The Risk Factors for Technique Failure in Continuous Ambulatory Peritoneal Dialysis Patients in Korea – 30 years' experience in a single center

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Objectives: The number of patients needing renal replacement therapy for end-stage renal disease is dramatically increasing in Korea. Continuous ambulatory peritoneal dialysis (CAPD or PD) is a good treatment option for these patients but complications such as peritonitis and resulting CAPD drop-out is one of the main reasons for the lower prevalence of PD compared to hemodialysis (HD). The aim of this study is to identify the risk factors for technique failure in CAPD patients.

Methods: This retrospective observational cohort study included all 589 patients who started PD at Bucheon St. Mary's hospital between 1 January 1990 and 31 December 2017. Patient demographic data and laboratory data were collected for analysis. Peritonitis episodes, technique failure, and mortality were observed. Technique failure was defined as change to HD due to peritonitis, exit-site infection, inadequate dialysis and ultrafiltration failure.

Results: In the total of 2,098 patient-years, 731 cases of peritonitis was recorded, therefore the total peritonitis rate was 0.35 episodes of peritonitis per patient-year. A total of 156/589 patients (26.5%) experienced technique failure and the average duration to technique failure was 4.0 years. In the Cox proportional hazard model, high pro-BNP, low albumin levels, presence of hypertension and higher frequency of peritonitis were significant predictors of technique failure.

Conclusions: Our results help identify patients that are at higher risk of technique failure at the start of PD and this information may be used in determining the adequate modality in ESRD patients in need of dialysis.