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혈액투석을 시작하는 환자에서 1형 procollagen level과 심초음파 결과의 상관관계 분석

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The association of Serum Procollagen Type 1 with Echocardiographic Markers in Incident Dialysis Patients

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Aim: Serum procollagen type 1 is known as biomarker of cardiac fibrosis in heart failure patients. However the clinical significance of this biomarkers is less determined in end-stage renal disease (ESRD) patients. This study was to evaluate the association of predialysis serum procollagen type 1 levels with echocardiographic markers in ESRD patients.
Methods: Serum procollagen type 1, albumin, CRP, iPTH, TGF-β1 levels were obtained from predialysis blood samples of 120 incident dialysis patients. Echocardiographic parameters included left ventricular mass index (LVMI) and ejection fraction, ratio of peak early transmitral flow velocity to peak early diastolic mitral annular velocity (E/E' ratio), ratio of peak early transmitral flow velocity to peak late transmitral flow velocity (E/A ratio), and mitral valve-deceleration time (DT).
Results: Predialysis serum procollagen type I level was positively correlated with E/A (r=0.265), E/E' (r=0.230), LVMI (r=0.310) and was negatively correlated with DT (r=-0.213), and ejection fraction (r=-0.322). Serum TGF-β1 did not show significant correlations with any echocardiographic parameters. In multivariate analysis, serum procollagen type I level was independently associated with E/E' ratio (β= 0.007, p=0.001) and ejection fraction (β=-0.13, p=0.003).
Conclusions: Serum procollagen type 1 levels was an independent biomarker associated with E/E' ratio and ejection fraction in incident dialysis patients. Measuring serum procollagen type 1 level may help to assess cardiac systolic and diastolic function in ESRD patients.

Key Words: 1형 프로콜라겐, E/E' ratio, 심박출율
Procollagen type 1, E/E' ratio, Ejection fraction