UTILITY OF CEREBROSPINAL FLUID MARKERS IN MILD COGNITIVE IMPAIRMENT

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Introduction: In recent years, research effort has aimed at evaluating the performance of Cerebrospinal Fluid (CSF) markers of neurodegeneration in Mild Cognitive Impairment (MCI). A few longitudinal studies suggest that these markers could be useful in identifying MCI cases that latter will progress to Alzheimer’s Disease (AD).

Aims: Evaluate the utility of CSF markers, namely amyloid-b\textsubscript{1-42} peptide (Ab\textsubscript{42}), total tau (t-tau) and phosphorylated tau (p-tau) protein, in the diagnosis and prognosis of MCI.

Methods: A group of 39 MCI patients, followed for at least 2 years, 130 AD patients and 33 controls without cognitive impairment were studied. Baseline CSF levels of Ab\textsubscript{42}, t-tau and p-tau were determined by sandwich ELISA. Patients were genotyped for Apolipoprotein E (ApoE) status.

Results: T-tau and p-tau levels in MCI were comparable to AD patients but significantly higher than in controls, presenting with high sensitivity and specificity figures (>80%). On the contrary, Ab\textsubscript{42} in MCI was similar to controls but significantly higher than in AD patients. These markers were influenced by ApoE genotype, with ApoE-e4 carriers showing significantly higher t-tau and p-tau and lower Ab\textsubscript{42} levels. Moreover, MCI patients that converted to AD had significantly higher baseline t-tau and p-tau levels than non-converters.

Conclusions: This study confirms the utility of CSF t-tau and p-tau in the diagnosis of MCI and in evaluating the probability of conversion to AD.

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