M15A. EFFECT OF APOE EPSILON4 ON AGE AT ONSET IN ALZHEIMER’S DISEASE: COMPARISON OF A BRAZILIAN SAMPLE WITH AN ITALIAN SAMPLE
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Background Alzheimer’s disease (AD) is the most common form of dementia affecting the elderly. It is characterized as a progressive and irreversible deterioration of the brain that impairs memory and cognitive functions. Genetics and age play important roles as risk factors for AD. The APOE gene is a major genetic risk factor; some alleles have protective effect, such as ε2, while others have a strong association with the disease, such as ε4. The age has an impact in the incidence, after 65 years old, the chance of developing AD significantly increases every five years. The age at onset (AAO) is an important variable in AD, it is divided in early onset AD (EOAD) and late onset AD (LOAD) and the relationship between them and APOE is the focus of many studies.

OBJECTIVE: To evaluate and compare the effects of APOE ε4 on AAO of AD in samples from two different countries.

Methods 597 subjects previously diagnosed with AD, were selected from two different clinical databases, 123 from a Brazilian sample and 474 from an Italian sample. The subjects were interviewed by collaborators that inquired about medical and disease history and collected genetic data. The data were processed using R software 3.3.1 mclust package version 5.2 to determine the AAO and to draw the samples profiles and the results were compared.

Results The AAO was statistically significant between the two samples, the mean AAO was 79 in the Brazilian sample and 73 in the Italian sample. The frequency of the ε4 allele carrier in the Italian sample was 48.95%.

Discussion The study shows that in the Italian sample the presence of APOE epsilon4 is associated with premature onset only in the late AD subgroup and that there are significant AAO distribution differences between the Italian and the Brazilian samples.

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