

The Impact of Acute Kidney Injury on In-Hospital Morbidity and Mortality Among Patients With and Without Baseline Chronic Kidney Disease

Mira T. Keddiss, M.D., Sahil Khanna, MBBS, Qi Qian, MD



Background

- Acute kidney injury (AKI) is a well recognized risk for chronic kidney disease (CKD) and short and long term mortality.
- CKD patients are at high risk for increased in-hospital morbidity and mortality and worse long term outcomes.
- Whether or not a history of prior CKD modifies the hospital course and short and long term outcomes of patients with AKI has been previously evaluated but with conflicting results.

Objectives

- Evaluate the prevalence of AKI over a 5 year period
- Examine AKI associated morbidity and mortality in a large cohort of hospitalized patients with and without CKD using the National Hospital Discharge Survey database

Methods

- The National Hospital Discharge Survey (NHDS) is a national probability survey conducted annually and collects hospital discharge information from non-federal short-stay hospitals (< 30 days) in the United States.
- NHDS database includes International Statistical Classification of Diseases, Clinical Modification (ICD-9-CM) diagnosis codes, procedures, demographics, admission and dismissal types, length of stay, and in-hospital mortality.
- The database for 2005-2009 was converted to JMP file using Statistical Analysis Software (SAS) and analyzed using chi-square test of independent and t-test. Alpha error rate set at 0.05.

Fig 1. Distribution of AKI-CKD & AKI-NoCKD

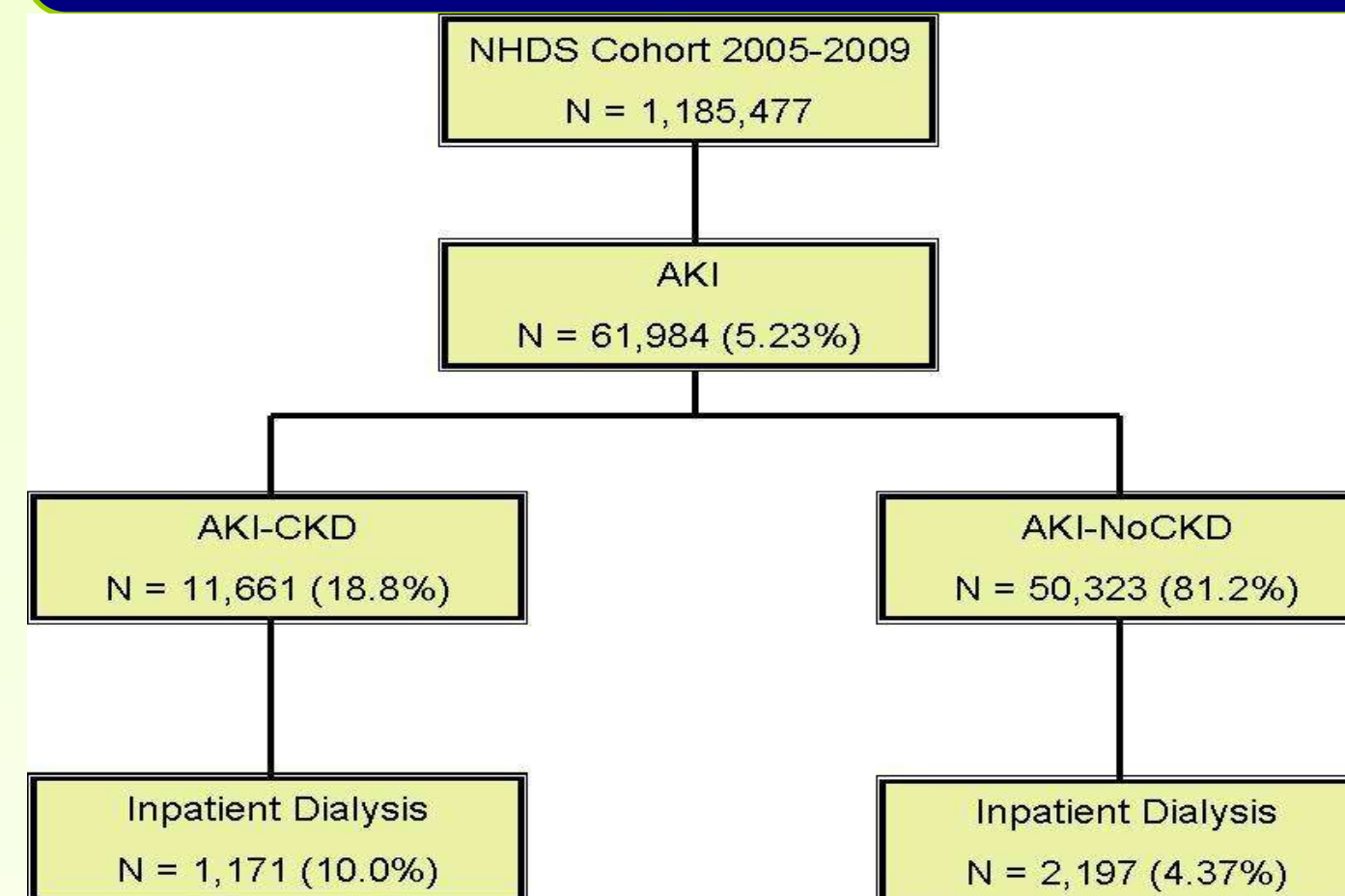


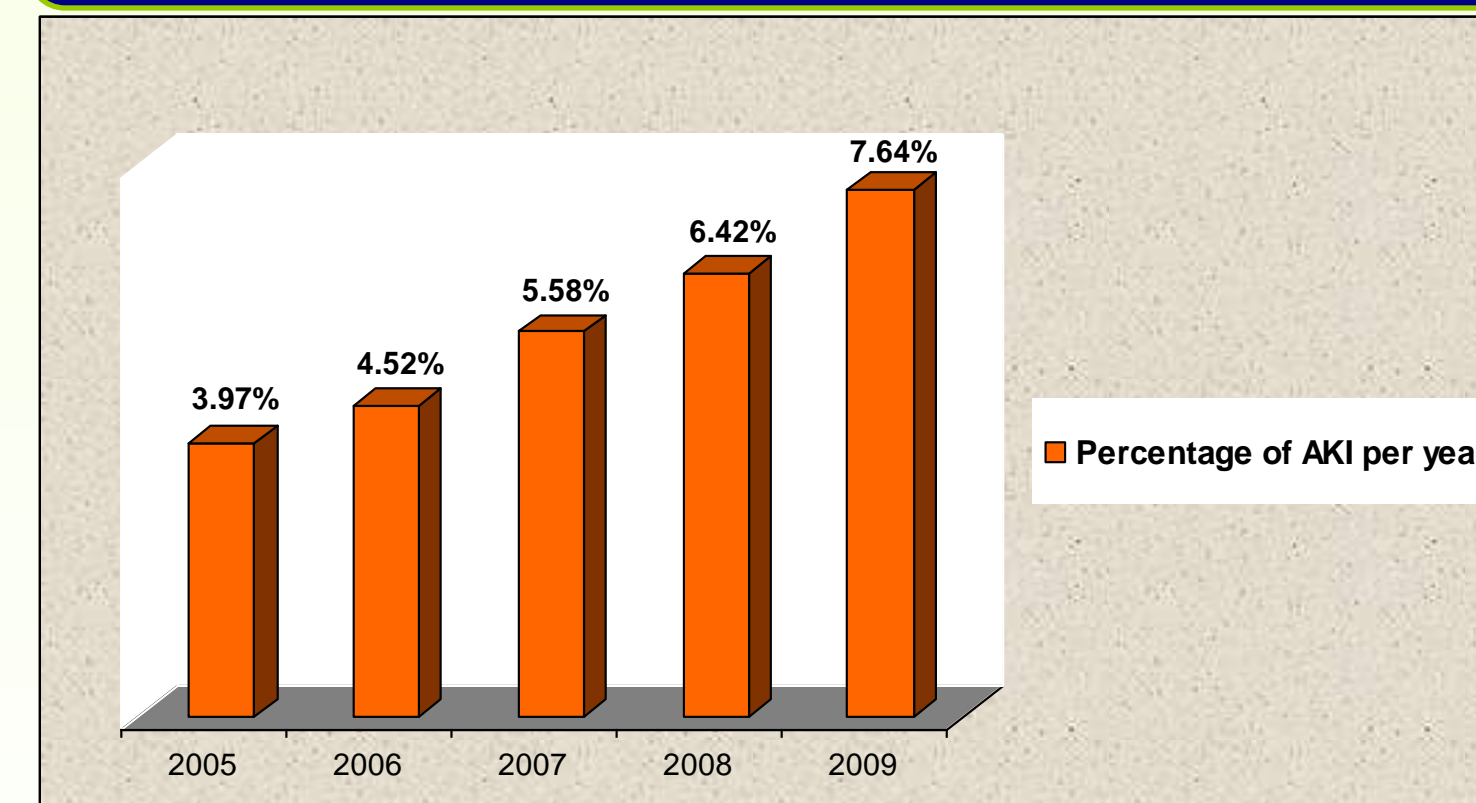
Table 2. AKI Outcomes

Outcomes	AKI-NoCKD	AKI-CKD	OR 95% CI	P value
Inpatient Dialysis	2197 (4.37%)	1171 (10.0%)	0.41 [0.38, 0.44]	<0.001
Length of Hospitalization	9.20 □ 10.3 Median: 6 (1, 232)	7.40 □ 6.77 Median: 6 (1, 183)	--	<0.001
Dismissal to Care Facility	13, 469 (36.1%)	2, 556 (30.9%)	1.27 [1.20, 1.33]	<0.001
Inpatient Mortality	6,467 (12.9%)	593 (5.83%)	2.38 [2.18, 2.60]	<0.001

Table 1. Baseline Characteristics

Characteristics	AKI-NoCKD	AKI-CKD	P value
Age (median, range)	72 (18, 99)	75 (18, 99)	<0.0001
Gender (% female)	48.7	46.9	0.0007
Race (% Caucasian)	71.7	69.2	<0.0001
Admission type (% emergent)	90.0	90.5	0.1602

Fig 2. Prevalence of AKI per Year 2005-2009



Conclusions

- There is an increasing prevalence in AKI among hospitalized patients in the United States.
- AKI is associated with prolonged hospitalization, higher likelihood for dismissal to care facility and significantly higher mortality among patients without baseline CKD compared to patients with CKD.