**DIAGNOSIS**

**NINCDS-ADRDA criteria were not able to exclude frontotemporal dementia**


**Question**
Are the NINCDS-ADRDA criteria useful for distinguishing between Alzheimer’s disease (AD) and frontotemporal dementia (FTD)?

**Design**
Blinded comparison of NINCDS-ADRDA diagnostic criteria with pathological results.

**Setting**
Neurology department of a hospital in Manchester, UK.

**Patients**
56 patients with pathological confirmation of AD (n = 30, 53% women, mean age 56 y, mean duration of disease 3.3 y) or FTD (n = 26, 73% men, mean age 57 y, mean duration of disease 3.0 y).

**Description of test and diagnostic standard**
A neurologist applied the NINCDS-ADRDA criteria for probable AD (Mini-Mental State Examination score ≥ 24 points and deficits in memory and ≥1 other cognitive domains defined by the criteria statement [ie, orientation, language, praxis, attention, perception, problem solving, activities of daily living, and social function]). The neurologist was blind to results of the diagnostic standard, which was pathological confirmation of AD or FTD.

**Main outcome measures**
Sensitivity, specificity, and likelihood ratios.

**Main results**
The NINCDS-ADRDA criteria had high sensitivity but low specificity for detecting probable AD among patients with either AD or FTD (table). The table shows results for each cognitive domain.

**Conclusion**
The NINCDS-ADRDA criteria were not able to exclude frontotemporal dementia when used to detect probable Alzheimer’s disease.

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**Commentary**

The accurate detection of early onset dementia has a wide range of implications for the provision of genetic counselling, carer support, the use of anti-dementia drugs, and health and social care.

Although NINCDS criteria remain in common use, attention should be drawn to the fact that not only were they “tentative and subject to change” but were also “not yet fully operational because of insufficient knowledge about the disease.”

This was compounded by a dearth of knowledge surrounding FTD, now known to account for up to 20% of all early onset dementia.

Previous studies validating NINCDS criteria against neuropathological findings have compared patients with AD and cognitively unimpaired controls. These studies reported high sensitivities and specificities which were not compromised by low positive predictive values.

The study by Varma et al is unique because it attempts validation of NINCDS criteria in AD and FTD. The study benefited from the blinding of clinicians to neuropathological diagnosis. The use of multiple testing, however, increased the probability that some statistically significant likelihood ratios occurred by chance.

The study is limited to early onset dementia. Its findings are of greater relevance to neurologists than geriatric psychiatrists because geriatric psychiatrists are less likely to consider FTD as a clinically important differential diagnosis over other dementias with cortical involvement (eg, vascular dementia and Lewy body dementia).

Given the poor specificity of NINCDS criteria in correctly excluding people with FTD, an emphasis on neuropsychological domains such as praxis, primary perceptual/language and spatial function, and orientation may improve the correct identification of people with AD. Naturally, these refined criteria will require revalidation in larger groups.

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