CSF BIOMARKERS IN AD AND OTHER DEMENTING DISORDERS

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Although dementia has early warning signs and symptoms, a “possible” or “probable” diagnosis can be a difficult, lengthy and intensive process. An early diagnosis is even more difficult, since early signs of dementia are very subtle and vague, and may not be immediately obvious. However, early diagnosis is important for a number of reasons, especially as “etiological” therapies become available in the future.

Recently new diagnostic criteria for all stages of Alzheimer’s disease (AD) have been proposed, requiring not only an insidiously progressive impairment of episodic memory, but also supporting evidence from a biomarker of some type. Several modalities show promise as diagnostic tools for AD and other dementias. These include: magnetic resonance imaging (MRI) measurements, positron emission tomography (PET) imaging of glucose metabolism and of amyloid deposits and cerebrospinal fluid (CSF) biomarkers for amyloid deposition and tauopathy, namely β-amyloid 1-42 (Aβ42) and total and phosphorylated forms of tau protein (T-tau and P-tau, respectively).

CSF Aβ42, T-tau and P-tau fulfill the criteria for diagnostically useful biomarkers in AD and have been sufficiently validated in a large number of mono- and multi center studies. They show significant diagnostic value in clinical practice for the diagnosis of AD vs. healthy controls as well as vs. other dementias. They also have prognostic potential for the early diagnosis in the preclinical, predementia stages of the disease and the prediction of conversion from asymptomatic or Mild Cognitive Impairment stage to AD.