

Quantification of [18F]florbetaben amyloid-PET imaging in a mixed memory clinic population: The ABIDE project

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Introduction: We investigated amyloid-burden quantification in a mixed memory clinic population.

Methods: [18F]Florbetaben amyloid-PET (positron emission tomography) scans of 348 patients were visually read and quantified using the Centiloid (CL) method. General linear models were used to assess CL differences across syndromic and etiological diagnosis. Linear mixed models were fitted to assess the predictive value of visual read (VR) and CL on longitudinal Mini-Mental Status Examination (MMSE).

Results: CL was associated with syndromic ($F = 4.42$, $p = 0.014$) and etiological diagnosis ($F = -12.66$, $p < 0.001$), with Alzheimer's disease (AD) patients showing the highest amyloid burden (62.9 ± 27.5), followed by dementia with Lewy bodies (DLB) (25.3 ± 35.5) and cardiovascular disease (CVD) (16.7 ± 24.5), and finally frontotemporal lobe degeneration (FTLD) (5.0 ± 17.22 , $t = -12.66$, $p < 0.001$). CL remained predictive of etiological diagnosis ($t = -2.41$, $p = 0.017$) within the VR+ population ($N = 157$). VR was not a significant predictor of MMSE ($t = -1.53$, $p = 0.13$) for the SCD population ($N = 90$), whereas CL was ($t = -3.30$, $p = 0.001$).

Discussion: The extent of amyloid pathology through quantification holds clinical value, potentially in the context of differential diagnosis as well as prognosis.

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