Heart

5.3 Left Ventricular Mass Independently Contributes to Long-Term Risk of Cardiovascular Morbidity and Mortality in a General Population: Data From the PAMELA Study

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Introduction. Left ventricular hypertrophy (LVH) represents a risk factor for cardiovascular (CV) events in the general population, independently of clinic blood pressure (BP). However, the relative independent 'weight' of an increased left ventricular mass (LVM) on CV morbidity and mortality still remains undefined, because of the confounding effects of 'office' and 'out of office' BP elevation on CV events.

Methods. In 1716 subjects belonging to the PAMELA Study, randomly selected from the general population of Monza (Milan, Italy), stratified for gender and age decades (25 to 74 years), we measured: (1) office BP (average of 3 measurements), (2) home BP (average of 2 self measurements), (3) ambulatory BP (Spacelabs 9020 7), (4) anthropometric variables, (5) plasma glucose and lipid values (radio-enzymatic method) and (6) echocardiographic variables used to calculate left ventricular mass index (LVM I). Subjects were followed for an average of 148 months, during which fatal and non-fatal CV events and all-cause deaths were recorded.

Results. 59 CV deaths, 139 CV events and 179 total deaths were recorded. After adjustment for age, gender, serum glucose and cholesterol, office, home and ambulatory systolic BP, day-night difference of systolic BP mean, erratic component of systolic BP variability, the risk of fatal or non fatal CV events and all-cause death was positively related to LVMI (HR 1.01 in both cases, $p=0.01$ and $p=0.001$, respectively). Among different types of events, the risk of heart failure (but not of stroke and coronary events) was significantly related to LVMI (HR 1.02, $p<0.05$).

Conclusions. In the general population, cardiac structural abnormalities are significantly associated with the risk of fatal and non fatal CV events. This is the case independently on the presence of other risk factors such as 'office' and 'out of office' BP increases.