Original Paper

The correlation between left ventricular hypertrophy in echocardiography and kidney function among patients with essential hypertension

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Abstract

Background & Objective: More than 50\% of patients with hypertension will have end organ damage (such as: CHF, retinopathy, CVA or renal failure). Left ventricular hypertrophy (LVH) is an independent risk factor for death and cardiovascular disease. Both renal dysfunction and LVH are signs of end organ damage so we carried out this study to evaluate the correlation between LVH in echocardiography and kidney function in patients with essential hypertension.

Materials & Methods: This descriptive analytic study was carried out on 102 patients who referred to 5 Azar hospital in Gorgan- Iran, suffering from essential hypertension and had proved LVH in echocardiography with no other disease during 2005-6. Kidney and urinary tract assessment such as serum BUN, Creatinine level and kidney sonography was done on subjects. Left ventricular hypertrophy was defined as a left ventricular mass index (LVMI)\textsuperscript{>=}135g/m\textsuperscript{2} in men and >=110g/m\textsuperscript{2} in women. Renal function was estimated by means of the serum Creatinine level and proteinuria and sonographic findings of kidney and urinary tract. Data was analysed by Spss-11.5 and Chi-Square test.

Results: The average age of patients were 60\pm8.8. 58\%, 36\% and 7\% of patients had mild, moderate and sever LVH respectively. The means of Creatinine and BUN level were 1.09\pm1.12 mg/dl and 20.6\pm10.76 mg/dl had direct correlation with kidney dysfunction (P<0.05). There was a significant relationship between LVH severity and presentse of Kidney scar in sonography (P<0.05).

Conclusion: This study showed that a very large fraction of the subjects with essential hypertension have kidney problems. Therefore, serum BUN and Creatinine level and sonographic scar of kidney can be reliable markers for assessing and controlling target organ damages that are induced by Essential hypertension.

Keywords: Left ventricular hypertrophy, BUN, Creatinine, Essential hypertension, Sonography

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