Profiles of amyloid-beta and cytokines: Supposed markers of probable Alzheimers disease.

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The diagnosis of probable Alzheimers Disease (AD) is confirmed only post-mortem. Concentrations of factors potentially involved in the pathogenesis of AD, including amyloid-beta (Ab) protein, proinflammatory cytokines and markers of apoptosis, are elevated in plasma and saliva of subjects with probable AD compared to healthy controls. Subjects with probable AD and age-matched controls were recruited at the UCLA Alzheimers clinic and in Cuneo and Orbasssano, Italy. AD status was established by standard battery of psychiatric assessments (e.g., minimental state examination-MMSE). Plasma and saliva levels of Ab, soluble Fas Ligand (sFasL) and Annexin, and of proinflammatory cytokines (IL-1b, TNF-alpha, IL-6) were tested by commercial ELISA. We tested circadian fluxes of over a dozen cytokines (i.e. pro-inflammatory, TH1, TH2, chemokines) using a method by Linco (St. Charles, MO) that requires only 25 μL fluid for multiple analyses. We observed circadian patterns of proinflammatory, TH1, TH2 cytokines and chemokines in whole saliva from normal healthy men and women with no oral lesions. Administration of a stressful stimulus under experimental conditions (i.e. cold pressor test) led to significant changes in the levels of certain proinflammatory cytokines at 30 min post-stimulus. We noted significant differences in salivary cytokines (e.g. TNF-alpha) and in levels of Ab in probable AD vs. age-matched control subjects. In conclusion, markers in plasma and total saliva, such as proinflammatory cytokines, may serve as confirmatory indicators for the early diagnosis of probable AD.

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