Alterations in diastolic function in masked hypertension: findings from the masked hypertension study.

BACKGROUND: In a prior study of patients with diabetes, diastolic function was similarly impaired in masked hypertension (MHT) and sustained hypertension (SHT). We evaluated whether MHT is associated with impaired diastolic function compared with SHT and sustained normotension (NT) in the general population.

METHODS: From February 2005 to December 2010, 798 participants without a history of cardiovascular disease or treated hypertension, were enrolled in the Masked Hypertension Study. Participants underwent clinic blood pressure (CBP) and 24-hour ambulatory blood pressure (ABP) measurements. A 2-dimensional Doppler echocardiogram was performed to evaluate diastolic function, cardiac structure, volume, and systolic function. The 9 CBPs obtained across 3 clinic visits and awake ABP measurements were averaged. Clinic hypertension was defined as systolic/diastolic blood pressure (SBP/DBP) ≥ 140/90 mmHg. Ambulatory hypertension was defined as awake SBP/DBP ≥ 135/85mm Hg. MHT was defined as having ambulatory but not clinic hypertension. White-coat hypertensives (n = 8) were excluded from the analysis.

RESULTS: Of the 790 participants, 116 (14.7%) participants had MHT, 37 (4.7%) participants had SHT, and 637 (80.6%) participants had NT. After age, sex, race/ethnicity, and body mass index...
adjustment, compared with NT, E'-velocities were significantly lower in MHT (P < 0.01) and SHT (P < 0.05), and E/E' ratios were significantly higher in MHT (P < 0.05) and SHT (P < 0.05). These associations were independent of left ventricular mass. Diastolic function parameters did not significantly differ between MHT and SHT.

**CONCLUSIONS:** Diastolic function was impaired in MHT compared with NT independent of changes in left ventricular mass.

[10.1093/ajh/hpt021](http://10.1093/ajh/hpt021)

Am. J. Hypertens.

23446956

PMC3657486

M01-RR10710 / RR / NCRR NIH HHS / United States

P01 HL047540 / HL / NHLBI NIH HHS / United States

P01-HL047540 / HL / NHLBI NIH HHS / United States

RR024156 / RR / NCRR NIH HHS / United States

T32 HL007854 / HL / NHLBI NIH HHS / United States

T32-HL007854-15 / HL / NHLBI NIH HHS / United States

UL1 TR000040 / TR / NCATS NIH HHS / United States