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**EVALUATION OF LEFT VENTRICULAR
DIASTOLIC FUNCTION BY TISSUE DOPPLER
ECHOCARDIOGRAPHY IN ESSENTIAL
HYPERTENSION**

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Objective Left ventricular (LV) diastolic dysfunction is common in essential hypertension. The aims of this study were to evaluate LV diastolic function in essential hypertension using conventional pulse-wave Doppler echocardiography (cPWD) and Doppler tissue imaging (DTI) methods, and to compare the findings obtained with two modalities.

Methods Two hundred patients with essential hypertension were classified as NLVH subgroup (n=160) and LVH sub-group (n=40) based on left ventricular mass index (LVMI). One hundred and sixty health subjects were served as control group. The mitral valve flow pattern (MVFP) was obtained, and early diastolic (E) and late velocities (A) were measured. E/A was calculated. DTI was used to obtain the left ventricular lateral wall early diastolic mitral annulus velocity (Em). E/Em was calculated.

Results Essential hypertension patients had worse LV diastolic function both according to cPWD (higher E and lower E/A ratio) and DTI (lower Em and higher E/Em ratio) than the healthy subjects (0.88 ± 0.18 vs 0.76 ± 0.19 cm/s; 0.86 ± 0.28 vs 1.02 ± 0.38 ; 9.4 ± 2.8 vs 11.9 ± 3.8 cm/s; 7.9 ± 2.7 vs 6.0 ± 1.8 All P 0.05).

Conclusions cPWD and DTI both had implications to detect diastolic dysfunction in non-hypertrophic stage hypertension. Em, E/Em could more sensitively and precisely reflect the impairment of diastolic function in the progressing of the hypertension.