Subclinical, hemodynamic, and echocardiographic abnormalities of high pulse pressure in hypertensive and non-hypertensive adults.

METHODS AND RESULTS: 2225 hypertensive and 1380 non-hypertensive participants with adequate echocardiographic left ventricular measurements were evaluated. Non-hypertensives in the highest PP tertile (compared to the lower tertiles) were older (44 years vs. 40 years, p<0.009), had higher systolic pressure [(SBP) 136 mmHg vs. 108 mmHg] and lower diastolic pressure [(DBP) 54 vs. 71 mmHg (p=.0001)], greater BMI (27 vs. 25 kg/m2, p<.001) and more diabetes (4% vs. 2.25%, p<.001). In the hypertensive group, subjects in the highest PP tertile were older (52 vs 42 years), had higher SBP (157 vs. 116 mmHg) but lower DBP (65 vs. 83 mmHg). In the non-hypertensive group, higher PP (>60 mmHg) was associated with a higher frequency of echocardiographic structural and functional abnormalities, specifically, greater posterior and relative wall thickness, longer isovolumic relaxation time, and concentric left ventricular (LV) hypertrophy.

CONCLUSION: In a population-based sample of hypertensive and non-hypertensive participants, higher PP was associated with subclinical abnormalities of cardiac structure and function, which exist even in the absence of hypertension and/or the use of antihypertensive treatment.
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