KSN 2018
Seoul, Korea · May 17 - 20

Abstract Type : Oral
Presentation No. : OR 02 AK-09

Fluid balance after two days of continuous renal replacement therapy initiation is a predictor of 28-day mortality – multicenter cohort study

Jung Nam An[1], Sohee Oh[2], Hyung Jung Oh[6], Jung Pyo Lee[1], Dong Ki Kim[5], Dong-Ryeol Ryu[4], Sejoong Kim[3]
[1]Department of Internal Medicine-Nephrology, SMG-SNU Boramae Medical Center, Korea, Republic of
[2]Department of Biostatistics, SMG-SNU Boramae Medical Center, Korea, Republic of
[3]Department of Internal Medicine-Nephrology, Seoul National University Bundang Hospital, Korea, Republic of
[4]Department of Internal Medicine-Nephrology, Ewha Womans University School of Medicine, Korea, Republic of
[5]Department of Internal Medicine-Nephrology, Seoul National University Hospital, Korea, Republic of
[6]Department of Ewha Institute of Convergence Medicine, Ewha Womans University Mokdong Hospital, Korea, Republic of

Objectives: Cumulative fluid balance is associated with the risk of mortality in severe acute kidney injury (AKI) patients undergoing continuous renal replacement therapy (CRRT). However, there is no index to accurately measure the fluid balance status. We examined the fluid balance by time using bioimpedance analysis and investigated the association with clinical outcomes in the CRRT patients.

Methods: In this multicenter cohort study, a total of 179 AKI patients undergoing CRRT were enrolled from May 2017 to January 2018. Bioimpedance analyses were performed and the values of total body water/height^2 (TBW/H^2, L/m^2) were collected at the time of CRRT initiation (Day 0), Day 1, Day 2, and Day 7. Demographics, comorbidities, various parameters related to CRRT, laboratory data, and clinical outcomes were extracted from electronic medical records.

Results: Mortality at 28 days after CRRT initiation was 48.6%, and more fluid overload at CRRT initiation (D0) was associated with mortality (Odds ratio [OR], 2.26; 95% confidence interval [95% CI], 1.04-4.90; P = 0.040). In the analysis of the patients with available data measured at day 2, TBW/H^2 at day 2 was significantly associated with risk for 28-day mortality (OR, 1.22; 95% CI, 1.01-1.48; P = 0.040). Multivariate analysis adjusting for age, sex, comorbidities, APACHE II score, and SOFA score revealed that TBW/H^2 after 2 days of CRRT initiation was a potential predictor for 28-day mortality.

Conclusions: This study demonstrated that fluid overload, defined as TBW/H^2, at 2 days after CRRT initiation might contribute to increase 28-day mortality. Further studies will be needed.