

Impact of ESRD on Postoperative Outcomes of Lower Extremity Amputations: An ACS NSQIP Analysis 2008-2016

Introduction: Patients with end stage renal disease (ESRD) display higher rates of lower extremity amputations. This study aims to address the post-operative impact of ESRD on lower extremity amputations.

Methods: The American College of Surgeons National Surgical Quality Improvement Program database was queried via CPT codes between 2008 and 2016 for patients undergoing lower extremity amputations. Patients were then categorized as with or without ESRD, defined as having a GFR \leq 15 in addition to concurrently undergoing dialysis. 1:1 propensity score matching controlled for age, gender, and estimated probability of morbidity. Univariate analysis and multivariate logistic regression models were used to analyze ESRD and risk factors for postoperative complications.

Results: Using multivariate logistic regression, ESRD was found to be an independent predictor of higher risk for any adverse event (OR 1.2 [1.1-1.3]), particularly unplanned intubation (OR 1.4 [1.2-1.7]; $p=0.001$) and cardiac complications (OR 1.7 [1.4-2.0]; $p<0.001$), but lower risk for renal complications (OR 0.3 [0.2-0.4]; $p<0.001$) (Table 2). Patients with ESRD were at higher risk for readmission (OR 1.4 [1.2-1.6]), reoperation (OR 1.4 [1.1-1.6]), and mortality (OR 1.7 [1.5-2.0]) (all, $p<0.001$) (Table 2).

Conclusion: ESRD has been implicated in several post-operative complications including intubation and cardiac complications. These complications warrant further investigation, alongside an increased level of caution when operating on patients with ESRD to ensure that optimal peri- and post-operative care is provided.