

**PW01-74 - CEREBRAL BLOOD HYPOPERFUSION IN MILD COGNITIVE IMPAIRMENT AND MILD DEMENTIA IN ALZHEIMER'S DISEASE MEASURED WITH PULSED ARTERIAL SPIN LABELING MRI**

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Pulsed arterial spin labeling (PASL) perfusion imaging is an MRI technique, relying on the detection of magnetically labelled water. The aim of the present study was to determine regional CBF abnormalities in patients with Alzheimer's Disease (AD) and Mild Cognitive Impairment (MCI), the transitional clinical stage between normal cognition and dementia, as compared with cognitively normal elderly controls using PASL.

MRI was performed on a 3 T MR scanner. A multislice STAR sequence with WET presaturation and thin slice periodic saturation pulses was used for PASL: readout single-shot EPI; TR/TE/a = 2500ms/17ms/90°; T11/T11S/TI2 = 700ms/ 1200ms/1500ms; 11 slices ; 80 pairs of labeled-control; scan time 7min 18sec. For coregistration a single shot EPI and a T1-weighted TFE sequence were acquired. Resting CBF maps were obtained from 15 elderly cognitively normal controls, 13 MCI patients and 7 patients with AD. Analysis of variance was performed across groups using SPM5. Results were thresholded at  $p < 0.05$ , corrected for FWE.

Lower perfusion was found in the left and right inferior parietal cortex and angular gyrus, in the left middle temporal and posterior cingulate cortex in patients. A small reduction of perfusion was detected in the left caudate in patients as compared with cognitively normal controls.

These results confirm previous findings of hypoperfusion in parietal and temporal areas of patients with MCI and AD as compared to age matched controls. In addition, lower perfusion was detected in the left caudate. PASL may be a valuable tool for investigating the transition from normal ageing to dementia.