

## 30-day Morbidity and Mortality After Subdural Hematoma Evacuation in Patients with End-Stage Renal Disease

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### Introduction

The purpose of this study is to investigate 30-day outcomes of subdural hematoma evacuation in patients with end-stage renal disease (ESRD) requiring hemodialysis.

### Methods

The American College of Surgeons National Surgical Quality Improvement Program database (2012 – 2014) was queried. We included adult patients who underwent subdural hematoma evacuation, and compared 30-day outcomes (including readmissions, reoperations, morbidity, and mortality) between patients with dialysis requirement and no dialysis requirement (controls).

### Results

A total of 1,047 cases were identified, with 43 patients in the ESRD group (4.1%). The 30-day readmission rate was 4.7% and 7.5% for patients with ESRD and controls ( $p=0.488$ ); the 30-day reoperation rate was 7.0% and 9.7% for cases and controls ( $p=0.558$ ); the 30-day morbidity rate was 46.5% for patients with ESRD and 24.7% for controls ( $p=0.001$ ); and the 30-day mortality rate was 44.2% vs. 14.0% for patients with and without ESRD, respectively ( $p<0.001$ ). On multiple logistic regression analysis, ESRD was an independent predictor of 30-day mortality (OR 3.54; 95% CI, 1.83 – 6.83;  $p<0.001$ ), but not for 30-day complications (OR 1.68; 95% CI, 0.87 – 3.23;  $p=0.118$ ).

### Conclusions

The findings of the present study suggest that for patients with ESRD who develop subdural hematomas requiring evacuation, the 30-day mortality rate is 3.5 times higher when compared to patients without ESRD.

### Learning Objectives

1. Understand 30-day outcomes after subdural hematoma evacuation in patients with end-stage renal disease

### Operative characteristics and 30-day outcomes

Variable	No ESRD	ESRD	p-value
Number of cases	1,004	43	
Operative time	1.5 ± 0.8	1.7 ± 0.9	0.274
Length of stay	11.1 ± 10.7	14.1 ± 16.2	0.235
30-day readmission (%)	7.5	4.7	0.488
30-day reoperation (%)	9.7	7.0	0.558
Major complication (%)	24.7	46.5	0.001
Intraoperative arrest (%)	0.2	0.0	1.00
Coma (%)	2.2	3.0	0.536
Stroke (%)	2.3	4.7	0.274
PE (%)	0.5	0.0	1.00
Cardiac arrest (%)	1.2	7.0	0.021*
Myocardial infarction (%)	1.6	2.3	0.513
Sepsis (%)	4.1	7.0	0.421
Septic shock (%)	1.9	2.3	0.571
Prolonged ventilation (%)	16.8	27.9	0.060
Reintubation (%)	7.2	14.0	0.097
Deep SSI (%)	0.2	0.0	1.00
Organ space SSI (%)	0.2	0.0	1.00
Mortality (%)	14.0	44.2	<0.001*

\*Indicates statistical significance