderly patients with comorbidities [1]. While the arthroplasty literature has reported differences in postoperative morbidity, the hip fracture literature does not demonstrate superiority of SA or GA [2-4]. The purpose of this study was to further investigate this relationship and determine if there is a significant difference in morbidity and mortality between patients undergoing SA compared with those undergoing GA during primary total hip and knee arthroplasty surgery.

## Materials and Methods

Patients undergoing primary total hip or total knee arthroplasty from February 2007 to February 2021 were retrospectively reviewed. From this population, two cohorts were created: GA (n = 2,154) and SA (n = 3,152). Readmission within 90 days, mortality within 365 days, and thromboembolic events in the postoperative 30 days were compared using logistic regression analysis. The multivariate model controlled for age, body mass index (BMI), and Charlson Comorbidity Index (CCI). As the case report is devoid of patient identifiable information, it is exempt from IRB review requirements as per (name of organization) policy.

IRB statement: As the cohort study is devoid of patient identifiable information, it is exempt from IRB review requirements as per Loyola University Chicago Stritch School of Medicine policy.

## Results/Case Report

There was no difference in the odds of 90-day readmission or pulmonary embolism (PE) between the groups. The GA group demonstrated higher odds of experiencing a deep venous thrombosis (DVT) within 30 days postoperatively in both bivariate (OR = 1.77; 95% CI: 1.24 to 2.52; P = 0.002) and multivariate (OR = 1.66; 95% CI: 1.01 to 2.71; P = 0.044) analyses. There was also a higher odds of mortality within 365 days postoperatively in the GA group in both bivariate (OR = 2.36; 95% CI: 1.36 to 4.21; P = 0.003) and multivariate (OR = 2.39; 95% CI: 1.00 to 5.79; P = 0.05)

logistic regression models.

## Discussion

Based upon this data, both spinal and general anesthesia are reasonable options for primary total joint arthroplasty with similar risk profiles. However, GA may be associated with a higher rate of DVT and mortality within the first year postoperatively when compared to their SA counterparts.

## References

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## Disclosures

No

## Tables / Images