Is it possible to differentiate between AD and subcortical vascular disease using biomarkers?

George P. Paraskevas MD, PhD

1st Department of Neurology, National and Kapodistrian University of Athens, Eginition Hospital, Athens, Greece.

Alzheimer’s disease (AD) and vascular dementia (VD) are the most common causes of dementia in the elderly, accounting together for more than 70–75% of the cases. The two conditions often coexist, especially in the elderly, as mixed dementia (MD), a patient group usually undefined. VD comprise a heterogeneous group of sporadic and hereditary diseases of the large and the small blood vessels, presenting with different clinical symptoms. Subcortical vascular disease (SVD) is a relatively homogeneous VD subgroup, mainly entering in AD differential diagnosis. Recently, cerebrospinal fluid (CSF) analysis for dementia biomarkers, namely tau protein in its total (T-tau) or hyper-phosphorylated (P-tau) form and beta amyloid peptide 1–42 (Aβ42) have been recognized to reflect the prevailing hypothesis for its pathogenesis. The typical biochemical profile is a decrease of Aβ42 levels, which is considered to reflect amyloidogenesis, as well as an increase of T-tau and P-tau, which reflect axonal degeneration and tangle formation. The above mentioned biomarkers have been incorporated in the recent diagnostic criteria established by the National Institute on Aging and the Alzheimer’s Association, recommending their use in order to increase the diagnostic confidence in establishing the presence (or the absence) of AD pathophysiological process. This presentation aims to present data on CSF biomarkers as useful a tool for the discrimination among AD, VD due to SVD and MD in every day clinical practice.