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INTERFERON GAMMA +874 T/A GENE POLYMORPHISM IS NOT A RISK FACTOR IN THE PATHOGENESIS OF ALZHEIMER'S DISEASE

A. Juhász, Á. Fehér, Á. Rimanóczy, J. Kálmán, Z. Janka

Department of Psychiatry, University of Szeged, Szeged, Hungary

Inflammatory processes seem to play a role in neurodegenerative diseases such as Alzheimer's disease (AD). Local inflammatory mechanisms can affect neurotoxicity, interfere with beta amyloid expression and metabolism. The increased production of amyloid precursor protein eventually leads to the deposition of amyloid beta. Interferon (INF) gamma plays a pivotal role in the inflammatory processes.

The aim of this study was to evaluate the putative role of INF gamma +874 T/A polymorphism and its association with apolipoprotein E (ApoE) 4 allele in AD.

One hundred and eighty nine healthy controls (HC) and 191 patients with AD were involved in this study. The probable AD patients were diagnosed by NINCDS-ADRDA criteria. The DNA was extracted from whole peripheral blood. INF gamma +874 T/A and ApoE polymorphisms were assessed by the PCR based method.

ApoE 4 allele occurrence in AD was 27% compared to 9% in HC. There were no statistically significant differences in the distribution of INF gamma genotypes (AD: A/A:30.9%, T/A:46.1%, T/T:23.0%; HC: A/A:21.7%, T/A:54.5%, T/T:23.8%, $p=0.110$) or alleles. The INF gamma A/A genotype was more frequent in the presence of ApoE 4 allele in AD (13.6%) than in the HC (4.8%).

Our results confirm the role of ApoE 4 allele in AD. However, no association was found between the INF gamma +874 T /A polymorphism and AD. The simultaneous occurrence of ApoE 4 allele and one of the INF gamma genotypes presumably can not modify the risk for AD. (ETT 198/04/2006 and OTKA K 60589/2006).