P-703 - MDR1 GENE POLYMORPHISMS IN ALZHEIMER'S DISEASE

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Alzheimer's disease (AD) is a neurodegenerative disorder characterized by extracellular accumulations of amyloid -β (Aβ) peptides. Multidrog resistance 1 (MDR1)/ABCB1 gene encodes P-glycoprotein (P-gp), which play a role in Aβ elimination from the brain. Cerebral amyloid deposition in patients with AD was inversely correlated with brain capillary P-gp expression. Our study was undertaken to confirm the hypothesis that the C3435T (rs1045642) and the G2677T/A (rs2032582) polymorphisms of the MDR1 gene represent risk factors for AD. A total of 242 patients with AD and 226 elderly, cognitively intact, healthy control subjects were recruited. The clinical diagnosis of AD fulfilled the criteria for NINCDS-ADRDA. The genetic analyses were performed by PCR-RFLP. The C/C and C/T genotypes of the C3435T polymorphism was significantly over-represented in AD as compared to HC group ($p< 0.001$). The allele distribution of the C3435T polymorphism also showed statistically significant difference between cases and controls with higher C allele frequency in the AD group ($p< 0.001$). The C allele carriers had a significantly increased risk for AD (OR=3.53, 95%CI:2.19-5.68, $p=0.005$) considering the T/T genotype as reference category (OR=1). The genotype and allele frequencies of the G2677T/A polymorphism did not differ significantly between the AD and HC groups ($p=0.801$ for genotypes, and $p=0.754$ for alleles). Our findings indicate that the C allele of the C3435T polymorphism may confer risk for developing AD. We failed to detect an association between G2677T/A polymorphism and AD. This work was supported by grants from the Hungarian Ministry of Health 052-07/2009 and TÁMOP-4.2.1/B-09/1/KONV-2010-0005.

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