POSTER SESSION

POSTER SESSION 34
GENETICS/MOLECULAR BIOLOGY

PP.34.132 GENETIC POLYMORPHISM DETERMINES CORONARY ARTERY DISEASE (CAD) AND ACUTE CORONARY SYNDROME (ACS) IN HYPERTENSIVE PATIENTS: A DOUBLE- CENTRE STUDY OF TWO CANDIDATE GENES AND THEIR VARIANTS

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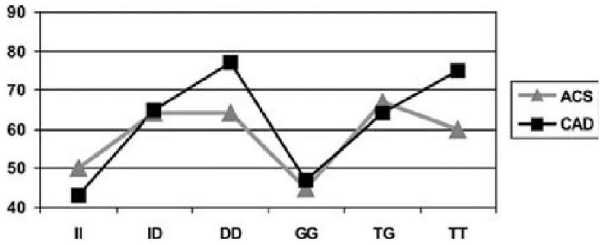
Objective: To determine probability of CAD and ACS appearance in relation to angiotensin converting enzyme (ACE I/D) and endothelial-NO-synthase (eNOS G894T) genes' polymorphisms in Eastern European population.

Design and Methods: Double-centre West Ukrainian study involves 249 mild-severe hypertensive (AH) patients: 70 with CAD (27 with ACS, 43 with stable angina (SA)), 126 female, 123 male, mean age 50.5 ± 10.4 yrs; 66-mild, 114-moderate, 69-severe AH. ECG, Troponin-test, Echo-CG, BP and biochemical analyses were performed. Probability of ACS and CAD gravity (ACS vs SA, CAD vs AH) was calculated with Bayes' equation based on specificity, sensitivity and data prevalence. Categorical results of genotypes compared with c^2. Genes' polymorphism of ACE (I/D) and eNOS (G894T) assessed with PCR method.

Results: ACE gene: in DD + I/D + II genotypes probability of ACS among patients with CAD and AH was non-significantly higher in D-allele carriers vs II-genotype carriers (63.6% and 64.5% vs 50.0%, 95%ÑI: 0.14-0.86, p > .05). The highest risk of CAD among AH patients was revealed in D-allele carriers (77.1% and 64.6% vs 42.9%, 95%CI: 0.32-0.88, p < .00). Negative CAD and ACS prognostic value of eNOS gene was in T-allele carriers: TT + TG vs GG (75.0%, 63.6% vs 45.5%, 95%ÑI: 0.22-0.99, p < .00) and (56.0%, 68.7% vs 45.4%, 95%ÑI: 0.33-0.81, p > .05), accordingly.

Conclusion: Highly negative prognostic value for CAD (= 75%) in AH patients was in D-allele carriers of ACE gene and TT-genotype carriers of eNOS gene (p < .000). ACE I/D and eNOS G894T genes' polymorphisms didn't influence reliably on the risk of ACS appearance in CAD and AH patients.



PP.34.133 PRAISE A FAIR DAY WITH TWINS: CENTRAL BLOOD PRESSURE, PULSE PRESSURE AND ARTERIAL STIFFNESS

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Objective: Central blood pressure (SBPao), peripheral and aortic pulse pressure (PP, PPao) have consistently been shown to be a more powerful predictor of cardiovascular events than traditional cuff blood pressure measurements taken at the arm. Twin studies by comparing identical with non-identical twins produce information on the relative contribution of genes and environment, and how the two interact.

Design and Method: 230 monozygotic (MZ) and 159 dizygotic (DZ) (Italian, Hungarian and American) twin pairs underwent oscillometric arterial stiffness test (TensioMed Arteriograph, TensioMed Ltd., Budapest) to measure Augmentation index on brachial artery and aorta (Aixbra, Aixao), SBPao and pulse wave velocity on aorta (PWVao) which showed strong correlation with the invasively obtained values. Statistical analysis was conducted using MPlus Version6.

Results: Age, sex and country-adjusted heritability of SBPao, PP and PPao indicated 45.5% (95% confidence interval /CI/, 10.5 to 60.0%), 46.6% (95% CI, 29.8 to 58.0%), and 39.9% (95% CI, 1.4 to 53.9%). Unshared environmental effects accounted for the largest part of variance, respectively (Table 1). Model fit was normal. Bivariate saturated model showed high and significant correlations between SBPao, PPao and arterial stiffness measures (r = 0.588, p < 0.001 between SBPao and Aixbra; r = 0.587, p < 0.001 between SBPao and Aixao; r = 0.475, p < 0.001 between SBPao and PWVao; r = 0.582, p < 0.001 between PPao and Aixbra; r = 0.581, p < 0.001 between PPao and Aixao; r = 0.456, p < 0.001 between PPao and PWVao). Non-significant correlations were estimated for PP and Aix (r = -0.077, p = 0.057 between PP and Aixbra; r = -0.078, p = 0.055 between PP and Aixao; r = 0.083, p < 0.05 between PP and PWVao).

Conclusions: SBPao, PP and PPao are moderately heritable. High significant correlations were estimated between arterial stiffness, SBPao and PPao suggesting a genetic background. (Supported by Medexpert Ltd, Twins Days Festival Committee, Hungarian Scholarship Board Office, Ministry for Foreign Affairs Republic of Italy.)

Table 1. Parameter Estimates and 95% CIs of the Best-Fitting Univariate Models

Measure	h^2	95% CI	c^2	95% CI	e^2	95% CI	Model fit (p)
SBP^{ao}, mm Hg	0.455	0.105-0.600	0.078	0.000-0.388	0.467	0.382-0.546	0.1464
PP, mm Hg	0.466	0.298-0.580	0.000	0.000-0.027	0.534	0.432-0.625	0.2569
PP^{ao}, mm Hg	0.399	0.014-0.539	0.050	0.000-0.385	0.551	0.447-0.661	0.4399

h^2. indicates heritability; c^2, shared environmental variance component; e^2, unique environmental variance component; and Model fit², Chi-square test of Model fit (p value)

PP.34.134 RELATIONSHIP BETWEEN A46G AND C79G POLYMORPHISMS IN THE β2- ADRENERGIC RECEPTOR GENE AND ESSENTIAL HYPERTENSION RISK AMONG THE HAN CHINESE POPULATION: A META-ANALYSIS

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Objective: To evaluate the relationship between A46G and C79G polymorphisms in the β2- adrenergic receptor gene and essential hypertension among the Han Chinese population.

Methods: We conducted a computerized literature search of PUBMED, EMBASE, CNKI, Wanfang Data and VIP databases (prior to May 2010). Fifteen articles studied on A46G polymorphism and ten on C79G polymor-