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Simple markers for severe acute kidney injury patient outcome

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Objectives:

Acute kidney injury (AKI) was common severe complication and one of causes of high mortality rate in intensive care unit patients. Many severe AKI patients had received renal replacement therapy and the patients with hemodynamic instability receive the continuous renal replacement therapy (CRRT). Many studies were focused on scoring systems on CRRT patient outcomes. But these systems were too complicated and difficult to rapidly apply to critically ill patient. So, We used simple inflammation markers and laboratory findings to prognostic factors of AKI outcomes.

Methods: We retrospectively studied on adult patients who diagnosis AKI and performed CRRT on our hospital from January 1, 2010 to December 31, 2016. We checked the laboratory findings when the inpatients with CRRT for severe AKI. They were divided two groups by 28-day in hospital survival. The clinical manifestation associated with each groups were analyzed. The value was expressed by median (range).

Results: January 1, 2010 through December 31, 2016 were initially screened (n=920). We excluded patients who younger than 18years old and expired within 24hours of hospitalization and End stage kidney Disease. A total of 794 patients were included in the analyses. 505 patients are death group and 289 patients are survive. We collected their laboratory results, analyzing that using Mann-Whitney U test. After then, We performed regression analysis based on them. We were able to find 3 factors associated with patients mortality. Age, PLR and phosphorus level were those factors. The median age of patients were 70(20-91) year-old in death group and 65 (18-90) year-old in survival group. (P=0.001) Death patients are lower Platelet lymphocyte ratio(PLR) than survival patients.[92.85(3.04-1190.36)vs. 129.77(5.91-1281.41),P=0.001] Death patients are higher phosphorus level than survival patients.[5.2(1.02-18.9)vs. 3.5(1.05-14.20),P=0.001]. Other baseline characteristics and laboratory findings were no significantly different.

Conclusions: Age, PLR and P level were a good predictive factors of inpatients with CRRT mortality.