

복막 투석 환자에서 procollagen type III peptide level을 이용하여 심장 섬유화와 관련된 심장 질환의 예측

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The Prediction of Cardiac Disease Related to Cardiac Fibrosis with Procollagen Type III Peptide Level in Peritoneal Dialysis Patients

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Purpose : Procollagen type III peptide, the serum maker of collagen turn over, is known as a predictable indicator of cardiac fibrosis. Nevertheless, the relation between procollagen type III peptide level and cardiac fibrosis in peritoneal dialysis patients is not yet reported. In this study, we tried to find out if procollagen type III peptide level can predict heart disease related to the cardiac fibrosis such as left ventricular hypertrophy, cardiac conduction disease and diastolic heart failure in peritoneal dialysis patient.

Methods : Fifty seven peritoneal dialysis patients from age of 18 to 75, who has no history of coronary heart disease, myocardial infarction were included in our retrospective cohort study. Every patient was tested for procollagen type III peptide level when enrolled. 2-D echo was also carried out for those who never had it before. For the evaluation of diastolic dysfunction, peak E wave velocity, peak A wave velocity, deceleration time, isovolemic relaxation time and LA size were used. Left ventricular hypertrophy was calculated with the troy formula.

Results : Twenty six patients had normal diastolic function and 20 patients showed abnormal diastolic function. Average level of procollagen type III peptide was 1.86 in normal group and showed increased tendency in diastolic dysfunction group although there was no statistical significance (1.86 ± 0.58 vs. 2.41 ± 1.27 , $p=0.079$). Correlation Analysis was done for the possible factors that might have an effect on procollagen type III peptide level, such as left ventricular mass index ($r=0.16$, $p=0.238$), P-R interval ($r=0.160$, $p=0.236$), QRS duration ($r=0.21$, $p=0.118$) which showed no statistical significance. There were no clinical or laboratory parameters that had statistically significant association with procollagen type III peptide level in multivariate analysis.

Conclusion : The average level of procollagen type III peptide tended to be higher in diastolic dysfunction group, but there was no statistical significance. As the study power was 43%, the number of case was estimated to be small for statistical analysis, which can be the major limitation of this study. Prospective, large scale study is needed to confirm this finding.

Key Words : Procollagen III, 심장섬유화, 이완기장애

Procollagen III, Cardiac fibrosis, Diastolic dysfunction