

# RIFLE CRITERIA VS ACUTE KIDNEY INJURY NETWORK (AKIN) CLASSIFICATION FOR ACUTE KIDNEY INJURY AFTER CARDIAC SURGERY

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## OBJECTIVES

Acute kidney injury (AKI) is a severe postoperative complication after cardiac surgery. In 2004, the Acute Dialysis Quality Initiative (ADQI) group developed RIFLE criteria and the Acute Kidney Injury Network modifying RIFLE criteria published AKIN classification. Aim of this study was to compare the RIFLE criteria and AKIN classification for the incidence of acute kidney injury (AKI) and prediction of clinical outcomes in patients with AKI after cardiac surgery.

## METHODS

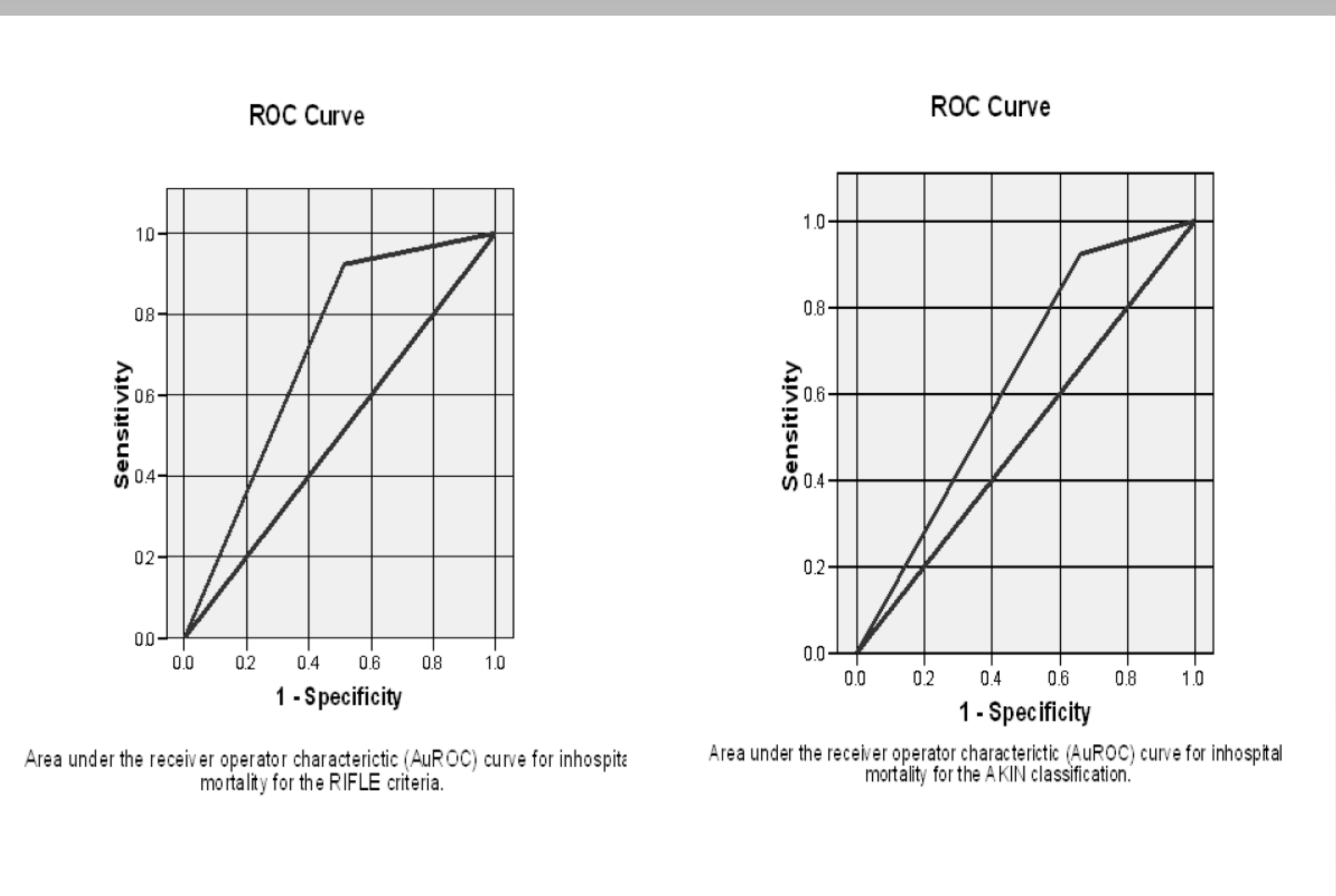
This retrospective cohort study, involved adult patients (>18 years) admitted in the cardio surgical ICU, tertiary care center, between January 2007 and December 2007. Patients who stayed more than 24 hours were included. Transplanted and chronic dialysis patients before admission to the ICU were excluded. AKI was classified according to the maximum RIFLE criteria and AKIN classification using both serum creatinine and urine output (UO) criterion during their hospital stay. Demographic severity scores of illness (SOFA score) on admission and outcome data were collected.

## RESULTS

284 ICU patients were included for the study. According to AKIN classification, AKI occurred in 191 (67.3%) patients, approximately 10% more than RIFLE criteria ( $p<0.001$ ) and classified more patients with Stage 1 (43.7%) versus risk in RIFLE (26.7%). In all patients, the area under the receiver operator characteristic curve (ROC curve), the index for hospital mortality prediction, was for RIFLE criteria 0.705 [(95%CI) ranging from 0.590 to 0.820,  $P=0.012$ ], and for AKIN, 0.631 [(95%CI) ranging from 0.501 - 0.761,  $P=0.110$ ].

Characteristic	RIFLE criteria		P value	AKIN classification		P value
	Non AKI	AKI		Non AKI	AKI	
Incidence (%)	42.8	57.2		32.7	67.3	
Age m[IQR]	54 (44-61)	58 (52-65)	<0.001	54 (41-60)	58 (51-65)	<0.001
Male (%)	52.6	68.2	0.007	25.4	74.6	<0.001
SOFA score m[IQR]	3 (1-4)	5 (3-6)	<0.001	3 (1-4)	4 (3-6)	<0.001
Mortality (%)	0.8	7.9	0.004	1.1	6.3	0.049
Days ICU M SD	2.3 0.81	4.1 6.1	0.003	2.3 0.91	3.8 6.2	0.02

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## CONCLUSIONS

We found AKIN classification to be more sensitive for detection of AKI, but RIFLE criteria showed better discriminative value for prediction of mortality in AKI after cardiac surgery patients.

## REFERENCES:

Kidney International Supplements (2012) 2, 8–12; doi:10.1038/kisup.2012.7

