KSN 2016 Abstract Submission

ICU Nephrology

KSN2016ABS-1045

Decrease of serum creatinine in critically ill patients is associated with increased mortality.

Hye Ran Kang*[1], Si Nae Lee[1], Jin Seok Jeon[1], Hyunjin Noh[1], Dong Cheol Han[1], Suyeon Park[2], Soon Hyo Kwon[1]
[1]Division of nephrology, [2]Department of biostatistics, Soonchunhyang University Hospital, Seoul, Korea, Republic Of

Background: The elevation of creatinine increases risk of death in critically ill patients. However, it is uncertain whether decrease of creatinine in intensive care unit (ICU) setting has an impact on outcome. Thus, the association between bidirectional creatinine changes and mortality in critically ill patients was analyzed.
Methods: In a retrospective study, 508 patients who admitted to an urban tertiary ICU from January 2014 to December 2014 were enrolled. The effect of change in serum creatinine after admission on 90 days mortality was analyzed. Patients were placed into 3 groups based on change in serum creatinine during the first 7 days after ICU admission: unchanged creatinine, decrease creatinine (ΔCrea $\geq$-0.3 mg/dL) and increase creatinine (ΔCrea $\geq$0.3 mg/dL) meeting the KDIGO AKI definition.
Results: Serum creatinine decreased in 131 (25.8%) patients after ICU admission. AKI developed in 124 (24.4%) patients. Serum creatinine was unchanged in 253 (49.8%) patients. The overall 90-day mortality rate was 160/508 (31.5%). In a Kaplan-Meyer analysis, the mortality in the AKI group was higher than that of other groups ($p<0.001$). Patients with a decrease in creatinine showed the higher mortality rate compared to those with unchanged creatinine ($p=0.008$). The Cox analysis showed that decrease in creatinine was an independent risk factor for death. (Hazard ratio ; 1.71, 95% confidence interval ; 1.09-2.68, $p=0.018$).
Conclusion: Any increase or decrease of serum creatinine in critically ill patients was associated with mortality.

Keywords: decrease of serum creatinine, Intensive care unit, mortality