

**General Anesthesia Versus Spinal Anesthesia In Lower Limb Amputations: An ACS-NSQIP Analysis 2008-2016**

Lower limb amputations (LLAs) can be done with general (GA) or spinal anesthesia (SA). We used the American College of Surgeons National Surgical Quality Improvement Project (ACS-NSQIP) to study whether the type of anesthesia, GA or SA, can impact thirty-day post-op outcomes in those undergoing LLAs.

We created a retrospective cohort with 2008-2016 ACS-NSQIP database. Patients were selected using CPT codes. Demographics, comorbidities, anesthesia, and amputation type were obtained. Age, gender, race, BMI, functional status, ASA class were collected along with preoperative hematocrit, platelet count, PTT, creatinine, and albumin. Cases with both GA and SA and/or with incomplete data were excluded. Univariate comparisons of cohort characteristics were performed. Multivariate logistic and Poisson regression controlling for variables in the univariate testing phase were used to identify GA or SA as risk factors for adverse postoperative outcomes.

We identified 32070 patients. GA compared to SA was associated with a lower incidence rate ratio of hospital stay (13.0 vs. 14.7 days; IRR: 0.9; 95% CI 0.9-0.9;  $p < 0.001$ ) and longer operative time (67.7 min vs. 63.7 min,  $p < 0.001$ ). Those who underwent GA had higher risks for wound complications (OR, 1.3, 95% CI, 1.2-1.5;  $p < 0.001$ ), pulmonary complications, (OR, 1.5, 95% CI, 1.2-1.8;  $p < 0.001$ ), cardiac complications (OR, 1.4, 95% CI, 1.1-1.8;  $p = 0.016$ ), sepsis-related complications (OR, 1.3, 95% CI, 1.1-1.6;  $p = 0.006$ ), readmission (OR, 1.4, 95% CI, 1.1-1.7;  $p = 0.003$ ) and reoperation (OR, 1.8, 95% CI, 1.3-2.4;  $p < 0.001$ ). GA patients were less likely to have CVA (OR, 0.5, 95% CI, 0.3-0.9;  $p = 0.014$ ). There was no difference in 30-day post-operative mortality (OR, 1.0, 95% CI, 0.8-1.2,  $p = 0.858$ ).

SA was associated with increased hospital stay and risks of stroke while GA with increased operative time, readmission, reoperation, and risks of post-operative complications. More research is required to clarify the cause and impact of outcomes.