



Dual-phase 18F-FP-CIT PET in corticobasal syndrome underlying AD pathology

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Dual-phase 18F-FP-CIT (early and late phases) and 18F-florbetaben PET images were obtained in a 60-year-old woman who presented with a 6-month history of right involuntary movement (dystonia, myoclonus, apraxia) and cognitive decline, which is compatible with corticobasal syndrome (CBS). A dual-phase 18F-FP-CIT PET study showed hypoperfusion in the bilateral temporoparietal cortex without involvement of the thalamus and basal ganglia in the early phase (Fig. 1A, B), but preserved dopamine transporter (DAT) binding in the late phase (Fig. 1C). 18F-florbetaben PET showed prominent accumulation of beta-amyloid plaque in frontal, temporoparietal cortex, suggesting AD pathology (Fig. 1D–F). Brain MRI was unremarkable (Fig. 1G–I). Alzheimer's disease (AD) is the second-most common pathology in CBS. Our observation of posterior temporoparietal

hypoperfusion in the early phase of 18F-FP-CIT PET is in line with the previous FDG-PET studies in patients with CBS with in vivo biomarkers of amyloid deposition or AD pathology [1]. CBS with normal DAT binding might suggest focal cortical variants of other dementia such as AD other than CBD (corticobasal degeneration) [2]. Extranigral pathology at cortical lesion without dopaminergic deficit may contribute to CBS [3]. However, in pathologically proven CBD, some patients may have preserved DAT binding at early stage, although substantia nigral cell loss is characteristic of CBD [4].

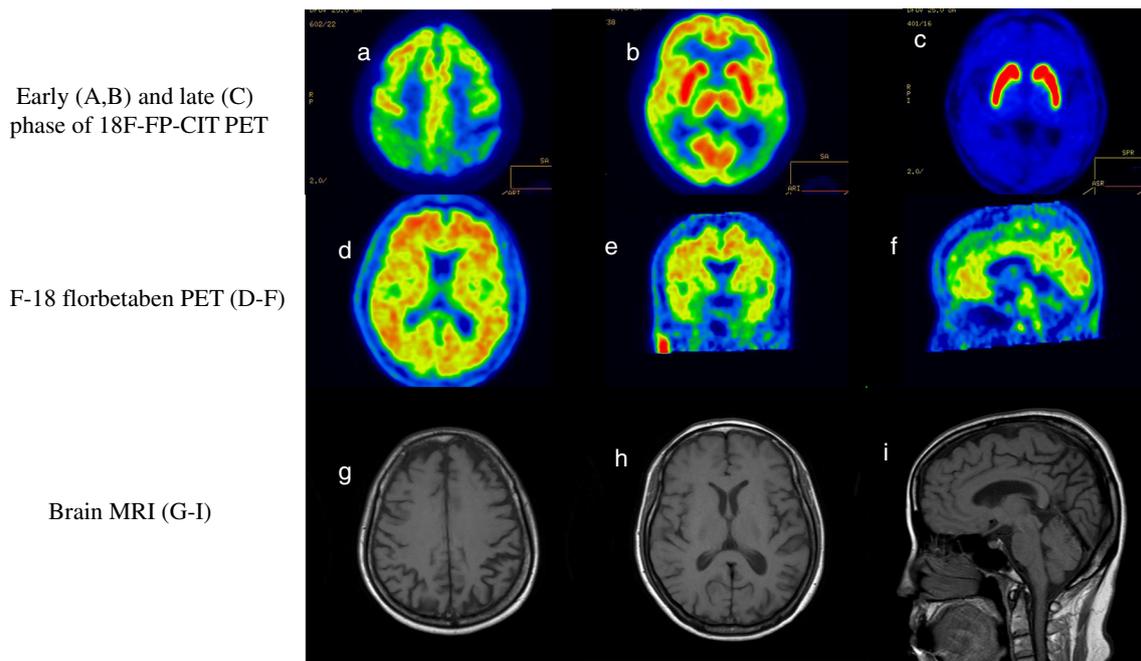
Dual-phase 18F-FP-CIT PET is a recently developed imaging that shows regional cerebral perfusion in the early phase and DAT binding in the late phase. The early phase of 18F-FP-CIT PET is closely linked with regional glucose metabolism [5]. This image highlights that specific AD-like pattern in

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early phase and intact DAT binding in late phase of dual-phase 18F-FP-CIT suggest AD pathology in CBS. However, our finding is limited by the lack of neuropathological confirmation.

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Compliance with ethical standards

Relevant conflicts of interests/financial disclosures The authors have nothing to declare.

Informed consent Written informed consent was obtained from the spouse of the subject for publication of this case report and accompanying images.

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