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N-terminal Pro-brain Natriuretic Peptide (NT-proBNP) Levels Predict Left Ventricular Mass in the Follow-up of Hemodialysis (HD) Patients Sinseol Yeolin Clinic

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Left ventricular hypertrophy (LVH) is a major risk factor for cardiovascular mortality in dialysis patients. Echocardiography is the procedure of choice in detecting LVH. Whether changes in plasma biomarkers in clinical practice predict changes in LV mass in these patients is still unknown. This was a prospective study of 24 chronic asymptomatic HD patients (10 males, mean age 55 yrs). Patients with decreased LV ejection fraction (<50%) or significant valvular or coronary heart disease were excluded. Echocardiography and measurement of plasma BNP, NT-proBNP, cardiac troponin T (cTnT) were carried out at baseline, 6 months and 12 months. Changes in LV mass index (LVMI) correlated positively with changes in NT-proBNP levels during the first (baseline vs. 6 month, $r=0.68$; $p<0.01$) and second 6 months period (6 month vs. 12 month, $r=0.78$; $P<0.01$). After adjustment for age, sex, duration of dialysis, underlying cause of renal failure, hemoglobin level, use of ACE inhibitor or angiotensin II receptor blocker, correlation coefficients between change in LVMI and change in NT-proBNP level were significant (β coefficient=0.79; $p=0.003$ vs 0.76; $p=0.003$). Correlation between changes in LVMI and BNP level, LVMI and cTnT level during the first 6 months and second 6 months period were not statistically significant ($p>0.05$). Our results show that change in Left ventricular mass index is closely correlated with change in NT-proBNP level in chronic stable HD patients. This data have significant implications for application of this peptide as biomarkers for assessing change in LV mass in HD patients.