

## 낮은 혈청 중탄산염이 복막투석환자의 잔여신기능 감소를 예측한다

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### Low Serum Bicarbonate Predicts Residual Renal Function Loss in Peritoneal Dialysis Patients

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**Background and Aim:** Low residual renal function (RRF) and serum bicarbonate are associated with adverse outcomes in peritoneal dialysis (PD) patients. However, a relationship between the two has not yet been determined in these patients. Therefore, this study aimed to investigate whether low serum bicarbonate has a deteriorating effect on RRF in PD patients.

**Methods:** This prospective observational study included a total of 405 incident patients who started PD between January 2000 and December 2005. We determined risk factors for complete loss of RRF using competing risk methods and evaluated the effects of time-averaged serum bicarbonate (TA-Bic) on the decline of RRF over the first 3 years of dialysis treatment using generalized linear mixed models.

**Results:** During the first 3 years of dialysis, 95 (23.5%) patients became anuric. The mean time until patients became anuric was 20.8±9.0 months. After adjusting for multiple potentially confounding covariates, an increase in TA-Bic level was associated with a significantly decreased risk of loss of RRF (HR per 1 mEq/L increase, 0.83; 0.74-0.93; p<0.001), and in comparison to TA-Bic ≥26 mEq/L, TA-Bic <26 mEq/L conferred a 2.44-fold higher risk of becoming anuric. Furthermore, the rate of RRF decline estimated by generalized linear mixed models was significantly greater in patients with TA-Bic <26 mEq/L compared with those with TA-Bic ≥26 mEq/L (-0.14 vs -0.10 mL/min/month/1.73 m<sup>2</sup>, p<0.001).

**Conclusion:** In this study, a clear association was found between low serum bicarbonate and loss of RRF in PD patients. Nevertheless, whether correction of metabolic acidosis for this indication provides additional protection for preserving RRF in these patients is unknown. Future interventional studies should more appropriately address this question.

**Key Words:** 중탄산염, 잔여신기능, 복막투석

Bicarbonate, Residual renal function, Peritoneal dialysis