ApoE GENOTYPE IN ALZHEIMER'S DISEASE DETERMINATION

P-03.1-08

P. Ivanuša[I], N. Nadižar[I], J. Fabjan[I], M. Gregorič Kramberger[II], Z. Pirtošek[II], J. Bon[II], D. Rozman[III], A. Videtič Paska[III]

[I]University of Ljubljana, Faculty of Medicine, Institute of Biochemistry, Pharmacogenetics Laboratory, Vrazov trg 2, 1000 Ljubljana, Slovenia, Ljubljana, Slovenia, [II]Center for cognitive Impairments at the Department of Neourology, University Medical Centre, Ljubljana, Slovenia, Ljubljana, Slovenia, [III]Centre for Functional Genomics and Bio-Chips, Institute of Biochemistry, Faculty of Medicine, University of Ljubljana, Slovenia, Ljubljana, Slovenia

Alzheimer's disease (AD) is a progressive, dementing disorder, usually of middle or late life. It is the most common neurodegenerative disease and represents frequent cause of dementia accounting for roughly half of all cases. A clinical diagnosis of probable AD can be made with confidence if there is a typical insidious onset of dementia with progression and if there are no other systemic or brain diseases that could account for the progressive memory and other cognitive deficits. More than 20 genes affecting the risk of developing Alzheimer's disease have been identified. The strongest association with AD has the apolipoprotein E (APOE) gene. The most common alleles are Apo E4, E3 and E2 in heterozygous or homozygous states. The strongest genetic risk factor for AD is the homozygous ApoE E4/E4. The aim of our study was to identify for the first time the frequency of ApoE alleles in the Slovene population of patients with dementia that have been treated at Center for Cognitive Impairments at the Department of Neourology, University Medical Centre in Ljubljana. The cohort included over 500 patients with dementia in 64 healthy volunteer controls. We isolated DNA from venous blood and determined ApoE genotypes by RT-qPCR on LightCycler (Roche), based on hybridization probes. Initial analyses show that the genotype ApoE E3/E3 was the most common homozygous allele in the Slovene population and genotype ApoE E4/E4 was the least common. The statistical analyses to correlate a particular ApoE genotype and biochemical blood markers with the clinical diagnosis are in progress. The results will provide a new insight in clinical diagnostic value of ApoE genotype for AD in the Slovenian population.