18F FLUORODEOXYGLUCOSE PET IN PARKINSON’S DISEASE WITH MILD COGNITIVE IMPAIRMENT (PD-MCI)

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Introduction: Parkinson’s disease (PD) with mild cognitive impairment (PD-MCI) is an understudied syndrome. It is unclear whether cortical dysfunction in PD-MCI is absent, as in typical PD, or similar to that observed in subjects with dementia with Lewy bodies (DLB).

Aim: The aim of our study was to assess patterns of hypometabolism on FDG-PET in PD with and without MCI and to compare these patterns with those observed in DLB.

Methods: 17 randomly selected subjects meeting our criteria for PD, PD-MCI and DLB who had completed FDG PET scanning were identified. Diagnoses were based on bedside cognitive testing and the presence or absence of clinical features only, including cognitive dysfunction, well formed visual hallucinations, Parkinsonism, REM sleep behavior disorder and fluctuations. Automated quantitative analyses of all FDG PET scans were performed blinded to clinical diagnoses.

Results: PD subjects (n=5) showed no hypometabolism. PD-MCI subjects (n=3) showed a cortical hypometabolism pattern somewhat similar to DLB subjects (n=9) affecting predominantly frontal, parietal and occipital lobes, but with significantly less right occipital lobe hypometabolism than DLB.

Conclusion: These findings suggest that cortical dysfunction occurs in PD-MCI affecting regions that are similarly affected in DLB, although with less right occipital lobe hypometabolism.