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ASSOCIATION OF ApoE POLYMORPHISM WITH SERUM LIPIDS IN SERBIAN HEALTHY POPULATION

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Summary: Apolipoprotein E (apoE) genotypes were determined in a subset of 591 subjects by restriction isotyping /MADGE analysis. The characterization of different apoE isoforms (423 subjects) has also been carried out by isoelectric focusing/immunoblotting of plasma. In men, levels of both total and low-density lipoprotein cholesterol among the three apoE genotype groups (E2, E3, E4) differed significantly ($p < 0.05$). The ε2 allele was associated with the lower both total and low-density lipoprotein cholesterol, where the ε4 allele had the opposite effects. In women, no significant effect of apoE polymorphism on serum lipid levels was observed. These data could be taken into consideration in the future evaluation of risk of cardiovascular and/or neurodegenerative diseases in Serbian population.

Key words: apo E, restriction isotyping, lipids, genetic epidemiology, Serbian population.

Introduction

Functionally, apolipoprotein E (apoE) acts as a ligand to assist the catabolism of apoE-containing lipoproteins, chylomicrons, very low density lipoproteins (VLDL), their remnant particles, and with high density lipoproteins (HDL) (1, 2). The other functions and properties ascribed to apoE include its roles in immunoregulation, nerve regeneration, inhibition of endothelial and tumour cell proliferation, modulation of intracellular cholesterol utilization and steroidogenesis in adrenal cells, and either activation or modulation of enzymes such as hepatic lipase (HL), lipoprotein lipase (LPL) and lecithin cholesterol acyltransferase (LCAT) (3–5). ApoE plays a significant role in the pathogenesis of atherosclerosis (6). One of the more provocative and newer functions suggested for apoE is based on observations that apoE is found in amyloid plaques associated with Alzheimer's and Creutzfeldt-Jakob diseases, as well as in a variety of types of cerebral and systemic amyloidoses (7).

The structural gene of apoE containing four exons and three introns is localized on chromosome 19 and is genetically polymorphic with three common alleles, apoε2, ε3, ε4. These alleles code three isoforms of the apoE (E2, E3, E4). The molecular basis of apoE polymorphism is cysteine-arginine interchange (8).

The influence of apoE on lipid levels is often suggested to have major implications for the risk of coronary artery disease; individuals with an ε4 (Cys 112→Arg) allele are at higher risk as compared to ε2 (Arg 158→Cys) allele carriers (9). Apoε4 (Cys 112→Arg) allele frequency has been described as high in Alzheimer's disease and other neurodegenerative disorders (10–12). The common E2 (Arg 158→Cys) isoform exhibits a markedly reduced affinity for hepatic lipoprotein receptors; homozygosity for this isoform is a prerequisite for the type III hyperlipoproteinaemia (13). No data are available to date on the relationship between apoE polymorphism and lipid levels in the Serbian population. Thus, the purpose of the present study was to investigate (in a large sample) the impact of apoE polymorphism on serum lipid concentrations.

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IMPORTANT INFORMATION – PAPER WITHDRAWAL DUE TO SELF-PLAGIARISM

Journal of Medical Biochemistry is the legal successor of the journal **Yugoslav Medical Biochemistry**, and for this reason, it has initiated digitalization of previous editions of Yugoslav Medical Biochemistry to make them available in electronic form in the database on the website of the Society of Medical Biochemists of Serbia (www.dmbj.org.rs)

During the process, the IT department has screened the following scientific papers

Association of ApoE Polymorphiosma with Serum Lipids in Serbian Healthy Population
Sanja Stanković, Vesna Spasojević-Kalimanovska, Dragan Alavantić
Jugoslov Med Biohem 2000:19: 115-120

and

The Effect of a Gender Difference in the Apolipoprotein E Gene DNA Polymorphism on Serum Lipid Levels in a Serbian Healthy Population
Sanja Stanković, Sanja Glišić, Dragan Alavantić
Clin Chem Lab Med 2000; 38(6): 539-544

and discovered **a high level of plagiarism between these two papers – 67%, 45% of which from CCLM. Also, four tables which are identical in both papers were not taken into account, and the trials in both papers were carried out on 591 subjects, which would lead to an even greater percentage of self-plagiarism of the authors. Namely, these are identical papers, which points to the authors' self-plagiarism. Please note that both papers were published almost simultaneously, and the version of the paper which was sent to the CCLM had to undergo certain corrections, which probably led to minimal differences and the change of the title.**

This is a criminal act of autoplagiarism that is not allowed in the scientific community,according to all the rules of the code of ethics relating to the publication of scientific findings.

For these reasons, the Editorial Board of the Journal informed those concerned and retracted the paper first of all from the National Library of Serbia and other databases where our journal is indexed (WAME, COPE, SCOPUS, EMBASE, VINITI, KoBSON, etc.).

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