

Prevalence of hospitalized acute kidney injury among Medicare & employer group health plan participants in the U.S.

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Introduction

- The prevalence of acute kidney injury (AKI) has been increasing.
- The prevalence of AKI has not been reported in a nationwide sample in the last five years.
- We aimed to determine the prevalence of hospitalized AKI in a nationwide sample of patients in the United States.

Methods

- The study cohort includes point prevalent general Medicare patients on January 1, 2007, age 66 and older on December 31, 2007, and point prevalent patients in employer group health programs derived from the Medstat Marketscan and Ingenix i3 databases, age 20-64 on December 31, 2007.
- Patients with end-stage renal disease (ESRD) before January 1, 2007 were excluded. Each patient was followed from January 1, 2007 to the earliest of death, diagnosis of ESRD, change of enrollment, or December 31, 2007.

- AKI was identified through a 584 claim in patients hospitalized during the follow-up period.
- Rates are reported as the number of AKI events per 1,000 patient years at risk.

Results

- Overall, the prevalence of AKI was 16.09, 1.22, 0.89 per 1,000 patient years in the Medicare, Medstat, and Ingenix i3 populations.
- There appears to be a graded relationship between age and the incidence of AKI in all populations. In the Medicare dataset, the rate of AKI in 2007 was 8.9 per 1,000 patient years for patients age 66-69, compared to 11.3, 16.2, 21.8, and 27.6 for ages 70-74, 75-79, 80-84, and ≥ 85 , respectively (Figure 1).

- The rate of AKI in EGHP patients is much lower than that among Medicare patients.
- In all cohorts, males are more likely than females to have an AKI diagnosis (Figure 2).
- By race, AKI hospitalization rates were 15.1 per 1,000 patient years in whites and 28.6 and 15.0 in African Americans and individuals of other races, respectively (Figure 3).
- In multivariable analysis, the risk of an AKI diagnosis was increased with increasing age (Table 1) and in men.

Figure 1
Rates of AKI by age

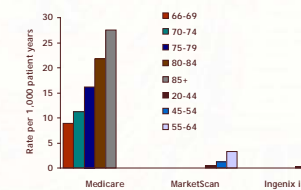


Figure 2
Rates of AKI by gender

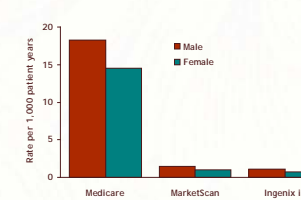


Figure 3
Rates of AKI by race

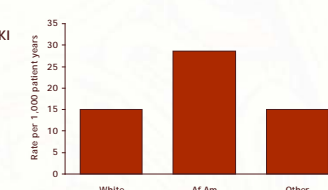


Table 1
Adjusted hazard ratios for AKI hospitalization

	HR	LCL	UCL
Medicare			
66-69	0.779	0.739	0.821
70-74	ref		
75-79	1.463	1.397	1.532
80-84	2.013	1.924	2.106
85+	2.621	2.509	2.739
Male	ref		
Female	0.714	0.693	0.734
White	ref		
African American	2.038	1.953	2.127
Other	1.014	0.948	1.086
MarketScan			
20-44	ref		
45-54	3.342	3.199	3.491
55-64	8.486	8.158	8.827
Male	ref		
Female	0.654	0.636	0.674
Ingenix i3			
20-44	ref		
45-54	3.361	3.165	3.569
55-64	7.958	7.525	8.414
Male	ref		
Female	0.634	0.607	0.664

Conclusions

- Age appears to be a strong risk factor for AKI. AKI episodes are much less common in the younger EGHP population than among Medicare patients.
- This difference is likely the result of different age distributions in these insured cohorts.