No Association of Peritoneal Albumin Excretion with pre-existing Cardiovascular Disease and Systemic Inflammation in New Peritoneal Dialysis Patients

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Background : Microalbuminuria is a well-known risk factor and a predictor of cardiovascular disease in patients with chronic kidney diseases. Recently, researchers found that peritoneal albumin excretion was related to the cardiovascular events and all-cause mortality in peritoneal dialysis (PD) patients.

Purpose : We evaluate the association of peritoneal albumin excretion and IL-6 level with pre-existing cardiovascular disease (CVD) and diabetic status in the new PD patients.

Patients and Methods : In this multi-center cross-sectional study, we enrolled eighty-five patients who started PD. Pre-existing CVD was defined as angina, history of myocardial infarctionI, cerebrovascular disease, or peripheral arterial disease. Modified peritoneal equilibration test (PET) was performed within 2 months after the initiation of PD. At that time, peritoneal albumin and protein excretion, serum and dialysate IL-6, CRP level were measured.

Results : The age (mean±SD) was 49.5±14 years and male-to-female ratio was 1.3. The estimated GFR (by MDRD equation) at the start of PD was 7.9±3.79 mL/min/1.73m^2. DM and cardiovascular disease were present in 40% and 28% of patients, respectively. The peritoneal albumin concentration and dialysate-to-plasma albumin ratio were correlated with the dialysate-to-plasma (D/P) creatinine ratio at 4 hours ($r=0.552$, $p<0.001$), and were higher in the high-average/high transporter group than in the low-average/low transporter groups (630±202 vs. 410±162 mg/L, 0.19±0.008 vs. 0.12±0.005, respectively; $p<0.001$). The peritoneal albumin concentration was closely correlated with the dialysate IL-6 level ($r=0.424$, $p<0.001$), but not with the serum IL-6 and C-reactive protein levels. There were no differences in the peritoneal albumin excretion with respect to the diabetic status or pre-existing CVD.

Conclusion : The peritoneal albumin concentration was associated with peritoneal small solute transport and dialysate IL-6 level, but not with pre-existing CVD and markers for systemic inflammation in the new PD patients. Prospective study will follow in order to verify the role of peritoneal albumin excretion as a predictor of cardiovascular events.