HYPERTENSION

Diabetes and LV mass predict progression of prehypertension to hypertension

A recent study has found that diabetes mellitus and left ventricular (LV) hypertrophy predict progression of prehypertension to hypertension independently of baseline blood pressure. The researchers say that their findings indicate that individuals with prehypertension who have diabetes or increased LV mass should be referred for extensive clinical evaluation.

“Diabetes and LV mass were significant predictors of 4-year incident arterial hypertension”

Prehypertension often coexists with cardiovascular risk factors, such as obesity, diabetes mellitus, dyslipidemia, and atherosclerosis. These factors may influence the risk of progression to hypertension; however, the contribution of different factors to the risk of progression is unclear. In their study, Marina De

Marco and colleagues examined which cardiovascular and metabolic parameters predicted progression of prehypertension to overt hypertension in a population with a high prevalence of obesity and diabetes.

The researchers analyzed data from 625 untreated prehypertensive participants of the Strong Heart Study—a prospective cohort study of American Indian individuals. The prevalence of cardiovascular risk factors in the selected cohort was high—22% had diabetes mellitus, 55% were obese, 33% were smokers, and 17% had LV hypertrophy. In addition to standard laboratory tests, the researchers used echocardiography to evaluate LV mass. Multivariate regression analyses were then used to identify independent predictors of incident hypertension.

The researchers found that 38% of participants developed arterial hypertension over 4 years of follow-up. Diabetes and LV mass were significant

predictors of 4-year incident arterial hypertension, independent of baseline blood pressure. “Interestingly, once diabetes, high [baseline] systolic blood pressure, and LV mass were considered, no independent association of other metabolic factors with progression to hypertension were identified,” explains De Marco.

The researchers say that further studies are needed to investigate whether their findings are applicable to populations with different genetic backgrounds. They also hope to examine the utility of echocardiography in the risk stratification of prehypertension and to assess the effect of early lifestyle interventions on the course of progression to hypertension.

Susan J. Allison

Original article De Marco, M. *et al.* Cardiovascular and metabolic predictors of progression of prehypertension into hypertension: the Strong Heart Study. *Hypertension* 54, 974–980 (2009)