Stage-dependent agreement between cerebrospinal fluid proteins and FDG-PET findings in Alzheimer's disease.

Abstract:
Cerebral hypometabolism and abnormal levels of amyloid beta (A?), total (t-tau) and phosphorylated tau (ptau) proteins in cerebrospinal fluid (CSF) are established biomarkers of Alzheimer's disease (AD). We examined the agreement between these biomarkers in a single center study of patients with AD of severity extending over a wide range. Forty seven patients (MMSE 21.4 ± 3.6, range 13-28 points) with incipient and probable AD underwent positron emission tomography with [18F]-fluorodeoxyglucose (FDG-PET) and lumbar puncture for CSF assays of A?1-42, p-tau181, and t-tau. All findings were classified as either positive or negative for AD. Statistical analyses were performed for the whole sample (n=47) and for the subgroups stratified as mild (MMSE> 20 points, n=30) and moderate (MMSE< 21 points, n=17) AD. In the whole patient sample, the agreement with the FDG-PET finding was 77% (chance-corrected kappa [?] =0.34, p=0.016) for t-tau, 68% (?=0.10, n.s.) for p-tau181, and 68% (?=0.04, n.s.) for A?1-42. No significant agreement was found in the mild AD subgroup, while there was a strong agreement for t-tau (94%, ?=0.77, p=0.001) and p-tau181 (88%, ?=0.60, p=0.014) in the moderate AD group. A significant agreement between the FDG-PET and CSF tau findings in patients with AD supports the view that both are markers of neurodegeneration. CSF
tau proteins and FDG-PET might substitute each other as supportive diagnostic tools in patients with suspected moderate-to-severe Alzheimer's dementia, while this is not the case in subjects at an earlier disease stage.

Zeitschriftentitel / Abkürzung:
Curr Alzheimer Res

Jahr: 2012
Band: 9
Heft / Issue: 2
Seiten: 241-7
Sprache: eng


Print-ISSN: 1567-2050

TUM Einrichtung:
Nuklearmedizinische Klinik und Poliklinik

Occurences:
· Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > Nuklearmedizinische Klinik und Poliklinik > 2012