

**Effects of Having End-Stage Renal Disease on Post-Operative Outcomes of Primary Shoulder Arthroplasty Patients**

Authors: Tahir Ramzan<sup>1</sup>, Elver Ho<sup>1</sup>, Mohamed Hamzane<sup>1</sup>, Ryan Kong<sup>1</sup>, Juhayer Alam<sup>1</sup>, Marc Ganz<sup>1</sup>, Vidushan Nadarajah<sup>1</sup>, Louis Day<sup>1</sup>, William R. Aibinder<sup>1</sup>

Author Affiliations: <sup>1</sup>The State University of New York Downstate Health Sciences University, Brooklyn, NY, USA

Objective: To characterize incidence rates and postoperative outcomes between end-stage renal disease (ESRD) patients and a control cohort undergoing primary shoulder arthroplasty surgery.

Summary of background data: ESRD is a medical condition in which a person's kidneys permanently cease functioning. The impact of having ESRD on postoperative outcomes of patients undergoing PSA surgery is poorly understood.

Methods: The National Inpatient Sample was queried to identify patients who underwent PSA (ICD9: 8180, 8181, 8188) from 2005 – 2012. Patient demographics and incidence rates of patients with ESRD were reported. 1:1 propensity score- match controlling for age, sex, race, and obesity status was performed. Univariate analysis was used to compare differences in postoperative complications, revision of shoulder arthroplasty (ICD9: 8197) and in-hospital mortality, in the ESRD cohort. Multivariate logistic regression analysis controlling for age, sex, and obesity status was performed.

Results: The average incidence rate of patients with ESRD from 2005 – 2012 was 0.9 per 1,000,000 person-years. Incidence rates of ESRD patients increased by 15.9% from 2005 – 2012. Patients with prior ESRD diagnosis who underwent PSA were at increased risk for postoperative surgical complications (OR=4.1), fracture non-unions (OR=24.4), transfusions (OR=4.2), and medical complications (OR=4.1) (Table 1).

Conclusions: ESRD patients who undergo PSA experienced higher rates and increased risk of certain postoperative surgical and medical complications. These findings should be taken into consideration in ESRD patients to optimize these patients prior to PSA surgery.