

## 패혈성 급성 신손상 환자에서 고유량 지속성 신대체요법의 유용성 평가

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### Effects of High Volume Continuous Renal Replacement Therapy in Patients with Septic Acute Kidney Injury

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**Background:** Circulating pro-inflammatory cytokines are known to aggravate sepsis induced acute kidney injury (AKI). Continuous renal replacement therapy has been proposed to have role in immunomodulation through the removal of cytokines by convection or absorption. However, the optimal CRRT dose for maximal inflammatory cytokine removal and patient survival is not clear yet. Therefore, the effect of extremely high intensity of CRRT compared to usual dose on inflammatory cytokine removal as well as its influence on patient and renal survival in sepsis patients with AKI was evaluated.

**Methods:** A prospective randomized controlled open-label trial that assessed high and conventional doses of CRRT in patients with septic AKI requiring CRRT support in Seoul National University Hospital and Yonsei University Health System between Jan 2011 and Aug 2014 was performed. Dialysate flow was randomized achieve a clearance of 40 ml/kg/hour or 80 ml/kg/hour. Blood samples were collected before and 24-hour after the initiation of CRRT. Death and renal outcome were evaluated for end points.

**Results:** A total number of 212 patients were randomized. The conventional dose group consisted of 107 patients while the high intensity group included 105 patients. The mean age was 62.1 years and 138 (65.1%) patients were male. The 30-day and 90-day mortality rates were 64.6 % and 76.4 % respectively. Renal survival rates for 30-day and 90-day were 22.3% and 17.5% respectively. There were no differences in 30 and 90 day mortality or renal survival between the conventional dose group and high intensity group. However, significant 30-day survival benefits were found in patients with decreased serum levels of IL-6, IL-8, IL-10, and TNF- $\alpha$  after 24 hours of CRRT initiation.

**Conclusion:** The levels of pro-inflammatory cytokines affect patient survival in sepsis patients with AKI significantly. However, CRRT dose of 80 ml/kg/hour did not significantly modulate serum cytokine levels or patient outcome compared to conventional 40 ml/kg/hour dose.

**Key Words:** 패혈증, 급성신부전, CRRT  
Sepsis, Acute kidney injury, CRRT