LOWER CSF Aβ42 LEVELS IN HEALTHY ELDERLY PERSONS

D. Paternicò1, V. Drago1, L. Bocchio-Chiavetto2, R. Zanardini2, G.B. Frisoni1, LENITEM

1LENITEM Laboratory of Epidemiology, Neuroimaging and Telemedicine, IRCCS San Giovanni di Dio Fatebenefratelli Brescia, Italy, Brescia, Italy

Introduction: Extracellular deposits of synaptotoxic Beta-amyloid (Aβ42) peptides are a major pathological hallmark of Alzheimer's Disease (AD). The deposition of Aβ42 is believed to start several years before the development of clinical symptoms and is indexed by low levels of Aβ42 in the cerebrospinal fluid (CSF). The presence of Aβ42 deposits in the brain of cognitive normal individuals is considered a good preclinical marker to identify cognitively healthy individuals at risk of developing AD. Since the prevalence of AD increases with age, it is predictable that the prevalence of abnormal CSF Aβ42 levels would also increase with age in cognitively healthy individuals.

Aim: The aim of this study is looking at the effect of age on CSF Aβ42 levels in cognitively normal subjects.

Methods: The CSF of 63 healthy subjects (27% females, mean age 55 ± 14 years, range 24 to 88) who underwent spinal anaesthesia for minor surgery, was collected and Aβ42 levels were determined with standardized ELISA sandwich. A 2X2 (apoE ε4 status: heterozygous carriers vs noncarriers X Age: younger vs older than 55 years) ANOVA was performed in order to investigate the effect of age and apoE ε4 on CSF Aβ42 levels.

Results: In the dichotomized analysis, we found a significant main effect for age (p= 0.45) but no significant apoE ε4 allele effect. Older subjects had a 14% lower Aβ42 mean level than younger’s one.

Conclusion: In cognitive normal subjects, independently of Apo E, age affects CSF Aβ42 levels.