



Abstract Type : Poster exhibition

Abstract Submission No.: A-1032

Abstract Topic : Dialysis

High Frequency of Peritonitis was Associated with Abnormal Peritoneal Membrane Function among PD Patients

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Objectives : Peritoneal membrane transport characteristics are typically classified into high (H), low (L), high average (HA) or low average (LA) transport categories using the peritoneal equilibration test (PET). The aim of the study was to evaluate the clinical and demographic characteristics of peritoneal dialysis (PD) patients with H and L membrane transport status and compare them with patients with HA and LA status.

Methods : This cross-sectional study included patients undergoing PD at Medvic hospital between 2015 - 2025. Adult patients receiving PD who had undergone a standard PET (2.5%) during routine clinical evaluation were eligible for inclusion. Patients with incomplete clinical data or those who had not undergone PET testing were excluded. Also, we collected demographic data from our patients.

Results : Among the 111 participating patients, 17 (15.3%) were classified as either high (n=9, 8.1%) or low (n=8, 7.2%) peritoneal membrane transporters. And we classified these patients as having abnormal membrane transport (AMT). As for the HA and LA patients, we considered them as having normal membrane transport (NMT). Of the following 10 factors we checked, AMT such as sex, height, BMI, PD duration of more than 2 years, peritonitis frequency, plasma creatinine and lastly ultrafiltration time by 4 hrs. When we conducted multivariate logistic analysis on the 7 of the factors checked by the univariate analysis, peritonitis frequency and plasma creatinine (2hrs) were statistically significantly associated with AMT. In another words, having high frequency of peritonitis (2.08, $p<0.049$) and lower plasma creatinine (0.675, $p<0.019$) associated with having abnormal membrane transport.

Conclusions : AMT patients demonstrated significantly higher peritonitis frequency and lower plasma creatinine obtained at 2 hours. These findings suggest that abnormal peritoneal membrane transport status may be associated with increased risk of peritonitis and lower plasma creatinine, which may have implications for patient monitoring and management.