

WHAT IS THE CLINICAL PREVALENCE OF LEWY BODY DEMENTIA?

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SUMMARY

The reported prevalence of Lewy body dementia (LBD) has varied from 12% to 20% in postmortem series. Such series may not be representative of the dementia population as a whole. We have attempted to determine the prevalence of LBD in patients referred to a district general hospital with a diagnosis of dementia. The case notes of a consecutive series of patients with a clinical diagnosis of dementia referred to the care of two consultants in old age psychiatry over a period of 1 year ($N = 114$) were analysed using a checklist incorporating the items of the criteria proposed by McKeith and by Byrne for the *in vivo* diagnosis of LBD. The analysis was repeated for the subgroup ($N = 76$) fulfilling ICD 10 criteria for Alzheimer's disease. The prevalence of LBD was 26.3% according to McKeith criteria, 7% according to Byrne probable and 16.6% according to Byrne possible criteria. There were, however, considerable disagreements between different criteria. The frequencies of individual clinical features within subjects fulfilling and not fulfilling LBD were reviewed. Logistic regression analysis revealed the main clinical features capable of differentiation between LBD and other dementias were: presence of visual or auditory hallucinations; extrapyramidal features or neuroleptic sensitivity syndrome; fluctuating pattern of clinical features over a long period of time (McKeith criteria); and presence of classical Parkinsonism with simultaneous or earlier onset of dementia (Byrne criteria). The results were essentially similar in the Alzheimer's disease subsample. A significant proportion of patients with dementia referred to an old age psychiatry service thus fulfil *in vivo* criteria for LBD. The variation in frequency of diagnosis of LBD by the different criteria suggests that these clinical criteria may need revising.

KEY WORDS—Lewy body dementia, prevalence, criteria.

F. H. Lewy described inclusion bodies in the basal ganglia of patients with paralysis agitans (Parkinson's disease) (Lewy, 1912). Following recent advances in immunocytochemical techniques (Lowe *et al.*, 1988; Kuzuhara *et al.*, 1988), they have been identified in the cerebral cortex as well as in the basal ganglia. Lewy bodies in the cortex have been found in association with dementia (with and without the characteristic neuropathological

features of Alzheimer's disease) in patients who did not have a primary diagnosis of Parkinson's disease. Such 'Lewy body disease' (LBD) has recently come to be recognized as an important type of dementia. Its reported prevalence in postmortem series of elderly patients with dementia has varied from 12 to 20% (Table 1).

Retrospective case note analysis of neuropathologically defined cases has suggested that some clinical features occur more frequently in demented patients with cortical Lewy bodies than in those in whom cortical Lewy bodies were not found. For example, an increased sensitivity to neuroleptics has been reported in the neuropathologically

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Table 1

Investigators	Year	LBD	Nature	Sample size	Comments
Forno and Langston	1988	5%	PM	260	Consecutive autopsies; % dementia not known
Byrne <i>et al.</i>	1989	7%	PM (total)	216	Referrals for postmortem over 1 year
		27%	PM (dementia)	55	
Joachim <i>et al.</i>	1988	18%	PM	150	Clinical diagnosis of Alzheimer's dementia
Dickson <i>et al.</i>	1989	13%	PM	216	Degenerative brain disease for evaluation; 3-year period
Perry <i>et al.</i>	1990	22%	PM	93	Dementia; age > 70 yr; 5-year period
Hansen <i>et al.</i>	1990	36%	PM	36	Alzheimer's disease diagnostic criteria; Parkinsonism excluded

PM, postmortem.

defined group of LBD, which appears to be associated with an increased morbidity and mortality and is therefore clinically important (McKeith *et al.*, 1992). Diagnosis in life would allow the natural history of this disease to be ascertained. This would be useful for clarifying the prognosis of LBD and for assessing the value of therapeutic interventions. Equally important, such identification would prevent the contamination of clinical trials involving patients thought to have a diagnosis of 'pure' Alzheimer's disease. Operational criteria have been proposed by McKeith *et al.* (1992) and by Byrne *et al.* (1991) summarizing these essential clinical features. Byrne's group have further distinguished between 'probable' and 'possible' LBD. Validation of the clinical criteria for LBD depends ultimately on autopsy data (eg McKeith *et al.*, 1994). Postmortem series may, however, not be epidemiologically representative (Brayne, 1993) or even be a true reflection of the patients seen within a clinical service.

This study uses the criteria of McKeith *et al.* (1992) and of Byrne *et al.* (1991) to estimate the prevalence of LBD in a population of patients presenting to the old age service of a district general hospital. It examines whether these criteria define a distinct clinical group of patients and whether similar prevalence rates are apparent in a clinical sample to those found in postmortem studies. In addition, the study examines which individual features within the clinical criteria appear most informative in making a clinical diagnosis of LBD.

SUBJECTS AND METHODS

All cases with a clinical diagnosis of dementia under the care of two consultants in old age psychiatry seen in the year ending September 1992 were identified on the basis of case note review. Clinical diagnoses of Alzheimer's disease and of vascular, alcoholic and mixed dementia were made using ICD 10 criteria. The case notes were further analysed using a checklist (Appendix), which is a summation of the criteria proposed by McKeith *et al.* (1992) and Byrne *et al.* (1991) for *in vivo* diagnosis of LBD.

Using these criteria, patients were divided into the following groups:

1. Patients fulfilling McKeith *et al.* criteria for LBD
2. Patients fulfilling Byrne *et al.* criteria for probable LBD
3. Patients fulfilling Byrne *et al.* criteria for possible LBD

The three groupings (and the Byrne probable and possible in particular) were not treated as mutually exclusive.

The results were analysed using the SPSS package with chi-square tests (Fisher's exact test where appropriate) and subsequent stepwise logistic regression using SPSSPC+ (1992). Analyses were carried out both on the total sample and on those subjects fulfilling ICD 10 criteria for Alzheimer's disease.

