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당뇨병성신증 환자에서 신질환 진행의 예측 인자로서의 좌심실 비대의 의의

연세대학교 의과대학 영동세브란스병원 내과학교실

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Left Ventricular Hypertrophy as a Prognostic Factor of the progression of Renal Disease in Patients with Predialysis Type 2 Diabetic Nephropathy

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Introduction : Left ventricular hypertrophy (LVH) is an important risk factor for cardiovascular disease in diabetic nephropathy patients. We evaluated whether the presence and the pattern of LVH were predictors of the progression of renal disease in patients with predialysis type 2 diabetic nephropathy.

Methods : Total of 78 (male, n=37; female, n=41) clinically stable type 2 diabetic patients with overt proteinuria (500 mg/d) were recruited in the study. Left ventricular mass (LVM), LVM index (LVMI) and relative wall thickness were assessed by echocardiography. LVH was considered to be present if LVMI >131 g/m^2 for men and >100 g/m^2 for women. Clinical parameters such as age, BMI, body surface area (BSA), systolic blood pressure (SBP), diastolic blood pressure (DBP), hemoglobin (Hb), BUN, creatinine (sCr), GFR estimated by Cockroft- Gault equation (eGFR), serum uric acid (sUA), lipid profiles, HbA1c, 24 hr urine protein, and duration of DM were collected. Follow- up data about the progression of renal disease, defined as doubling of sCr or starting dialysis were searched retrospectively (mean duration of follow- up; 4.6 years).

Results : The prevalence of LVH was 56 out of 78 (71.8%) patients and distributions of LVH pattern were as follows; 21.5% normal (Group 1), 6.3% concentric remodeling (Group 2), 29.1% concentric hypertrophy (Group 3), and 41.8% eccentric hypertrophy (Group 4), respectively. In four groups according to LVH pattern, baseline clinical parameters such as age, BMI, Hb, sCr, sUA and 24hr urine protein were not different except SBP (p= 0.019). Percentage of the progression of renal disease in four groups were as follows; Group 1;23.5%, Group 2;0%, Group 3;39.1%, Group 4;57.6%, p= 0.024. In univariate analysis, clinical predictors of the progression of renal disease were SBP (p=0.008), Hb (p<0.001), sCr (p=0.001), eGFR (p=0.002), sUA (p=0.027), LVMI (p= 0.003), and the presence of LVH(p=0.016). However, there was no difference between concentric hypertrophy and eccentric hypertrophy in predicting the progression of renal disease. In multivariate cox regression hazard model, SBP (HR=1.059, p=0.033) and eGFR (HR=0.966, p=0.003) were significant independent predictors of the progression of renal disease.

Conclusion : The presence of LVH is associated with the progression of renal disease. The strict BP control and the regression of LVH are important measures in preventing the progression of renal disease in predialysis type 2 diabetic nephropapaty paients.

Key Words : 당뇨병성 신증, 좌심실비대, 신기능 저하
Diabetic nephropathy, Left ventricular hypertrophy