

Risk factors for Community- Acquired Acute Kidney Injury: a prospective observational study

P. Saudan¹, C. Alves², V. De la Fuente², B. Ponte¹, S. Carballo²,
O. Rutschmann³, P. Martin¹, F. Stucker¹

¹Nephrology Unit, ²Department of Internal Medicine, ³Department of Emergency Medicine, Geneva University Hospitals, Geneva, SWITZERLAND.

Objectives:

Acute Kidney Injury (AKI) is a major health problem and its diagnosis may be challenging. There is a paucity of data on community-acquired AKI (CA-AKI) in western societies. We aimed to better define characteristics of AKI occurring within the community and the effectiveness of AKI initial management.

Methods:

Prospective observational study within the Emergency Department of a University Hospital, screening for any patient > 16 years of age admitted with an eGFR < 60 ml/mn and a decline in eGFR as compared to previous values, when available (KDIGO AKI criteria). Patients with chronic kidney disease (previously known for a eGFR < 60 ml/mn) and no acute rise from previous value were excluded. There was a daily identification of patients with the help of a computer-based database and all the cases with a eGFR < 60 ml/mn were subsequently reviewed by a panel of nephrologists.

Results:

From May 1st to June 21st 2013, there were 8464 admissions in our Emergency Department, of which 325 patients (3.8%) had AKI. Three patients were excluded from analyses on account of missing data.

Demographic and clinical data, causes of admission in 322 patients with CA-AKI, rate of AKI identification in the ED		Laboratory data, etiologies and stages of CA-AKI, need of hospital management and short-terms outcome		Type of medications at admission in patients with CA-AKI	
Age (yrs) mean(SD)	75 (15)	pl.creatinine (mmol/L);mean (SD)	196 (173)	RAA blockers (%) (ACEIs and ARBs)	21
Male gender (%)	60	eGFR (ml/mn); mean (SD)	36 (14)	Diuretics (%)	15
Diabetes (%)	22	pl. K (mol/L) mean (SD)	4.3 (0.9)	both	24
HTN (%)	55	K> 5.5 (%)	7	neither	41
CKD (%)	32	prerenal (%)	73	statins	27
Coronary disease (%)	24	renal (%)	17	NSAIDS	5
Cardiac failure (%)	15	postrenal (%)	10		
Cirrhosis (%)	3	Stage I/II/III (%)	83/8/9		
Cancer (%)	12	Hospitalisation (%)	88		
Infection (%)	10	Length of stay (LOS) (days)			
Med/Surg/Trauma (%)	82/12/6	Median + IQR	10 (4-26)		
Identification of CA-AKI (%)	52	ICU stay (%)	10		
Identification in St. I/II/III (%)	46/74/88	Need for RRT (%)	3		
(33 patients admitted in ICU excluded)		90 days mortality (%)	13		

LOS in 306 patients according to the type of medication (patients who died within the first 10 days excluded)	
RAA blockers	9 (3-27)
diuretics	15 (11-33)*
both	12 (6-25)
neither	9 (3-27)

p=0.035
Multiple linear regression analysis with age, gender, comorbidities, medication use:
Age only significant variable

Conclusions:

These preliminary results show that CA AKI is underdiagnosed within the ED, especially in patients with stage I. AKI is frequently found in the elderly, and the main etiology is prerenal. Medications such as ACEIs-ARBs and diuretics are frequently encountered. We suggest that some cases of CA-AKI may be avoided with the help of patient education teaching them how to manage these medications in case of disease-induced hypovolemia.

References:

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