

지속적정정맥혈액투석 전담팀을 통한 투석효과

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The Effect of Maintaining a Continuous Renal Replacement Therapy Expert Team in the Intensive Care Unit : A Single Center Experience

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Objectives: In Korea, there are 102 centers practicing continuous renal replacement therapy (CRRT), using around 300 CRRT machines. However, only 3 hospitals maintain a CRRT expert team which consists of CRRT specialists (nephrologists) and CRRT expert nurses. We investigated the effect of maintaining a CRRT expert team on outcome in patients with acute kidney injury treated in the intensive care unit (ICU).

Method: Study subjects were 577 patients who underwent CRRT from August, 2007 to August, 2009. Demographic variables, clinical features, characteristics and duration of CRRT, and patient outcome were reviewed. Since a CRRT expert team had been set up in August, 2008, outcome before and after CRRT team establishment was compared.

Results: The number of patients treated on CRRT was increased from 244 patients/year to 353 patients/year after CRRT team maintenance. The average age was 61.6 years and 64.1% of patients were male. Age, gender and APACHE II score at the time of admitting to ICU showed no differences between the two groups of patients who underwent CRRT before and after CRRT team establishment ($p=0.481$, 0.195 and 0.113 , respectively). Most of the patients were referred for CRRT from the Cardiology department (15.6%) following Gastroenterology (13.9%), Pulmonology (11.4%), Hematology (10.4%), Chest surgery (9.5%), General surgery (7.6%), and Nephrology (6.9%). The most common causes for CRRT initiation was azotemia followed by volume overload and metabolic abnormalities. There were no significant differences in the level of BUN, Cr and mean blood pressure at the time of CRRT commencement between the period before CRRT expert team establishment and after. However, although there was no significant difference in ICU mortality the duration of CRRT (6.64 versus 5.58 days, $p=0.003$), the number of filters used (5.35 versus 4.46, $p=0.015$), and ICU stay (20.58 versus 16.86 days, $p=0.009$) were significantly decreased after CRRT expert team maintenance. The average cost of maintaining CRRT per patient was also reduced from 2,863,181 Korean Won (2,451.35 US Dollar) to 2,463,854 Korean Won (2,109.46 US Dollar) ($p=0.001$) after CRRT expert team establishment.

Conclusion: Maintaining a CRRT expert team may be beneficial for the management of patients undertaking CRRT in the ICU. Moreover, additional economic benefits may be present as well.

Key Words: 지속적정정맥혈액투석, 전담팀, 집중치료실
CRRT, Expert team, ICU