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NO ASSOCIATION BETWEEN RELN RS362719 AND RS7341475 POLYMORPHISMS AND ALZHEIMER'S DISEASE

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Alzheimer's disease (AD) is a progressive neurodegenerative disorder with complex genetic background. *RELN* gene at locus 7q22.1 encodes reelin, a large secreted extracellular matrix protein. Reelin has been linked to processes of synaptic plasticity, learning and memory formation. We investigated the possible association between the RELN rs362719 and rs7341475 polymorphisms and AD risk in itself and in combination with apolipoprotein (APOE) ε4 allele.

DNA sample was collected from 387 patients with late-onset, sporadic AD and 217 elderly, cognitively intact, healthy control subjects. The clinical diagnosis of AD fulfilled the criteria for NINCDS-ADRDA. The genetic analyses were performed by PCR-RFLP and TaqMan real-time PCR methods.

The investigated genotype frequencies were in Hardy-Weinberg Equilibrium for both cases and controls ($p>0.1$). The genotype frequencies of the rs362719 polymorphism did not differ significantly between the AD and control groups (C/C: AD:73.4%, control:72.4%; C/A: AD:24.3%, control:24.4%; A/A: AD:2.3%, control:3.2%; $p=0.800$). Compared with the controls, there was a higher frequency of rs7341475 G/G genotype (AD:67.2%, control:62.8%) and lower frequency of G/A and A/A genotypes in the AD group, however, the difference did not reach statistical significance (G/A: AD:29.0%, control:32.6%; A/A:AD:3.8%, control:4.7%; p=0.542). Logistic regression analyses revealed no interaction effect between RELN and APOE ε2/ε3/ε4 polymorphisms (p>0.05).

This study indicates no individual influence of the RELN rs362719 or rs7341475 polymorphisms on the risk for developing AD. We also failed to detect interaction effect between RELN polymorphisms and APOE ε2/ε3/ε4 polymorphism on the susceptibility to AD. This work was supported by a grant from TÁMOP-4.2.2A-11/1/KONV-2012-0052.

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