among refugees and suggest the need for carrying out the systematic preventive and treatment programs.

NR9. Neurobiological aspects of dementia

Chairmen: S Lovestone, M Kopelman

A PROSPECTIVE STUDY OF DEMENTIA WITH LEWY BODIES — CLINICAL DATA

C.G. Ballard, K. Lowery, R. Harrison, I. McKeith. *The Institute for the Health of the Elderly, Elderly Annexe, Newcastle General Hospital, Westgate Road, Newcastle upon Tyne, Tyne and Wear, United Kingdom*

Background: Dementia with Lewy bodies accounts for 10% of dementia cases. Their importance was emphasised by the retrospective identification of a marked neuroleptic sensitivity syndrome. Little is known about the course of dementia.

Method: Consecutive patients with a clinical diagnosis of Lewy body dementia and patients with a clinical diagnosis of Alzheimer's disease, identified by consultant old age psychiatrists, are referred to a research clinic. A standardised assessment, the LBAD, is completed. This includes the MMSE, UPDRS and detailed sections pertaining to fluctuation, clouded consciousness, falls and non-cognitive symptoms. Diagnoses are made according to the McKeith criteria for SDLT, the Byrne criteria for DLB and the NINCDS ADRDA criteria for probable or possible Alzheimer's disease.

Results: Data are reported on the first 73 patients. 42 had SDLT, 30 had AD and 1 did not meet either set of criteria. There was good agreement between the criteria for SDLT and those for DLB (Kappa +0.62). A case note review found 95% of SDLT patients to have been referred. The baseline level of cognitive impairment was similar in the SDLT and AD patients (MMSE 14.92 vs 13.88). 48 patients have been followed up for 1 year and 15 for 2 years. The SDLT patients were significantly more likely to have visual hallucinations at baseline (OR 35.75, 95% CI 8.67, 148.41) and during the first year of follow up (OR 26.06, 95% CI 5.47, 123.97). Delusions, falls and depression did not differ significantly at baseline or during follow up. Auditory hallucinations occurred more frequently in SDLT patients at baseline (OR 12, 95% CI 8.58, 122.73) but not during follow up. Patients with SDLT experienced a mean MMSE deterioration of 3.91 over 1 year and 7.40 over 2 years, compared to deteriorations of 4.14 and 6.00 in patients with AD. Neither was a significant difference. SDLT patients without Parkinsonian symptoms were not more likely to develop these over follow up than patients with AD. Over the course of the study, 6 of the 19 SDLT patients exposed to neuroleptics, but 0 of the 7 AD patients experienced marked neuroleptic sensitivity.

Conclusion: The main differences between the 2 groups were the persistence of visual hallucinations and the occurrence of neuroleptic sensitivity in the SDLT patients.

A POSSIBLE MARKER FOR ALZHEIMER'S DISEASE: IN VIVO DETECTION WITH ANTICHOLINERGIC EYE DROPS

N. Chalhoub, P. Gilluley, B. Sacks. *Charing Cross and Westminster Medical School, London, UK*

The role of cholinergic transmission in the progression of Senile Dementia of the Alzheimer Type (SDAT) is well established. The evidence is mainly based on post-mortem neurochemical studies which show a reduction of choline acetyl transferase and acetyl choline esterase in the cerebral cortex and hippocampus of patients with SDAT. The reduction in enzyme levels has been found to be significantly related to an increase in the mean neuritic plaque count and to the degree of intellectual impairment.

The aim of this study was to see if it is possible to differentiate people suffering from dementia of the Alzheimer's type from those with other forms of dementia, by measuring their mydriatic response to eye drops of the anticholinergic agent 'Tropicamide'.

43 patients were investigated and divided into two groups: Group I (n = 31) with a clinical diagnosis of possible or probable SDAT and Group II (n = 12) with non-Alzheimer's dementia. There was no difference between the two groups with regards to their age, duration of illness or severity of dementia. The pupillary responses revealed no difference between the two groups at 0, 20 and 40 minutes after application of the drops, but there was a significant ($p = 0.015$) difference in dilatation at 60 minutes, indicating a marked mydriatic response in Group I. The discovery of such a marker may have implications for the identification of Alzheimer's disease during the 'preclinical phase'.

A LONGITUDINAL STUDY ON QUANTITATIVE MORPHOMETRIC CT PARAMETERS IN PATIENTS WITH PROBABLE ALZHEIMER'S DISEASE

Frank Hentschel, Rainer Zerfass, Christoph Besthorn, Heribert Sattel, Hans Förstl. *Central Institute of Mental Health, POB 122120, 68159 Mannheim, Germany*

We tried to improve the reliability of computed imaging parameters from computed tomography (CT) scans on the efficacy of the diagnosis of Alzheimer's disease (AD).

We determined 15 morphometric variables from CT scans from 40 patients with probable AD according to NINCDS-ADRDA and 40 non-demented controls matched for gender and age. The morphometric variables were submitted to a principal component analysis (PCA) and the resulting factor loadings were interpreted.

In normal aging the proportion of cerebro-spinal fluid (CSF) was significantly correlated with age, while one principal component accounted for a major part of the observed variance of ventricular and periventricular volumes.

In AD most of the morphometric variables were significantly correlated with the degree of cognitive impairment and not with age. Two principal components accounted for brain atrophy in AD, and the enlargement of CSF spaces in AD was correlated with the severity of dementia.

The statistical discrimination of patients with AD vs. normal controls improved from mild (79%) to moderate (86%) and severe dementia (93% correct classifications).

In the second cross-section 30 AD patients and 55 matched controls could be reexamined after two years. No remarkable changes were observed in the control group, but the patients scores worsened significantly in the Blessed Dementia Rating Scale and the Mini Mental State Examination, ventricular and total intracranial CSF volume, and EEG band power.

The volumetric changes in the CT scans contributed to clinical diagnostic reliability with a sensitivity as well as specifity approximately 0.94.

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