学位論文の要旨

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主論文の題名

Plasma protein profiling for potential biomarkers in the early diagnosis of Alzheimer's disease

主論文の要旨

Objectives:

Alzheimer's disease (AD) is the most common cause of dementia in elderly persons. Since the pathology of AD develops slowly from a preclinical or early phase into a fully expressed clinical syndrome, at the time of diagnosis the disease has been progressing for many years. To facilitate the early diagnosis of AD, we performed protein profiling of blood in patients with mild AD as defined by the Functional Assessment Staging (FAST) scale.

Methods:

Plasma samples from mild AD patients and healthy controls were analyzed using two-dimensional differential gel electrophoresis (2D-DIGE) combined with matrix-assisted laser desorption ionization time-of-flight tandem mass spectrometry (MALDI-TOF/TOF/MS) followed by peptide mass fingerprinting.

Results:

Three down-regulated proteins were identified: apolipoprotein A-1, alpha-2-HS-glycoprotein and afamin. Two proteins, including apolipoprotein A-4 and fibrinogen gamma chain, were up-regulated in mild AD patients.

Discussion:

Our results suggest that altered expression levels of these proteins in plasma may yield candidate biomarkers for the early diagnosis of AD.