

**TITLE: End-Stage Renal Disease is Associated with Increased Inpatient Mortality in Patients Admitted for Atrial Fibrillation: Analysis of the National Inpatient Sample.**

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**Introduction**

End-stage renal disease (ESRD) has been shown to affect different heart pathologies through its underlying pathogenesis of unabating chronic inflammation. Our study sought to estimate the impact of ESRD on clinical outcomes of hospitalizations for atrial fibrillation (AF) using a national database.

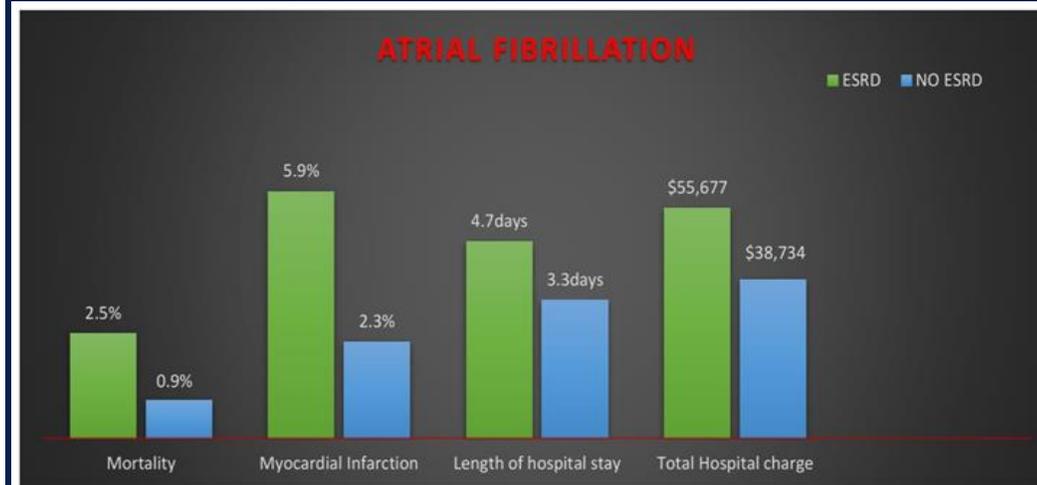
**Methods:**

We queried the National Inpatient Sample (NIS) 2016 and 2017 database. The NIS is the largest inpatient hospitalization database in the United States. The NIS was searched for hospitalization of adult patients with AF as a principal diagnosis with and without ESRD as a secondary diagnosis using ICD-10 codes. The primary outcome was inpatient mortality, while the secondary outcomes were length of hospital stay (LOS), total hospital cost (THC), and Myocardial infarction (MI). Multivariate logistic and linear regression analysis was used accordingly to adjust for confounders.

ATRIAL FIBRILLATION						
OUTCOMES	ESRD N = 20,744	NO ESRD N = 800,884	OR*	IRR**	95% CI	p-value
Mortality	2.5%	0.9%	1.74	N/A	1.39-2.16	0.004
Myocardial Infarction	5.9%	2.3%	1.31	N/A	1.12-1.52	0.0001
Length of Stay	4.7 days	3.3 days	N/A	1.09	1.05-1.13	0.0001
Total hospital charge	\$55,677	\$38,734	N/A	1.16	1.11-1.22	0.0001

OR\* = adjusted odd ratio. IRR\*\* = Adjusted incidence rate ratios. CI = Confidence interval

\*/\*\* Adjusted for age, sex, hospital characteristics (teaching status) and Elixhauser comorbidities [cardiac arrhythmias, valvular disease, pulmonary circulation disorders, peripheral vascular disorders, hypertension complicated, paralysis, neurological disorders, chronic pulmonary disease, diabetes complicated, hypothyroidism, renal failure, liver disease, peptic ulcer disease, AIDS/HIV, lymphoma, metastatic cancer, solid tumor without metastasis, collagen vascular diseases, Coagulopathy, obesity, weight loss, fluid and electrolyte disorders, anemia, alcohol abuse, drug abuse, psychosis and depression.



**Results:**

821,629 patients were admitted for AF; 2.5% (20,744) had underlying ESRD. Cohorts with ESRD vs No ESRD had a mean age of 67.4 years [CI 67.0 - 67.8] vs 70.9 years [CI 70.8 - 71.0]; male (51.6% vs 48.4%) and female (48.4% vs 51.6%). Compared to patients without ESRD, patients admitted with ESRD had a statistically significant increase in mortality (2.5% vs 0.9%, P<0.0001) and MI (5.9% vs 2.3%, P= <0.0001). ESRD also had greater LOS (4.7 days vs 3.3 days, P<0.0001) and THC (\$55,677 vs \$38,734, P<0.0001).

**Conclusions:**

In conclusion, ESRD is associated with increased mortality, LOS, THC, and MI in patients hospitalized with AF. Early kidney transplant in patients with concomitant AF may be needed to improve outcomes.

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No disclosures.