**Subclinical white matter lesions are associated with EEG slowing in a memory clinic cohort**

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**Background:** The aim of the study was to describe the relationship between electroencephalographic (EEG) findings by standardised visual analysis, subclinical white matter lesions (WML) and brain atrophy in a large memory clinic population. **Methods:** Patients with Alzheimer’s disease (AD, n =58), mild cognitive impairment (MCI, n = 141), subjective cognitive impairment (SCI, n = 194) had clinical, MRI based WML severity and regional atrophy assessments and routine EEG recording. Background activity (BA) and episodic and continuous abnormalities were assessed visually in EEG. **Results:** WML (p = 0.006), and atrophy in medial temporal regions (p=0.001) were associated with slower BA in all diagnoses. WML were associated in SCI with total episodic (p= 0.03) and in MCI with localized episodic abnormalities (p = 0.04). **Conclusions:** EEG is associated with subclinical WML burden in a non-demented memory clinic population.