

Gender differences in the relation between ambulatory blood pressure and left ventricular mass in hypertensive outpatients

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Background and aims: Since gender seems to have a role in modulating the relation between hypertension and left ventricular hypertrophy (LVH), aim of this study was to investigate whether left ventricular mass (LVM) is differently related to blood pressure (BP) in male compared to female patients.

Patients and methods: We monitored 24-h-ambulatory-BP and measured LVM (by echographic method) in 151 (81M /70F) patients, consecutively referred to our unit to confirm hypertension or to modify therapy.

Results: Twenty-four-h-systolic-BP was similar in men, and in pre- or post-menopausal women, while 24-h-diastolic-BP was lower and pulse-BP higher in post-menopausal women. LVH prevalence was highest in post-menopausal women, and LVM weighted more in non-dippers than in dippers in men ($p=0.008$), in post-menopausal ($p=0.0004$), but not in pre-menopausal women. Percentage of LVM variance explained by systolic and diastolic BP was higher among pre-menopausal women, while 24-hour pulse BP was about five-six-fold more predictive of LVM variance in women. For every 1mmHg increase in either mean 24-hour-systolic or pulse-BP the adjusted relative risk for LVH was 2-3fold higher in women than in men. Non-dippers had a higher adjusted relative risk for LVH only in women (OR: 7.88; 95% CI:1.37-45.4 in women and 2.47; 95%CI:0.67-9.13 in men).

Conclusions: Gender is an important modulator of LVM dependence by BP. Pulse-BP is a strong independent predictor of LVM, especially and specifically in women, either prior to or after menopause, while non-dippers are associated with LVH among women, stressing once again, their different response to a same long-acting blood-BP load.