혈액 투석 환자에서 procollagen III N terminal peptide의 임상적 의의

고려대학교 의과대학 내과학교실

차진주 · 김선철 · 오세원 · 김혜원 · 양하나 · 김명규 · 조상경 · 조원용 · 김형규

Clinical Significance of Procollagen III N-terminal Peptide (PIIINP) Level in Hemodialysis Patients

Jin-Joo Cha, Sun-Chul Kim, Se-Won Oh, Hye-Won Kim, Ha-Na Yang
Myung-Gyu Kim, Sang-Kyung Jo, Won-Yong Jo, Hyoung-Kyu Kim

Department of Internal Medicine, College of Medicine, Korea University

Background : Nonischemic heart diseases characterized by cardiac fibrosis and microvessel disease are considered to be responsible for cardiovascular disease in patients with chronic kidney disease. Recent experimental and clinical data in non-CKD patients demonstrated collagen turnover markers (e.g, PINP, PIIINP) as useful indicators of cardiac fibrosis, which is an important feature of left ventricular hypertrophy and diastolic dysfunction. The aim of this study was to evaluate clinical significance of PIIINP as a predictive marker of cardiac fibrosis in hemodialysis patients .

Methods : Fifty three hemodialysis patients were included. Patients with previous history of coronary heart disease, valvular heart disease, chronic liver disease, pulmonary disease, thyroid disease were excluded. Dermographic and laboratory data including serum procollagen III peptide level were collected. Diastolic dysfunction (DD) and Left ventricular hypertrophy (LVH) were diagnosed using 2 dimensional echocardiography.

Results : There was no significant difference in PIIINP level between DD (n=22) and no-DD (n=31) patients (2.75±1.67 vs 2.20±0.85, p=0.27). Each group did not show differences in median age, sex, dialysis frequency, dialysis duration. Echocardiographic studies revealed no significant correlation in left ventricular mass index with PIIIP level (p=0.476). PIIINP level was negatively correlated with URR (r^2=0.361, p=.00) even adjusted for age, sex, type of medication and underlying diseases. HD duration, KT/V, Hb, CRP, albumin, Ca, P, PTH levels did not show significant correlation with PIIINP level (all, p>0.05).

Conclusion : Unlike nonCKD patients, PIIINP level couldn't identify cardiac diseases like DD or LVH in CKD pts undergoing HD. Although PIIINP level didn't prove to be an indicator for cardiac fibrosis in HD patients, patients with more adequate urea removal, showed lower level of PIIINP level.

Key Words : 프로콜라겐 III 펩티드, 혈액투석, 심장 섬유화
Procollagen III peptide, Hemodialysis, Cardiac fibrosis