Cerebrospinal fluid cortisol and clinical disease progression in MCI and dementia of Alzheimer's type.

Increased peripheral and central nervous system cortisol levels have been reported in Alzheimer’s disease (AD) and may reflect dysfunction of cerebral components of the hypothalamic-pituitary-adrenal (HPA) axis. However, brain exposure to high cortisol concentrations may also accelerate disease progression and cognitive decline. The objectives of this study were to investigate whether HPA-axis dysregulation occurs at early clinical stages of AD and whether plasma and CSF cortisol levels are associated with clinical disease progression. Morning plasma and CSF cortisol concentrations were obtained from the subjects with AD dementia, mild cognitive impairment of AD type (MCI-AD), MCI of other type (MCI-O), and controls with normal cognition included in a multicenter study from the German Dementia Competence Network. A clinical and neuropsychological follow-up was performed in a subgroup of participants with MCI-AD, MCI-O, and AD dementia. CSF cortisol concentrations were increased in the subjects with AD dementia or MCI-AD compared with subjects with MCI-O or normal cognition. After controlling for possible confounders including CSF...
measures of amyloid beta1-42 and total tau, higher baseline CSF cortisol levels were associated with faster clinical worsening and cognitive decline in MCI-AD. The findings suggest that HPA-axis dysregulation occurs at the MCI stage of AD and may accelerate disease progression and cognitive decline.