**RISK FACTORS ASSOCIATED WITH DIAGNOSTIC DISCREPANCY FOR LEFT VENTRICULAR HYPERTROPHY BETWEEN ELECTROCARDIOGRAPHY AND ECHOCARDIOGRAPHY**

**M. Pareek1**, S.S. Petersen1, L.R. Pedersen1, M.L. Nielsen1, S.Z. Diederichsen1,

M. Leosdottir2, P.M. Nilsson3, A.C.P. Diederichsen4, M.H. Olsen1

1. Cardiovascular and Metabolic Preventive Clinic, Department of Endocrinology, Centre for Individualized Medicine in Arterial Diseases (CIMA), Odense University Hospital, Odense, Denmark

2. Department of Cardiology, Skane University Hospital, Malmo, Sweden

3. Department of Clinical Sciences, Lund University, Skane University Hospital, Malmo, Sweden

4. Department of Cardiology, Odense University Hospital, Odense, Denmark

*Background and objective*: ECG is recommended for assessment of left ventricular hypertrophy (LVH) in asymptomatic adults with hypertension or diabetes. The sensitivity of echocardiography to detect LVH is greater than that for ECG, but the latter is simple, inexpensive, and has high specificity. The objective of this study was to investigate the influence of cardiovascular risk factors, including fasting plasma glucose (FPG), on the association between electrocardiographic and echocardiographic LVH in an elderly population.

*Materials and methods*: Study subjects were derived from the Malmo Preventive Project Re-Examination Study, a population-based cohort study, conducted 2002-2006. Cross-sectional associations between electrocardiographic and echocardiographic LVH, defining LVH according to the Sokolow-Lyon voltage combination, Cornell voltage-duration product, or left ventricular mass index (LVMI) were tested. Differences between standardized LVMI and Sokolow-Lyon voltage combination or Cornell voltage-duration product (absolute value/cut-off value for LVH) were used as outcome variables in order to identify explanatory variables associated with diagnostic discrepancies between ECG and echocardiography.

*Results*: Of the 1455 subjects included, 75% did not display any signs of LVH, 7% had LVH defined by ECG only, 12% had LVH defined by echocardiography only, and 6% had LVH on both ECG and echocardiography. Older subjects and those with higher blood pressure were more likely to have a relatively greater LVMI on echocardiography than that predicted on ECG (odds ratio: 1.95 per 10 years (95% confidence interval (CI): 1.53-2.47) and odds ratio: 1.15 per 10 mmHg (95% CI: 1.08-1.23), respectively, p<0.0001 for both). In addition, discrepancy was also seen in subjects receiving antihypertensive medication (odds ratio: 1.36 (95% CI: 1.04-1.79), p=0.03), but FPG did not independently influence discrepancy between ECG and echocardiography.

*Conclusion*: Age, blood pressure, and use of antihypertensive medication were associated with a greater risk of non-consistency between LVH determined by ECG and echocardiography.