S-A4

자동 목막 투석 환자에서의 Insulin growth factor축과 염증의 관계

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Insulin-like Growth Factor Axis is Associated with Inflammation in Automated Peritoneal Dialysis Patients

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Objectives: Insulin-like growth factor (IGF)-1 has been known to be a surrogate marker of malnutrition in dialysis patients. However, to date, there has been no study evaluating the association between IGF axis and inflammation in patients with automated peritoneal dialysis (APD). We examined the ratio of IGF-1 to IGF binding protein-3 (IGFBP-3) as a marker of IGF axis, which is revealed to be more validate to reflect IGF-1 bioactivity. Therefore, this study was aimed to determine whether IGF axis (IGF-1/IGFBP-3) is correlated with inflammation and compare the effect of different APD modalities on IGF axis and inflammation [nocturnal intermittent peritoneal dialysis (NIPD) vs. continuous cyclic peritoneal dialysis (CCPD)].

Methods: A prospective observation study was undertaken in 15 incident APD patients (8 on NIPD vs. 7 on CCPD). Clinical characteristics, IGF-1, IGFBP-3, high sensitivity-CRP (hs-CRP), and interleukin-6 (IL-6) were evaluated at baseline and after 6 months of follow-up.

Results: There were no significant differences in clinical characteristics, IGF-1/IGFBP-3, hs-CRP, and IL-6 between two groups at baseline. After 6 months, IGF-1/IGFBP-3 levels showed a change of -10.8% (from 0.21 to 0.19; 95 % CI, -23.4% to 1.7%) in NIPD group and + 4.9% (from 0.22 to 0.24; 95% CI, -27.2% to 37.1%) in CCPD group. And there was a significant decrease in IGF-1/IGFBP-3 in NIPD group compared with CCPD group (difference between groups, -15%; 95% CI, -44.9% to 13.4%, $p=0.03$). In addition, IGF-1/IGFBP-3 showed significant correlations with hs-CRP ($r=0.805$ on NIPD vs. $r=0.951$ on CCPD, $p<0.01$) and IL-6 ($r=0.709$ vs. $r=0.772$, $p<0.05$) in both groups.

Conclusions: The present study showed a significant association of IGF axis with inflammation in APD patients. Moreover, it suggested different APD modalities affected on changes in IGF axis and inflammation.

Key Words: IGF축, 염증, 자동복막투석
IGF axis, Inflammation, APD