Plasma proteomics for the identification of Alzheimer disease.

Less-invasive biomarkers for early Alzheimer disease (AD) are urgently needed. The present study aimed to establish a panel of plasma proteins that accurately distinguishes early AD from physiological aging and to compare the findings with previous reports. Fifty-eight healthy controls (CON) and 109 patients with AD dementia were randomly split into a training (40%) and a test (60%) sample. Significant proteins to differentiate between the CON and AD dementia groups were identified in a comprehensive panel of 107 plasma analytes in the training sample; the accuracy in differentiating these 2 groups was explored in the test sample. A set of 5 plasma proteins was identified, which differentiated between the CON group and the AD dementia group with a sensitivity of 89.36% and a specificity of 79.17%. A biological pathway analysis showed that 4 of 5 proteins belonged to a common network with amyloid precursor protein and tau. Apolipoprotein E was the only protein that was both significant in the present report and in a previous proteomic study. The study provides a piece of evidence in support of the feasibility of a blood-based biomarker approach in AD diagnostics; however, further research is required because of issues with replicability.