2 HOURS URINARY OUTPUT BEFORE STARTING CRRT AS AN EARLY MARKER OF SURVIVAL IN AKI PATIENTS IN ICU

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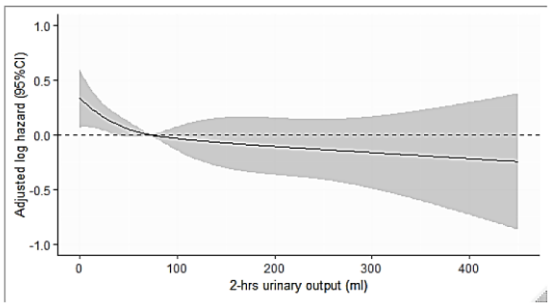
Objective: The aim of our study was to evaluate the role of urinary output (UO), 2-hours (hrs) before starting of continuous renal replacement therapy (CRRT), as an early marker of survival on critically ill patients hospitalized in intensive care units (ICUs).

Methods: Our study was performed on a wide historical Korean cohort of ICU patients with CRRT-requiring acute kidney injury (AKI). Clinical, demographic and laboratory data were collected for each patient. From original cohort were removed all patients with missing data at baseline. Our exposure of interest was the 2hrs-UO (collected before starting CRRT), divided in quartiles and reported as categorical variable in regression models. The outcome of interest was 90-days mortality. Cox regression model, adjusted for potential confounders (Table 1), was used to derive hazard ratios (HRs) and 95% confidence interval (CI). Restricted cubic spline (multivariable adjusted) was performed to describe the relationship between UO (reported as continuous variable) and log-HR of death 90-days mortality.

Results: 675 patients were included in the study. Higher 2hrs-UO was significantly associate with increased 90-days mortality (p value for trend = 0.002; Table 1, Figure 1).
Multivariable adjusted Cox regression model demonstrated a reduced risk of 90-days death in patients in patients in the higher quartile of 2hr-UO (HR 0.64, CI 95% 0.49, 0.85, p=0.002, 4th quartile compared with the 1st quartile [reference group]; Table 1).

Figure 1. Relationship between 2-hrs urinary output and 90-days mortality



Conclusion: 2hr-UO before starting of CRRT is an important early marker of survival in AKI patients in ICUs.

Table 1. Association between 2-hrs urinary output and 90-days mortality

	2-hrs UO 1st quartile <6 ml	2-hrs UO 2nd quartile 6-36 ml	2-hrs UO 3rd quartile 36-106 ml	2-hrs UO 4th quartile >106 ml	*p* value for trend
n	185	167	155	168	
Death (*n*, %)	148 (80.0)	121 (72.5)	102 (65.8)	93 (55.4)	
HR (95% CI)	1.00 (Ref)	0.75 (0.59, 0.95) p=0.017	0.63 (0.49, 0.81) p<0.001	0.49 (0.38, 0.64) p<0.001	<0.001
HR (95% CI)#	1.00 (Ref)	0.80 (0.62, 1.03) p=0.078	0.74 (0.57, 0.97) p=0.032	0.64 (0.49, 0.85) p=0.002	=0.002

Multivariable adjusted Cox regression model. Adjusted for: Age, Sex, BMI, mean arterial pressure at CRRT initiation, myocardial infarction, congestive heart failure, peripheral vascular disease, cerebrovascular disease, dementia, diabetes mellitus, hypertension, chronic obstructive pulmonary disease, mechanical ventilation at CRRT initiation, potassium at CRRT initiation, bicarbonate at CRRT initiation, phosphate at CRRT initiation, hemoglobin at CRRT initiation, BUN at CRRT initiation, SOFA score, APACHE II score, CCRT dose, Charlson comorbidity index score, cause of CRRT initiation (1=Volume overload, 2=metablic acidosis, 3=hyperkalemia, 3=uremia, 4=oliguria, 5=others)