

Comparison of Postoperative Outcomes Between Anesthetic Types Following Total Knee Arthroplasty: An ACS NSQIP Analysis 2008-2016

Introduction: Total knee arthroplasty (TKA) is an orthopedic procedure that is becoming more common within the aging U.S. population. Investigation of the postoperative impacts of epidural anesthesia in patients undergoing TKA is lacking. This study therefore compares 30-day postoperative outcomes between epidural anesthesia and spinal or general anesthesia.

Methods: The ACS NSQIP database was queried via the CPT code for TKA (27447) performed between 2008 and 2016. These procedures were then categorized based on isolated general, spinal, or epidural anesthesia utilization. One-to-one propensity score matching was performed while controlling for estimated probability of morbidity, age, and gender. Univariate and multivariate logistic regression models were used to explore the association between anesthetic type and adverse postoperative outcomes.

Results: Between 2008 and 2016, 225475 patients underwent TKA. After propensity score matching, 1146 patients from each anesthetic group were selected. Epidural anesthesia was associated with increased length of hospital stay and operative time compared to both general and spinal anesthesia. There were no differences in adverse events, postoperative complications, readmission, re-operation, or mortality compared to general anesthesia. Univariate and multivariate analysis showed that compared to spinal anesthesia, epidural anesthesia was a risk factor for adverse events, any postoperative complication, and wound complications, particularly bleeding requiring transfusion.

Conclusion: Epidural anesthesia is associated with a variety of complications, including increased length of hospital stay and operative time, increased adverse events, any postoperative complication, and wound complications. Further research is needed to elucidate the impact of epidural anesthesia on these outcomes following TKA.