

## AB075. Genetic variation in soluble epoxide hydrolase gene and the risk of coronary heart disease in Russians

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**Background:** Single nucleotide polymorphisms (SNPs) in the *EPHX2* gene have been implicated in susceptibility to cardiovascular diseases, including coronary heart disease (CHD). *EPHX2* encodes for soluble epoxide hydrolase, an important enzyme involved in the metabolic breakdown of arachidonic acid-derived vasoactive and anti-inflammatory eicosanoids referred to as epoxyeicosatrienoic acids to their corresponding diols. Our pilot study aimed to investigate whether common SNPs such as rs751141, rs4149253, and rs1042064 of the *EPHX2* gene are associated with susceptibility to CHD in Russian population.

**Methods:** A total of 1,183 unrelated Russian subjects comprising 602 patients with angiographically diagnosed CHD and 581 age- and sex-matched healthy subjects were recruited and their DNA samples were genotyped for the selected SNPs using a high-throughput Mass-ARRAY genotyping platform.

**Results:** No significant associations were found between the

investigated SNPs and CHD risk ( $P > 0.05$ ). A polymorphism rs751141 (amino acid substitution, R287Q) displayed a trend towards association with CHD (odds ratio adjusted by sex and age was 3.02, 95% CI: 0.97–9.43,  $P$  correction = 0.16). SNP-smoking interaction analyses did not identify synergic effects of the studied SNPs and cigarette smoking on the disease risk ( $P > 0.05$ ). A linkage disequilibrium was found between SNPs rs751141 and rs4149253 ( $D' = 0.995$ ), rs751141 and rs1042064 ( $D' = 0.967$ ), rs4149253 and rs1042064 ( $D' = 0.965$ ). Four common haplotypes G-G-T (73%), A-G-C (10%), G-G-C (9%) and G-A-C (7%) have been identified, however, none of them showed a significant association with the risk of CHD in the studied population ( $P > 0.05$ ).

**Conclusions:** The investigated polymorphisms do not contribute to CHD susceptibility in our population. Nevertheless, because of a limited number of SNPs was investigated in this study, definitive conclusions yet to be made in further studies on the contribution of the *EPHX2* gene to the development of CHD in Russians.

**Keywords:** Coronary heart disease (CHD); disease susceptibility; single nucleotide polymorphisms (SNP); epoxyeicosatrienoic acids

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