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지속적 신대체요법을 시행하는 환자에서 혈청 소디움 농도와 사망률과의 관련성에 관한 연구

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U-shape Relationship between Serum Sodium and Mortality in Patients Undergoing Continuous Renal Replacement Therapy

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Backgrounds: Hyper- and hypo-natremia are associated with morbidity and mortality in several clinical settings. However, the correlation between serum sodium level and mortality remains unresolved in patients undergoing continuous renal replacement therapy (CRRT).

Methods: A total of 569 patients were prospectively enrolled at the time of starting CRRT from June 2010 through September 2010. The non-linear relationship between sodium and mortality was initially explored by a restricted cubic spline analysis. The odds ratios (ORs) for mortality were calculated after adjustment of multiple covariates

Results: The relationship between serum sodium and mortality was U-shaped. Accordingly, we divided patients into quintiles with following sodium levels (mmol/L): 1st, 114-130; 2nd, 131-134; 3rd, 135-137; 4th, 138-142; and 5th, 143-165. The 1st, 2nd, and 5th quintiles of sodium had greater ORs for 30-day mortality (2.10, 1.86, and 1.94, respectively) compared with the 4th quintile (all Ps<0.05). For 90-day, 180-day, and 1-year mortalities, the 1st quintile was the only significant risk group compared with the 4th quintile. We further analyzed the associations of mortality with sodium levels after 24 (n=536) and 72 (n=432) hours. The 5th quintile of 24-hour sodium had greater OR for 30-day mortality (1.03) than the 4th quintile (p=0.001). However, other 24- or 72-hour quintiles did not have a correlation with mortality.

Conclusion: The present study first determines that both hyper- and hypo-natremia at the time of starting CRRT are associated with mortality risk.

Key Words: 지속성 신대체요법, 사망률, 소디움
Continuous renal replacement therapy, Mortality, Sodium