**P-260**
**IMPROVED PERFORMANCE OF TRADITIONAL ECG FOR DIAGNOSIS OF LEFT VENTRICULAR HYPERTROPHY IN HYPERTENSION**
Fabio Angeli, Paolo Verdechia, GianPaolo Reboldi, Roberto Gattobigio, Mariagrazia Sardone, Carlo Porcellati.
Dipartimento Malattie Cardiovascolari, Ospedale R. Silvestrini, Perugia, Italy; Dipartimento di Medicina Interna, Università di Perugia, Perugia, Italy.

In order to improve performance of traditional electrocardiography (ECG) for diagnosis of left ventricular hypertrophy (LVH), we developed a new index defined by a typical strain pattern or a modified Cornell voltage (R wave amplitude in aVL, plus (1/2 of the S wave amplitude in V5) x body mass index (BMI) (kg/m²)). ROC curve-based partition value for LVH is 420 mV·kg/m². Halving S wave in V5 and adjustment for BMI result from multivariate analyses of ECG variables for prediction of LV mass. We examined 2612 untreated subjects (age 50±12, 56% men) with essential hypertension and good quality ECG and echo tracings. Prevalence of LVH at echo (LV mass > 51.0 g/height—2.7) was 31.1%. The following ECG criteria for LVH were compared with the new index: (a) Romhilt-Estes score > 5 points, (b) Sokolow-Lyon voltage; (c) Traditional Cornell voltage (S wave in V5 plus R wave in aVL > 2.0 mV (women) and 2.8 mV (men); (d) Perugia score (typical strain pattern or Cornell voltage > 2.0 mV (women) and 2.4 mV (men). As shown in the figure, the modified Cornell voltage resulted in a significantly greater area under the ROC curve when traditional Cornell voltage (p<0.0001) and Sokolow-Lyon voltage (p<0.0001). Sensitivity, specificity and positive and negative predictive value of the new index were 36.9%, 91.2%, 66% and 76% respectively. Other ECG criteria for LVH including Sokolow-Lyon, Romhilt-Estes, Cornell, and Perugia, achieved a poorer performance, with sensitivities of 17.4%, 10.7%, 14.9%, and 27.5% respectively. Prevalence of ECG LVH with the new index was 18.5%. In conclusion, performance of traditional ECG for diagnosis of LVH in hypertension can be improved by using a modified Cornell voltage which adjusts for BMI.

Key Words: ECG, Hypertension, Left Ventricular Hypertrophy

**P-261**
**AN A1166C POLYMORPHISM OF THE ANGIOTENSIN II AT1 RECEPTOR GENE DOES NOT INFLUENCE THE DIAGNOSIS OF ARTERIAL HYPERTENSION DURING 7 YEARS FOLLOW UP**
1st Dept. of Cardiology, Medical University in Gdańsk, Gdansk, Poland; Dept. of Biology and Genetics, Medical University in Gdańsk, Gdansk, Poland.

The renin-angiotensin-aldosterone system plays important role in the pathogenesis of the cardiovascular diseases. The aim of our study was to assess influence of the A1166C polymorphism of the angiotensin II AT1 receptor gene on arterial hypertension.

We have examined 430 subjects, Gdansk Port workers, mean age 42±8 years, 337 men (mean age 45±8 years) and 93 women (mean age 43±7 years), who did not have any symptoms of coronary artery disease, stroke or other cardiovascular diseases. Blood pressure measurements, anamnesis and physical examination were performed at baseline and repeated after 7 years. The polymerase chain reaction and agarose gel electrophoresis were used to determine the angiotensin II AT1 receptor genotype.

In the observed population 238 subjects had AA, 160 AC and 32 had CC polymorphic variant of the angiotensin II AT1 receptor gene. During the 7 years follow up arterial hypertension was diagnosed in 63 (27.5%) subjects with AA, 42 (27.4%) with AC and 5 (15.6%) with CC polymorphic variant, NS. There was no significant difference in hypertension treatment prevalence: 57 (24.9%) in AA group, 38 (25.0%) in AC and 5 (15.6%) in GC group, NS. There was also no significant difference in blood pressure level after 7 years between subject with the angiotensin II AT1 receptor gene polymorphic variants, the systolic blood pressure (SBP) was 135,7±19 mmHg in AA subjects; 135,8±18 mmHg in AC and 133,7±17 mmHg in CC subjects, NS. The diastolic blood pressure (DBP) was 85,8±12 mmHg in AA subjects, 86,1±10 mmHg in ID and 84,0±10 mmHg CC, NS. Neither the prevalence of arterial hypertension nor the blood pressure level differed significantly in subgroups of men and women, low and high baseline blood pressure or over and under 50 years age.

It seems that the presence of a particular the angiotensin II AT1 receptor gene polymorphic variant does not influence the prevalence of arterial hypertension diagnosis during 7 years of follow up.

Key Words: Angiotensin II AT1 Receptor Gene Polymorphism, Hypertension

**P-262**
**ASSOCIATION OF TESTOSTERONE DEFICIENCY AND SYMPTOMS WITH HYPERTENSION: A SUBSET ANALYSIS FROM THE HYPOGONADISM IN MALES (HIM) STUDY**
Valerie Berry, Cecilia McWhirter. Clinical Operations and Medical Affairs, Solvay Pharmaceuticals, Inc., Marietta, GA; Women’s Health, Solvay Pharmaceuticals, Inc., Marietta, GA.

Hypogonadism (total testosterone [TT] <300 ng/dL) is associated with signs and symptoms that include erectile dysfunction, bone mineral density loss, and decreased quality of life. The goal of this study was to estimate the prevalence rate of hypogonadism in men presenting to primary care practices, focusing on those with a history of hypertension.

Men recruited at 95 primary care centers were eligible to participate if they were aged ≥45 years and provided written informed consent (regardless of reason for visit). Eligible patients underwent testosterone assessment (TT, free testosterone [FT], and bioavailable testosterone [BAT]) by a blood draw obtained between 8 am and 12 pm. Patients were asked about common symptoms of hypogonadism including sexual dysfunction, fatigue/weakness, and mood changes. Prevalence rates were estimated for the total sample and the subset with a history of hypertension.

Of 2162 men enrolled with evaluable TT, 1226 had a history of hypertension. The crude prevalence rate of hypogonadism (based on TT) for all patients was 38%. Similar trends were observed with FT and BAT. Of 2162 patients enrolled in the study, 836 patients were hypogonadal: of these, 80 were receiving testosterone treatment. For the patients not receiving testosterone, 756 (36.3%) had TT <300 ng/dL; in those with a history of hypertension, the prevalence rate of hypogonadism was 42.4%. In hypertensive patients, the relative risk of hypogonadism was 1.84 (95% confidence interval, 1.53-2.22).

Key Words: Angiotensin II, Hypertension, Testosterone Deficiency, Symptom Assessment.
Decreased ability/frequency to perform sexually was the most common symptom of hypogonadism among these men, reported by 55.8% (P=0.014 vs eugonadal group).

Men presenting to the primary care office with a history of hypertension have a higher crude prevalence of hypogonadism than men without a history of hypertension. The decrease in ability/frequency to perform sexually was statistically significant in hypogonadal versus eugonadal hypertensive men. Based on these results, it may be prudent to obtain blood testosterone concentrations in hypertensive men.

Key Words: Epidemiology, Hypertension, Hypogonadism

P-263
HISTORY OF HYPERTENSION IS ASSOCIATED TO 5-YEAR NON SUDDEN CARDIOVASCULAR MORTALITY IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION WITHOUT HEART FAILURE
Giuseppe Bertoni, Rocco Cordiano, Rosa Palmieri, Stefania Petacco, Valeria Pagliara, Attilio Biagini, Paolo Mormino, Paolo Palatini, Cardiology, Conegliano General Hospital, Conegliano, TV, Italy; Cardiology, Adria General Hospital, Adria, RO, Italy; Cardiology, Bassano General Hospital, Bassano, VI, Italy; Cardiology, Cairo Montenotte General Hospital, Cairo Montenotte, SV, Italy; Clinica Medica IV, University of Padova, Padova, PD, Italy.

Influence of history of hypertension (HT) over long-term mortality after myocardial infarction (MI) is uncertain. Since presence of heart failure (HF) is crucial for treatment and prognosis of MI, we investigated whether HT influences mortality in the patients with and without HF. This is a prospective study on 505 consecutive, unselected, caucasian race patients admitted to 3 coronary care units for definite MI in north Italy. HF was evaluated according to Killip classification (class 1-4) on the first week from admission. All patients completed 5 years follow up (global mortality, non sudden cardiovascular mortality (non-SCVM) were considered as outcomes). Baseline variables were age, gender, diabetes, HT, history of hypercholesterolemia, history of angina or MI, CK-MB peak, revascularization, ACE-I and β-blocker therapy. Three hundred and ten patients (mean age 63.1±11.9 years, 20% female, 43% HT) had no HF and 195 (mean age 71.9±10.2 years, 43% female, 52% HT) had. Among no-HF patients, global mortality rate was 18% in NT and 29% in HT (p=0.02) and non-SCVM was 6% in NT and 16% in HT (p=0.002). Among HF-patients, global mortality rate was 53% in NT and 65% in HT (ns) and non-SCVM was 29% in NT and 49% in HT (p=0.003). At bivariate analysis, HT was associated to global mortality only in the patients without HF (RR=1.7,CL=1.1-2.7, p=0.02) while it was associated to non-SCVM both in no-HF (RR=3.0,CL=1.5-6.6, p=0.002) and HF group (RR=2.0,CL=1.3-3.2, p=0.003). No associations were found between HT and SD and non-CVM. After adjustment, HT remained independently associated to non-SCVM (RR=2.3,CL=1.1-5.4, p=0.03) along with age (p=0.0002) and diabetes (0.0003), while HT was no longer associated in the HF patients.

Conclusion: HT is independently associated to 5-year non-SCVM in the patients with MI without HF. This observation strengthens the link between HT and the worsening of the atherosclerotic vascular disease.

Key Words: Heart Failure in Myocardial Infarction, History of Hypertension, Mortality

P-264
SECULAR TRENDS IN HEART RATE, BLOOD PRESSURE COMPONENTS AND HYPERTENSION PREVALENCE IN YOUNG ADULTS, 1949 TO 2004: ANALYSES OF CROSS-SECTIONAL STUDIES
Amanda Black, Liam Murray, George Davey Smith, Chris Cardwell, Peter McCarron, Epidemiology and Public Health, Queen’s University Belfast, Belfast, United Kingdom; Social Medicine, University of Bristol, Bristol, United Kingdom.

As few studies have comprehensively examined hemodynamic cardiovascular risk factors in youth, this study was designed to investigate the trends in blood pressure, pulse pressure, heart rate levels and hypertension prevalence in young adults between 1949 and 2004.

We studied 5 240 (55% male and 45% female) students who entered Queen’s University Belfast (QUB) as first year undergraduates between 1975 and 2004. These students comprised a 13% random sample of all students who entered university between 1975 and 1992, and a further 834 undergraduates (7%) who were randomly selected from all first year undergraduates who registered with University Health Centre from 2001-2004. Although original student records from 1949 to 1974 were destroyed, aggregate unadjusted findings from 1949-59 were available from previously published studies. Among students aged 16-24 we estimated the trend in mean heart rate, systolic and diastolic blood pressure and pulse pressure using linear regression analysis with year of entry as a categorical, and also as a continuous variable. χ² test for trend was used to assess the change over time in the proportion of hypertensive (≥140/90 mm Hg) and normotensive individuals (<140/90 mm Hg).

The earlier observations showed that blood pressure, pulse pressure and heart rate declined between 1949 and 1959 in both sexes. After controlling for age, BMI height, smoking and physical activity there was strong evidence to indicate that these declines continued to the late 1980s in males (p<0.001). These trends were also generally observed in female students although diastolic blood pressure remained stable over the period. These favourable downward trends reversed thereafter, showing a deleterious increase to 2004 (p<0.001). Hypertension prevalence showed a similar pattern, declining between 1949 and late 1980s, followed by a subsequent rise to 2004 in both sexes.

The decline in heart rate from 1949 observed in our study may account for some of the reduction in cardiovascular disease seen in the latter half of the 20th century. However the observed recent increase in these cardiovascular risk factors in young men and women is of concern and may have adverse implications for future patterns of cardiovascular disease.

Key Words: Cardiovascular Disease, Hemodynamics and Hypertension, Secular Trends

P-265
PREVALENCE OF TINNITUS IN A POPULATION OF HYPERTENSIVE PATIENTS REFERRING TO A HYPERTENSIVE CLINIC
Claudio Borghi, Maria G Prandini, Charoula C Tsamita, Ada Dormi, Daniela Degli Espositi, Eugenio Consentino, Maddalena Veronesi, Ettore Ambrosioni, Internal Medicine, University of Bologna, St.Orsola-Malpighi Hospital, Bologna, Italy.

Background: Tinnitus is still a major clinical problem due to the difficulties concerning its etiology, pathogenesis and possibility to find an effective therapy. A previous epidemiology survey carried out in Italy showed that the prevalence of tinnitus in the general population is 14%. To our knowledge, no data are reported in the literature about the prevalence of tinnitus in the hypertensive population and its relationship with blood pressure (BP) values.

Objective of the Study: The aim of the present study was to evaluate the prevalence of tinnitus in a population of hypertensive patients referring to our Hypertensive Clinic.