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Tau PET imaging with 18F-PI-2620 in patients with corticobasal syndrome compared to patients with Alzheimers disease and healthy controls

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State of the art: Corticobasal syndrome (CBS) is characterized by asymmetric parkinsonism, apraxia, dystonia, myoclonus, and cognitive disfunction, being corticobasal degeneration (CBD), a 4-repeat tauopathy, the frequent underlying neuropathology. Interestingly, other pathologies like Alzheimer's disease (AD) and progressive supranuclear palsy (PSP) can also manifest as CBS. 18F-PI-2620, a tau-specific positron emission tomography (PET) tracer, can detect abnormal tau deposits in vivo. We aim to explore the potential role of 18F-PI-2620 uptake patterns in cortical regions (CR) and subcortical regions (SR) as a biomarker to identify the underlying tauopathy in CBS.
Methodology: Three groups underwent PET scans after the injection of 18F-PI-2620: 6 CBS patients, 10 AD patients, and 14 healthy controls (HC). Standardized value uptake ratios (SUVr) were derived from averaged PET images from 45-75 minutes post-injection. We performed descriptive analysis considering the small sample size.
Results: In CBS, 3/5 cases demonstrated predominant tracer uptake in SR, while 2/5 showed a predominant CR uptake pattern similarly to AD cases. Interestingly, one CBS patient had both CR and SR abnormal 18F-PI-2620 uptake.
Conclusion: Our results suggest that 18F-PI-2620 could be a useful biomarker for identifying underlying tau pathology in CBS and AD. However, it seems insufficient to distinguish CBD from AD or PSP in CBS, and the concomitant use of additional biomarkers should be considered. Larger sample size and detailed uptake pattern distribution analysis are necessary to explore 18F-PI-2620 potential as a biomarker in CBS.
Keywords: Corticobasal syndrome; tauopathies; tau-PET.

Conflicts of interest

Nothing to disclose