Metabolic Aspects and Mechanisms

9.12 The Influence of Sex on the Relationships Between Metabolic Syndrome and Left Ventricular Mass in Hypertensive Patients

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Introduction. Several studies documented an association between metabolic syndrome (MetS) and left ventricular (LV) hypertrophy. However, only in a few of these studies the impact of MetS on left ventricular mass (LVM) was separately analysed by gender, with conflicting results.

Aim. To verify, in a wide sample of essential hypertensive patients, the influence of gender, if any, on the relationship between MetS and LVM.

Methods. We enrolled 475 non-diabetic subjects (mean age: 46 ± 11 years), with mild-to-moderate essential hypertension, of whom 40% had MetS, defined on the basis of NCEP-ATPIII criteria. All the patients underwent a 24-h ambulatory blood pressure (BP) monitoring and an echocardiogram.

Results. LVM indexed for height^{2.7} (LVM H2.7) was significantly ($p < 0.001$) higher in women with MetS ($n = 83$) than in those without it ($n = 97$) (54 ± 17 vs 42 ± 11 g/m^{2.7}). An equally significant difference in LVM H2.7 was documented also in male gender between the two groups with ($n = 105$) and without MetS ($n = 190$) (51 ± 14 vs 43 ± 11 g/m^{2.7}; $p < 0.001$). In the whole population, a 2-factor ANOVA model disclosed a significant effect of MetS ($F = 60.5$; $p < 0.001$), but not of gender ($F = 0.64$; $p = 0.42$) on LVM H2.7. The analysis of the interaction term 'gender x MetS' revealed no significant effect of sex on the association between MetS and LVM H2.7, both before ($F = 1.83$; $p = 0.18$) and after adjustment for age, previous pharmacological antihypertensive therapy, duration of hypertension and 24-h systolic BP ($F = 2.66$; $p = 0.10$). The relationship between MetS and LVM H2.7 remained statistically significant ($p < 0.001$) in both sexes, in multiple regression analyses, even after adjustment for potential confounding factors.

Conclusions. Our study seems to suggest that the relationship between MetS and LV mass is not significantly affected by gender, being LV mass increased in both hypertensive women and men with MetS.