Prevention

LEFT VENTRICULAR HYPERTROPHY VERSUS ARTERIAL STIFFNESS AS PREDICTORS OF CORONARY ARTERY DISEASE IN ESSENTIAL HYPERTENSION: DATA FROM A GREEK 6-YEAR FOLLOW-UP STUDY

Poster Contributions
Poster Hall B1
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Background: The aim of the present study was to compare the predictive role of arterial stiffness and left ventricular mass index (LVMI) for the incidence of coronary artery disease (CAD) in essential hypertensive patients.

Methods: We followed up 1033 essential hypertensives (mean age 55.6 years, 538 males, office blood pressure (BP)=145/92 mmHg) free of cardiovascular disease for a mean period of 6 years. All subjects had at least one annual visit and at baseline underwent complete echocardiographic study for estimation of LVMI, while arterial stiffness was evaluated on the basis of carotid to femoral pulse wave velocity (PWV), by means of a computerized method (Complior SP). The distribution of PWV was split by the median (8.1 m/sec) and accordingly subjects were classified into those with high (n=520) and low values (n=513). Moreover, LV hypertrophy (LVH) was defined as LVMI ≥125 g/m2 in males and LVMI ≥110 g/m2 in females, while CAD was defined as the history of myocardial infarction or significant coronary artery stenosis revealed by angiography or coronary revascularization procedure.

Results: The incidence of CAD over the follow-up period was 2.8%. Hypertensives who developed CAD (n=29) compared to those without CAD at follow-up (n=1004) had at baseline higher LVMI (124.5±27.9 vs 103±26.2 g/m2, p<0.0001), prevalence of LVH (48% vs 25%, p=0.022) and prevalence of high PWV levels (69% vs 48%, p<0.05), whereas no difference was observed with respect to baseline office BP, renal function and lipid levels (p=NS for all). Univariate Cox regression analysis revealed that baseline PWV levels predicted CAD (hazard ratio=1.218, p=0.025). However, in multivariate Cox regression model baseline glomerular filtration rate (hazard ratio=1.020, p=0.026) and LVMI (hazard ratio=1.021, p<0.0001) but not baseline PWV turned out to be independent predictors of CAD.

Conclusion: In essential hypertensive patients LVMI predicts future development of CAD, whereas baseline PWV exhibits no independent prognostic value. These findings support that LVMI constitutes a superior prognosticator of events than PWV and its estimation is essential in order to improve overall risk stratification in hypertension.