

S25-05

SUBJECTIVE COGNITIVE IMPAIRMENT: FUNCTIONAL MRI DURING DIVIDED ATTENTION AND MEASUREMENT OF AMYLOID LOAD USING ¹¹C-PIB PET

J. Rodda¹, T. Dannhauser^{1,2}, D. Cutinha^{1,2}, A. Okello³, S. Shergill⁴, D. Brooks³, Z. Walker^{1,2}

¹Mental Health Sciences, University College London, London, ²North Essex Partnership NHS Foundation Trust, Essex, ³Imperial College London, ⁴Institute of Psychiatry at the Maudsley, London, UK

Background: Evidence suggests that healthy older adults with subjective memory complaints are at increased risk of dementia. *Subjective Cognitive Impairment* (SCI) may precede Mild Cognitive Impairment (MCI) in the clinical continuum of Alzheimer's disease (AD). Attentional deficits may be present early in AD, and associated functional changes have been reported in both MCI and AD. In the present study, activation during divided attention in SCI subjects was investigated using functional magnetic resonance imaging (fMRI). Additionally, amyloid uptake was investigated using ¹¹C-PIB with positron emission tomography (PET).

Methods: Brain activation in 11 SCI subjects and 10 controls was compared during a divided attention task using fMRI. Additionally, five SCI subjects and 14 cognitively normal healthy controls underwent ¹¹C-PIB PET scanning. Criteria for diagnosis of SCI were:

1. self-reported memory complaints,
2. objectively normal cognition on detailed neurocognitive testing,
3. absence of psychiatric or causative physical illness,
4. normal activities of daily living and
5. absence of MCI or dementia.

Results: There were no differences in performance between SCI and control groups in terms of cognitive or behavioural measures. However, SCIs had increased activation in left medial temporal lobe, and bilateral thalamus, posterior cingulate and caudate. One SCI subject and one control subject had a pattern of ¹¹C-PIB uptake similar to that seen in AD.

Conclusions: The activation changes identified in SCI may relate to compensatory increased activation in the face of early AD pathology. Larger, longitudinal studies are needed to determine the extent and significance of PIB uptake in SCI.