

Effect of End-Stage Renal Disease on Postoperative Outcomes of Adult Laminectomy Patients

Introduction: ESRD is a medical condition in which a patient's kidneys cease functioning leading to the need for long-term dialysis or kidney transplantation. The impact of ESRD on postoperative outcomes of adult patients undergoing laminectomy surgery is poorly understood.

The objective of this study is to characterize incidence rates of end-stage renal disease (ESRD) in adult laminectomy patients and compare postoperative outcomes between those with ESRD and a control cohort.

Methods: The National Inpatient Sample was queried to identify patients who underwent laminectomy surgery from the years 2005–2012. Patient demographics and incidence rates of patients that have had ESRD were reported from the years 2005–2012. A cohort of 912 ESRD patients and 912 non-ESRD patients (61.6 vs 62.0 years) were identified. Univariate analysis was used to compare differences in postoperative complications and in-hospital mortality in the ESRD cohort. Multivariate logistic regression analysis was performed to determine ESRD status as an independent risk factor for postoperative outcomes between the two cohorts.

Results: The average incidence rate of patients who had ESRD from 2005–2012 was 4.4 (95% CI: 3.3–5.5) per 1,000,000 person-year. Incidence rates of ESRD patients increased by 60.1% from the years 2005 – 2012. ESRD patients who underwent a laminectomy procedure experienced higher rates of overall surgical and medical complications and in-hospital mortality, compared to the control group (all, $p < 0.05$). Patients with prior ESRD who underwent laminectomy were at increased risk for postoperative surgical and medical complications and in-hospital mortality.

Conclusions: Adult patients with ESRD who underwent laminectomy experienced higher rates of surgical and medical complications. These findings should be taken into consideration in ESRD patients to optimize them prior to laminectomy surgery and to prepare providers for such potential complications in the postoperative period.