

다중주파 생체전기저항 분석기를 사용하여 측정된 체외수분의 증가는 복막투석 환자들의 잔여신기능 보존에 도움이 되지 않는다: 2년간의 추적관찰 연구

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Extracellular Volume Expansion, Measured by Multifrequency Bioimpedance, dose not Help Preserve Residual Renal Function in Korean Peritoneal Dialysis Patients: Two Year Follow Up Study

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Introduction: Preservation of residual renal function (RRF) is a major determinant of patient survival in chronic peritoneal dialysis patient. With the previous studies that compared RRF in hemodialysis with peritoneal dialysis patients, it was thought that, maintaining sufficient intravascular volume would be beneficial for the preservation of RRF. Multifrequency bioimpedance analysis (BIA) is a simple, inexpensive and non-invasive method that measures volume status. In this study, we aimed to test if the sufficient volume status would be beneficial for the preservation of RRF using BIA.

Method: A total of 66 patients were enrolled in this study. From 2011 to 2012, baseline BIA was checked then, patients were divided into two groups according to the median value of ECW/TBW : group 1, ECW/TBW < median, group 2, ECW/TBW > median. We followed those patients till Feb. 2014, then compared changes of urine output (UO) and weekly urine Kt/v (weekly uKt/v) in each group. Δ UO was calculated as final UO- baseline UO and, Δ weekly uKt/v was calculated as final weekly uKt/v-baseline weekly uKt/v. Volume measurement was made using Inbody S20 (Biospace, Seoul, Korea). We excluded anuric patient at baseline.

Result: The median value of ECW/TBW was 0.396 and the mean follow up period was 25.47 The mean patient age was 49.74 years old, 62.1% of the patients were male and most of the patients were on CAPD (89.1%). The mean dialysis vintage was 26.20 months. All patients were prescribed hypertensive medication and 48.5% of the patients had diabetes. All of these baseline parameters were not significantly different between two groups. In patients with group 2, the mean ECW/TBW levels were statistically higher (vs 0.401 , baseline UO and weekly uKt/v were slightly lower; UO (951.79 674.22 vs 538.52 644.60, p=0.015), weekly uKt/v(0.70 0.66 vs 0.47 0.62, p=0.150). After 25.47, UO and weekly uKt/v were equally decreased and, Δ UO and Δ weekly Kt/v were not significantly different in both two groups; Δ UO (-322.82 533.37 in group 1 vs -201.15 405.16 in group 2, p=0.327), Δ weekly Kt/v (-0.22 0.37 in group 1 vs -0.17 0.28in group 2, p=0.601). Also, neither Δ weekly uKt/v nor Δ UO was not correlated with the baseline ECW/TBW.

Conclusion: Extracellular volume expansion, measured by multifrequency bioimpedance analysis, dose not help preserve residual renal function even in the Korean peritoneal dialysis patients.

Key Words: 복막투석, 다중주파 생체저항분석기, 잔여신기능
Peritoneal dialysis, BIA, RRF