Genetic background in antiviral genes are associated with an increased risk of cognitive deterioration and dementia

Alzheimer's disease (AD) is a heterogeneous multifactorial and progressive degenerative dementia. Environmental risk factors are still largely unrevealed in AD; however, they may accumulate with advancing age and play the role of disease multiple triggers in the susceptible brain. Recent genome wide association (GWA) studies reported that the allele ε4 of the apolipoprotein (APOE) gene and single nucleotide polymorphisms (SNP) in other genes regulating inflammation were associated with AD. We previously suggested that all these genes might be components of a complex antiviral defense mechanism. The genetic association of factors regulating antiviral response such as interferon (IFN)-λ, mediator complex (Med) 23 and interferon regulatory factor (IRF)-7 with AD and its clinical progression will be presented. Differences in the genotype distribution of IL28B SNP Med23 genes between AD and CTR were found and appeared to influence the progression of the disease in the APOE ε4 negative elderly. Our findings shows for the first time that a differential genetic background in genes regulating ant-virus responses is associated with an increased risk of AD and influenced the progression of the disease. These data reinforce the notion that viral agents such as EBV and HHV-6 can be risk factors for AD in genetically susceptible elderly.

Biography
Federico Licastro graduated in Medicine in 1977 at the University of Bologna and specialized in Pediatrics in 1980. He won an appointment of Associate Professor of General Pathology in 1984 and in 1987 a second position of Associate Professor of Immunology at the Medical School of the University of Bologna, Italy. He is author and co-author of 261 scientific articles (162 with impact factor and on Pub Med;) and 310 abstracts of scientific meetings. Most papers were focused on immune impairment in subjects with Down Syndrome and AD and genetic risk factors in dementia.

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