

Acute kidney injury in a Medical Intensive Care Setting; Single Unit Experience

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Background

Acute kidney injury (AKI) is a common and important complication in critical care, and is associated with poor outcome [1]. It has been the focus of many studies leading to recent advances in diagnosis and classification.

Despite these, incidence and outcome of AKI in Sri Lankan population is largely unknown.

Methods

Design:

An analytical cross-sectional study

Setting:

Medical Intensive Care Unit (MICU) in National Hospital of Sri Lanka

Study population:

Consecutive admissions to MICU over a period of 6 months except those who;
 - had chronic kidney disease
 - remained in ICU for <48 hours

Data collection:

Information was collected on socio-demographic characteristics, clinical and physiological data and severity of illness on admission using SOFA score [2].

Data analysis:

Data was analyzed using the SPSS version 16.0. Categorical data were expressed as proportions and subgroups were analyzed using chi-square test.. Kaplan-Meier analysis was used to compare length of stay

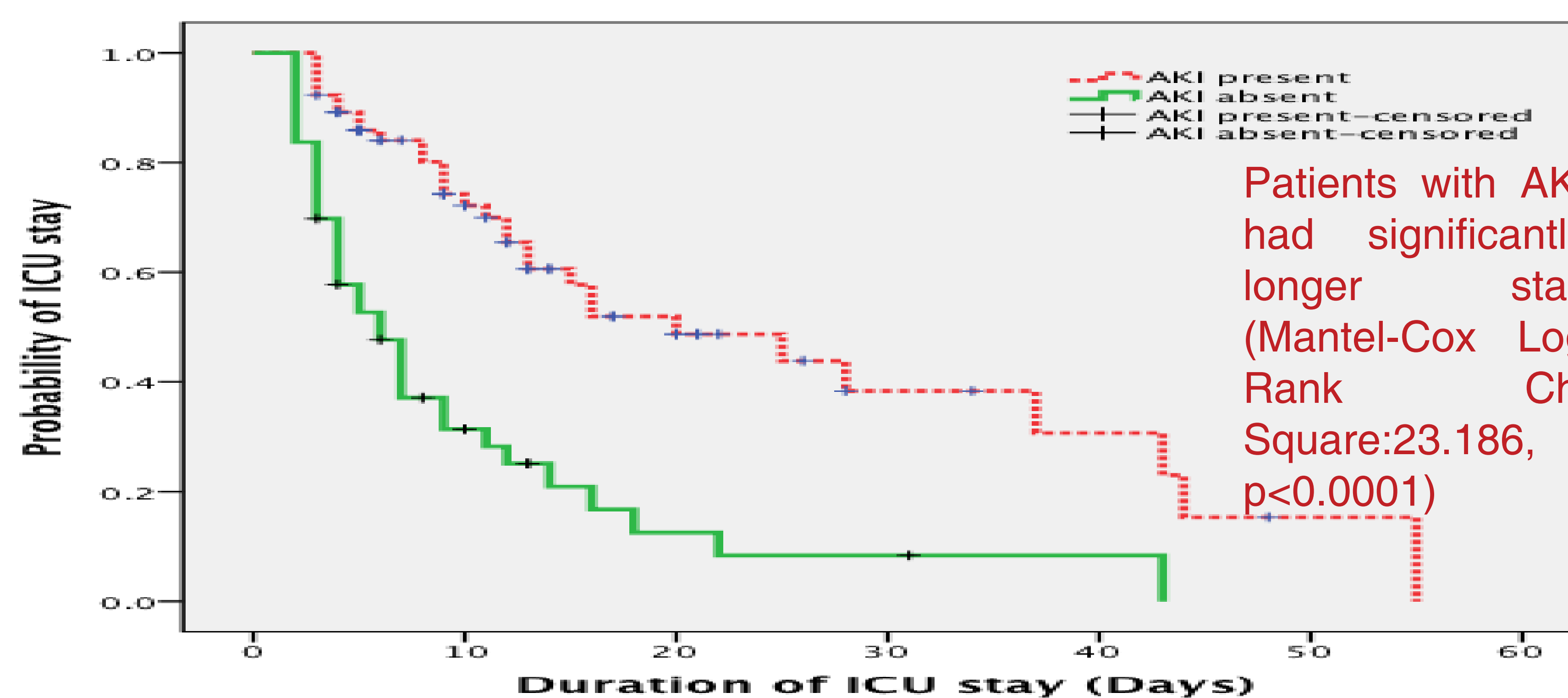
Results - 1

Of 212 total admissions, 156 (73.6%) patients satisfied inclusion criteria; 108 (69.2%) were included in final analysis. 65 (60.2%) developed AKI.

Table 1: Risk factors associated with AKI

'Risk factor'	AKI present	AKI absent	Total	P value
Gender				
Male	30 (44.1%)	38 (55.9%)	68 (100%)	(p>0.05)
Female	22 (55.0%)	18 (45.0%)	40 (100%)	
Age				
≤ 60 years	30 (39.5%)	46 (59.5%)	76 (100%)	(p<0.01)
>60 years	22 (68.7%)	10 (31.7%)	32 (100%)	
Diabetes mellitus				
Yes	16 (59.3%)	11 (40.7%)	27 (100%)	(p>0.05)
No	36 (43.2%)	45 (56.8%)	81 (100%)	
Hypertension				
Yes	16 (57.1%)	12 (42.9%)	28 (100%)	(p>0.05)
No	36 (45.0%)	44 (55.0%)	80 (100%)	
Ischaemic heart disease				
Yes	11 (64.7%)	6 (35.7%)	17 (100%)	(p>0.05)
No	41 (45.1%)	50 (54.9%)	91 (100%)	
Total	52 (48.1%)	56 (51.9%)	108 (100%)	

Fig 1: Kaplan-Meier plot comparing duration of ICU stay among patients with and without AKI on admission.



Results - 2

Fig 2: Primary clinical diagnosis of patients

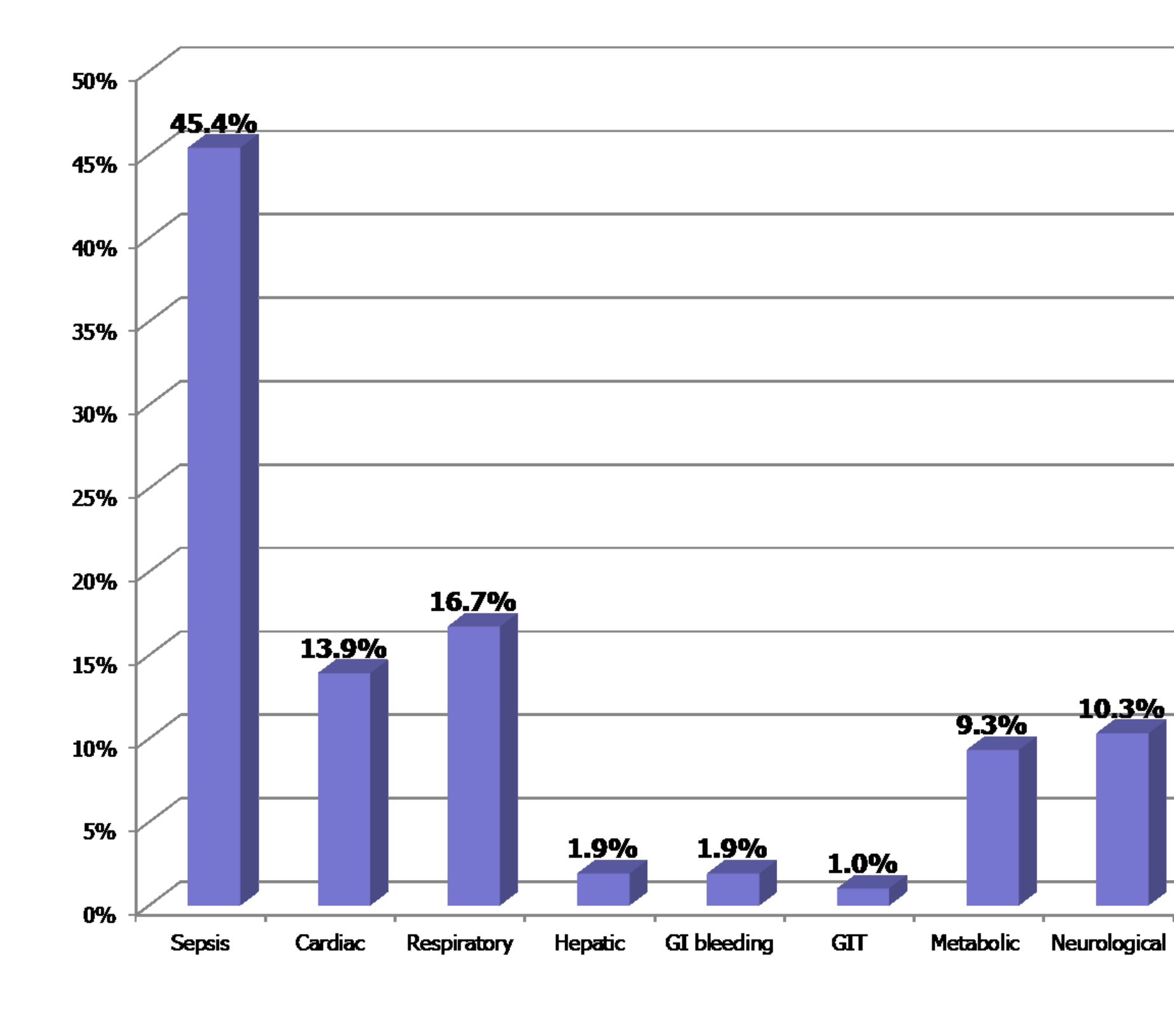


Fig 3: Incidence of AKI in relation to primary clinical diagnosis

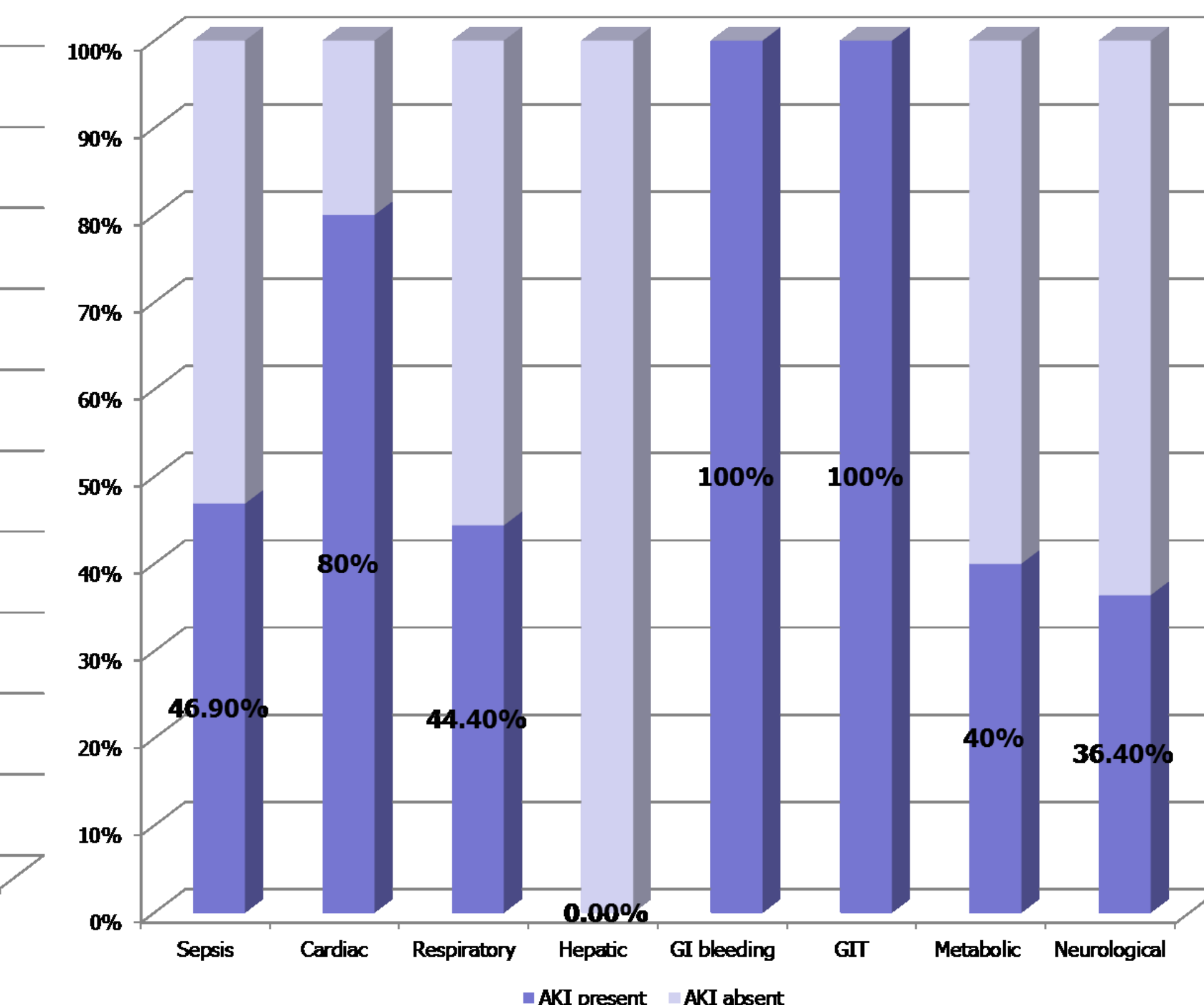


Table 2: Mortality in the ICU in relation presence or absence of AKI. Patients with AKI are more likely to die in ICU (p<0.0001)

		Dead / Alive at MICU		Total
		Dead	Alive	
Stage of AKI	No AKI	13	43	56
	Stage 1	25	17	42
	Stage 2	3	3	6
	Stage 3	1	3	4
Total		42	66	108

Conclusions

The incidence of AKI is high in patients admitted to ICU, and development of AKI is associated with poor outcome and reduced survival. AKI significantly increases the duration of ICU stay, resulting in significant increase in cost of care.

References

1. Cruz DN, Ronco C. Acute kidney injury in the intensive care unit: current trends in incidence and outcome. *Crit Care* 2007; 11: 149.
2. Vincent JL et al. The SOFA (Sepsis-related Organ Failure Assessment) score to describe organ dysfunction / failure. *Intensive Care Med.* 1996; 22: 707-710.