

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

Introduction: Individuals undergoing lower extremity amputations (LEA) have a higher prevalence of congestive heart failure (CHF) than the general population and CHF is associated with worse post operative outcomes. Thus, it is important to understand how CHF impacts post operative outcomes for LEA patients.

Methods: The National Surgical Quality Improvement Program (NSQIP) database was retrospectively queried between 2008 and 2016 for LEA patients including foot and below and above the knee amputations. Patients were split into two groups by CHF status and 1:1 propensity score matched by age and gender. Demographics, co-morbidities, and 30-day post-operative outcomes were analyzed between both groups. Univariate and multivariate logistic regression controlling for age, gender, and morbidity was utilized to determine if CHF is an independent risk factor for adverse postoperative outcomes.

Results: A total of 60 patients with LEAs were propensity score matched (30 CHF, 30 non-CHF). Both CHF and non-CHF cohorts had similar demographics and estimated probabilities of morbidity and mortality (all $p < 0.05$). Post-operatively, CHF and non-CHF patients had similar rates of adverse events, postoperative complications, readmission, and re-operation (all, $p > 0.05$). CHF patients experienced significantly greater rates of mortality after LEA than non-CHF patients (30.0% v 3.3%, $p = 0.006$). Univariate (OR 12.4 [1.5-105.7]; $p = 0.021$) and multivariate (OR 11.8 [1.3-104.6]; $p = 0.027$) logistic regression determined CHF is an independent predictor of post-operative mortality.

Conclusion: CHF can be an independent predictor of mortality post LEA. Surgeons must understand the risks associated with CHF in LEA candidates.