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Ante-mortem diagnosis of Alzheimer's disease (AD) **by measuring medial temporal lobe** (MTL) **thickness on CT scans**

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Background: The definitive diagnosis of AD is still only possible by histology. Therefore, the diagnosis of AD during life requires extensive neurological and neuropsychological testing. The MTL of the brain is important for normal cognitive function, and MTL atrophy is associated with AD. **Objective:** Determine whether MTL atrophy detected by CT scanning is useful for the ante-mortem diagnosis of AD. **Methods:** After informed consent, 23 patients with a clinical diagnosis of AD and 19 volunteers aged > 65 years with no evidence of cognitive impairment were recruited. Diagnosis of AD was made on established criteria after detailed clinical, biochemical and radiological evaluation. All underwent cognitive assessment by CAMDEX from which the CAMCOG score was determined. MTL-oriented CT scans were done in all. The minimum width of each MTL (bilateral) was measured by a consultant radiologist who was blind to the clinical diagnoses and cognitive assessment scores. **Results:** The two groups were from the same geographic area, and were well matched for age, sex and level of education. Results are shown in the table.

	Patients (n=23)	**Controls (n=19)**
Age (years)	72 (6.8)	71(4)
CAMCOG score (max. score = 105)	26.1 (22.8)	88.9 (4.9)
MTL thickness (right) mm	5.6(2.1)*	15.1 (2.2)*
MTL thickness (left) mm	6.4(2.8)*	14.9(3.1)*

*P < 0.001 (unpaired t-test)

Conclusion: MTL atrophy is strongly associated with AD in our study population. Measurement of MTL thickness by CT scanning is a simple and effective test, and will improve the diagnostic accuracy of AD during life.