

## CRRT를 통한 수분 제거량이 급성 신부전 환자의 생존 예측에 미치는 영향

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### The Amount of Net Fluid Removal is an Independent Predictor of Mortality in Patients with Acute Kidney Injury Undergoing CRRT

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**Introduction:** Fluid overload at the time of renal replacement therapy is an important predictor of patient survivor in patients with acute kidney injury (AKI). However, the effect of successful fluid removal on patient survival has rarely been studied. This study is aimed to define this issue.

**Methods and materials:** We retrospectively analyzed 158 consecutive AKI patients who underwent continuous renal replacement therapy (CRRT) more than three days in Pusan National University Hospital from Jan 2013 to Dec.2014. The amount of total body water (TBW), intracellular water (ICW) and extracellular water (ECW) were measured at the time of CRRT initiation and termination by multifrequency bioimpedance analyzer. Patients with previous history of end stage renal disease were excluded in this study.

**Result:** The mean patient's age was 64.35±14.14 years and 55.1% of the patient was male. Among the 158 enrolled patients, 53.8% were survived after mean times of 4.60±3.94 days of CRRT treatment. In the survivors, TBW adjusted with height (TBW/H) was successfully removed however, it was not in the non-survivors; 22.38±3.97 to 21.27±4.02 L/m, p<0.001 in survivors, 22.55±4.61 to 22.53±5.37 L/m, p=0.961 in non-survivors. In a multivariable analysis that adjusted with age, sex, presence of sepsis, SOFA score, total protein and actually delivered CRRT dose, initial hypervolemia (HR 1.207(1.061-1.374, p=0.004) and the lower amount of fluid removal by CRRT (0.750(0.635-0.886), p=0.001) were independent factors for the prediction of patient survivor. In the subgroup analysis of the survivors, fluid removal was done in both intracellular and extracellular compartment, and the amount of percent changes in removed ICW to ECW was nearly same; 13.15±2.46 to 12.51±2.51 L/m, p<0.001 in ICW, 9.23±1.61 to 8.76±1.56 L/m, p<0.001 in the ECW compartment. Percent change of ICW, 4.29±12.17% and the percent change of ECW, 4.47±12.43.

**Conclusion:** The amount of fluid removal during CRRT is an independent predictor of patient survival in patients with AKI undergoing CRRT, and fluid removal is occurs in both of the intracellular and extracellular fluid compartment.

**Key Words:** 급성신부전, 지속적 신대체요법, 수분과잉  
 Acute kidney injury, CRRT, Volume overload