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Factors associated with very early mortality in critically ill patients with continuous renal replacement therapy

Kee Youn Kyung¹, Kim Seung-Jung², Kang Duk-Hee³, Choi Kyu Bok³, Ryu Dong-Ryeol³, Oh Hyung Jung³

¹Department of Internal Medicine-Nephrology, Hangang Sacred Heart Hospital, Korea, Republic of

²Department of Internal Medicine-Nephrology, Catholic Kwandong University International St. Mary's Hospital, Korea, Republic of

³Department of Internal Medicine-Nephrology, Ewha Womans University Mokdong Hospital, Korea, Republic of

Objectives:

Continuous renal replacement therapy (CRRT) is an important modality in critically ill patients and the number of patients considered for treatment with CRRT is increasing. However, treatment with CRRT is costly and the associated resources are limited. It remains challenging to identify patients who would most likely to have a poor outcome despite active treatment with this treatment. We aim to elucidate the factors associated with very early mortality of initiating CRRT.

Methods: Two hundred forty-one patients who initiated on CRRT at an academic medical center from September 2016 to January 2018 were analyzed. We compared the clinical and demographic characteristics between patients who died within 24 hours initiating CRRT and who survived the first 24 hours. Logistic regression analyses were conducted for evaluating the factors associated with very early mortality. In addition, we also evaluated the factors associated with the 28 days-mortality after 24 hours and compared them to the factors associated with very early mortality.

Results:

Among 241 patients initiating CRRT in study period, 55 patients (22.8%) died within 24 hours. Mean age of study patients were 65.8 ± 14.7 and 62.2 % were men. Multivariate logistic regression models showed that low blood pressure, diabetes mellitus, anuria, systemic inflammatory response syndrome, and high Acute Physiology and Chronic Health Evaluation II (APACHE II) score and Sequential Organ Failure Assessment (SOFA) score were significantly associated factors with very early mortality in our study.

Conclusions: In this study, it is suggested that appropriate medical decision should be made when initiating CRRT treatment in critically ill patients considering the possibility to die within 24 hours despite applying CRRT.