

# **PP.02.48 RELATIONSHIP BETWEEN CAROTID INTIMA MEDIA THICKNESS AND CARDIOVASCULAR RISK ASSESSMENT**

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**Objective:** There is growing evidence of the prognostic importance of carotid intima-media thickness (c-IMT) in cardiovascular risk. It has been suggested it improves cardiovascular risk assessed by calculator risk functions as SCORE function. The aim of this study was to investigate the relationship if any, between c-IMT and the coronary risk at 10 years estimated by the Framingham-REGICOR risk function in a cohort of hypertensive Spanish population.

**Design and method:** A cross-sectional study was conducted among a cohort of 251 hypertensive subjects. Clinical, biological and carotid ultrasound assessments were performed in order to detect cardiovascular risk factors and c-IMT. The Framingham-REGICOR risk chart was used to calculate coronary morbidity.

**Results:** There were significant differences on c-IMT values between patients with low REGICOR risk and moderate / high risk. There were no differences between moderate and high risk patients. (C-IMT: 0,73; 0,85; 0,87 mm respectively;  $p < 0,05$ ). Carotid-IMT positively correlates with cardiovascular risk estimations assessed by Framingham-REGICOR risk function ( $r: 0,362$ ;  $p < 0,005$ ).

**Conclusions:** Carotid-IMT positively correlates with cardiovascular risk stratification obtained with the Framingham-REGICOR function in a cohort of Spanish hypertensive subjects. Those subjects with moderate risk have similar c-IMT than those with high risk, thus, carotid ultrasonography may be essential to early detection of target organ damage in estimated moderate cardiovascular risk hypertensive subjects in addition to general-population based scores.

# **PP.02.49 LEFT VENTRICULAR HYPERTROPHY AND AMBULATORY BLOOD PRESSURE MONITORING**

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**Objective:** To examine the relationship between ambulatory blood pressure monitoring parameters (ABPM) with the electrocardiographic criteria that evaluate the Left-ventricular hypertrophy (LVH) in adults.

**Methods:** This study analysed 1544 subjects from the EVIDENT study (mean age  $55 \pm 14$  years; 61% women). Standard ECG was used to detect LVH, with the evaluation of 10 criteria. Office and ABPM was performed and we analyzed 24hours systolic blood pressure (SBP) and diastolic blood pressure (DBP), 24hours maximum SBP, % time awake SBP above 135 mmHg and % time sleep SBP above 120 mmHg.

**Results:** LVH according to some electrocardiographic criteria was recorded in 11.30% of the patients (16.60% in males and 7.70% in females). The patients with LVH were older and had higher values of office and 24hours blood pressure, greater presence of males, obesity and diabetes, and more patients on antihypertensive and lipid-lowering drugs. We did not observe differences in the circadian pattern of blood pressure between the two groups. In the multiple logistic regression analysis, the association between parameters of ABPM and LVH, after adjustment for age, sex, BMI and heart rate, maintained the statistic significance.

**Conclusions:** 24 hours systolic and diastolic BP, maximum SBP and the percentage of time that awake SBP is above 135 mmHg or sleep SBP above 120 mmHg, showed a positive correlation with the electrocardiographic criteria assessing Left-ventricular hypertrophy. The association of ABPM parameters and the presence of LVH remained in a logistic regression model after adjusted by confounders.

# **PP.02.50 TEN YEARS PROGNOSTIC SIGNIFICANCE OF ELECTROCARDIOGRAPHIC LEFT VENTRICULAR HYPERTROPHY IN PATIENTS WITH ARTERIAL HYPERTENSION**

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**Objectives:** The aim of the study was to examine ten years prognosis in patients (pts) with positive Lyon-Sokolow score and Cornell voltage QRS duration product and presence of echocardiographic left ventricular hypertrophy (LVH).

**Design and methods:** We examined 90 pts (56 male and 34 female; mean age  $55.2 \pm 8.3$  years) with echocardiographic LVH. The LVH cutpoints were  $125 \text{ g/m}^2$  for male and  $110 \text{ g/m}^2$  for female. Electrocardiographic LVH was defined as the presence of Lyon-Sokolow score (LS)  $> 38 \text{ mm}$  and Cornell voltage QRS duration product (CP)  $> 2.440 \text{ mm} \cdot \text{sec}$ . The clinical and laboratory examination, electrocardiography, echocardiography, exercise testing, and 24-hours ambulatory blood pressure monitoring were done.

**Results:** Average left ventricular mass index (LVMI) was  $171.9 \pm 32.4 \text{ g/m}^2$  and duration of hypertension was  $12.3 \pm 7.9$  years. During eight years of follow-up in 26 (28.9%) pts occurred cardiovascular and cerebrovascular adverse events (ACE = myocardial infarction, cardiac or sudden death, angina pectoris, cerebrovascular insult). At the beginning of the study pts with ACE had greater: LVMI ( $192.3 \pm 37.5 \text{ g/m}^2$  vs.  $164.1 \pm 26.2 \text{ g/m}^2$ ;  $p < 0.001$ ). Patients with ACE had greater QTc interval dispersion than patients without ACE ( $70.6 \pm 19.3 \text{ ms}$  vs.  $55.0 \pm 20.3 \text{ ms}$ ;  $p < 0.01$ ). There were positive correlations between LVMI and LS ( $r = 0.412$ ;  $p < 0.001$ ) and CP ( $r = 0.407$ ;  $p < 0.001$ ). ACE occurred in 7 (58.3%) pts of 12 pts with positive LS, and in 19 (24.3%) pts of 78 pts with negative score (odds ratio 4.35; 95% CI 1.23 to 15.31). ACE occurred in 10 (55.5%) pts of 18 pts with positive CP and in 16 (22.2%) pts of 72 pts with negative product (odds ratio 4.37; 95% CI 1.48 to 12.92).

**Conclusion:** Patients with echocardiographic LVH and positive LS and/or CP have additional risk for new cardiovascular adverse events than patients without electrocardiographic LVH during eight years of follow-up and treatment.

# **PP.02.51 LONG-TERM OUTCOME IN ESSENTIAL HYPERTENSIVE PERSONS WITH DIFFERENT TYPES OF LEFT VENTRICULAR HYPERTROPHY AND OVERT METABOLIC SYNDROME**

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**Objective:** To assess retrospectively total mortality in essential hypertensive persons with overt metabolic syndrome (MS) who had concentric (CLVH, 1st group), eccentric (ELVH, 2nd group) left ventricular hypertrophy and normal left ventricular mass (non-LVH, 3rd group).

**Design and methods:** Using Kaplan-Meier method there was estimated total mortality of 76 patients. Average follow-up was 4.9 yrs. Included subjects of each group were balanced on age, body mass index (BMI). At inclusion moment CLVH was confirmed in 32 persons (mean age  $62.6 \pm 1.5$  yrs, 38% males, 75% type 2 diabetes mellitus (DM), 22% myocardial infarction (MI) in history, BMI  $33.7 \pm 1.7 \text{ kg/m}^2$ ); ELVH was confirmed in 30 patients (mean age  $65.8 \pm 4.7$  yrs, 43% males, 60% type 2 DM, 27% MI in history, BMI  $33.1 \pm 1.8 \text{ kg/m}^2$ ); absence of LVH was confirmed in 14 patients (mean age  $64.3 \pm 8.1$  yrs, 64% males; 29% type 2 DM, 7% MI in history, BMI  $34.5 \pm 2.9 \text{ kg/m}^2$ ). Baseline office pulse pressure (mmHg) constituted  $66.8 \pm 11.6$  (CLVH),  $61.1 \pm 12.2$  (ELVH),  $52.7 \pm 8.3$  (non-LVH) (1st vs 2nd group –  $p > 0.05$ ; 1st and 2nd vs 3rd group –  $p < 0.05$ ). Baseline triglycerides level (mmol/L) accounted for  $1.9 \pm 1.0$  (CLVH),  $1.8 \pm 0.9$  (ELVH),  $2.0 \pm 0.5$  (non-LVH) ( $p > 0.05$  for all groups). Baseline fasting plasma glucose level (mmol/L) constituted  $9.1 \pm 3.3$  (CLVH),  $7.5 \pm 1.6$  (ELVH),  $7.1 \pm 1.1$  (non-LVH) (1st vs 2nd and 3rd group –  $p < 0.05$ ; 2nd vs 3rd group –  $p > 0.05$ ). LV myocardial mass index ( $\text{g/m}^2$ ) accounted for  $148 \pm 21.7$  (CLVH),  $153 \pm 16.1$  (ELVH),  $96 \pm 10.2$  (non-LVH) (1st vs 2nd group –  $p > 0.05$ ; 1st and 2nd vs 3rd group –  $p < 0.01$ ). Data are specified as mean  $\pm$  standard deviation or as percents (%).

**Results:** Total 5-year mortality accounted for 41% among CLVH patients, 20% among ELVH ones, 22% among non-LVH subjects (1st vs 2nd and 3rd group –  $p < 0.01$ ; 2nd vs 3rd group –  $p > 0.05$ ).

**Conclusions:** Apparently combination of concentric LVH and overt metabolic syndrome in hypertensive persons has a greater impact on the long-term outcome than combination of eccentric LVH (or non-LVH pattern) and overt MS in such patients.