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Ambulatory pulse pressure, left ventricular hypertrophy and function in arterial hypertension.

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BACKGROUND: A wide pulse pressure (PP) can provide important risk assessment information about myocardial infarction, carotid artery atherosclerosis, and global cardiovascular risk. Ambulatory pulse pressure (APP) does not have a well-known prognostic value in hypertensive patients.

METHODS: To evaluate the relationship among high APP, atrial volumes, and cardiac function, an observational study was performed on 108 untreated non-elderly hypertensive patients (mean age 54.23 +/- 7.12). Twenty-four-hour ambulatory blood pressure monitoring, Doppler and echocardiographic measurements of systolic, diastolic function, left and right atrial volumes, left ventricular mass index and dimensions, were performed in subjects with both clinic and APP > 60 mmHg (APP1 Group). A control group of hypertensive selected subjects with both clinic and APP < 60 mmHg was chosen (APP 2 Group).

RESULTS: The APP1 group showed left atrial volume enlargement, high left ventricular mass index, and impaired diastolic function. A positive correlation was found in the APP1 group results among left ventricular end diastolic diameter ($r = 0.39$, $P < 0.01$), left atrial volume (0.38 , $P < 0.05$), and left ventricular mass index ($r = 0.33$, $P < 0.05$); clinic PP showed a statistically significant correlation with left atrial volume, left ventricular end diastolic diameter, and left ventricular mass index only in the APP1 group.

CONCLUSIONS: These results suggest that elevated APP can be considered an effective predictor of cardiovascular risk in hypertensive subjects. In these patients echocardiographic evaluation of left ventricular function and morphology can increase the prognostic value of PP.

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