

지속성외래복막투석환자에 있어서 복막중피세포 표현형과 연관된 인자분석

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Factors Associated with Ex-vivo Phenotype of Human Peritoneal Mesothelial Cells (HPMCs) During 3 Years in Incident CAPD Patients

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Objectives : This study was designed to verify the changes of ex vivo phenotype of HPMC and the associating factors with higher epithelial to mesenchymal transition (EMT) in CAPD patients.

Methods : Among incident CAPD patients during May 2001 to August 2006, 119 incident CAPD patients completed 36 months protocol, prospectively. Each patient finished effluent cell cultures (833 times), adequacy, PET and clinical indices at 1st, 6th, 12th, 18th, 24th, 30th and 36th months. There were 6 groups according to dialysate, lactate-based, high GDP solutions (Stay-safe[®], FMC, n=8 and Dianeal[®], Baxter, n=23), lactate-based, low GDP solution (Balance[®], FMC, n=28), bicarbonate/lactate-based, low GDP solution (Physioneal[®], Baxter, n=12), switching groups (Dianeal[®] to Physioneal[®], n=29 and Stay-safe[®] to Balance[®], n=19). Dialysate(D)-CA125 and HPMCs from overnight effluent were completely isolated and cultured on the T25 flask at 1st and every 6 months. Cell score was blindly measured by the same person at near confluence (score 1: cobble-stone shaped HPMCs, score 2: mixed, score 3: fibroblastoid cell). Pearson chi square analysis, repeated measures ANOVA (RMA) and generalized estimation equation (GEE, STATA) were used to analyze the data.

Results : Physioneal[®] group showed higher incidence of cell score 3 (31/84 vs. 28/161, $p < 0.01$) and higher cell score ($p = 0.003$, RMA) than Dianeal[®] group during 3 years. Balance[®] group showed lower incidence of cell score 3 (24/196 vs. 21/56, $p < 0.01$), lower cell score ($p = 0.001$, RMA) and higher D-CA125 ($p = 0.005$, RMA) than Stay-safe[®] group during 3 years. Factors associated with higher cell score (high EMT) were female ($p = 0.025$), lactate/HCO₃ dialysate ($p = 0.000$), lower D/P 4hr Cr ($p = 0.012$), lower D-CA125 ($p = 0.000$) and duration of PD ($p = 0.000$) in CAPD patients (GEE). In a subgroup analysis, high GDP PD solution was also significant associating factor with higher EMT in FMC group ($p = 0.006$, GEE).

Conclusion : Phenotype of cultured effluent cells showed higher EMT over time on PD. Lower D-CA125 level, low peritoneal transport and high GDP PD solution (Stay-safe[®]) were also significant associating factors with higher EMT but the role of lactate/HCO₃ PD solution on EMT should be determined.

Key Words : 지속성외래복막투석, 복막중피세포

CAPD, Human peritoneal mesothelial cell