

groups performed equally poorly on frontal lobe tests.

Conclusions. (1) FTD occurs at an earlier age than AD. (2) Family history of dementia and ALS, but not APOE4 or alcohol, are significant risk factors for FTD. (3) FTD patients have different and more severe behavioral changes than AD. (4) NP patterns differ in early FTD compared to AD.

Study supported by NIH (AG-101123-04 UCLA Alzheimer Disease Center), Christine Risse Grant from the UCLA Center on Aging.

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Compensatory Reallocation of Cognitive Resources in Alzheimer's Disease: A PET Study of Auditory-Verbal Short-term Memory

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Objective. To evaluate the neuroanatomical basis of auditory-verbal short-term memory among patients with probable Alzheimer's disease (AD).

Background. Recent investigations have identified in vivo the brain regions which support auditory-verbal short-term memory among healthy young subjects. Although studies have shown the cerebral blood of AD patients at rest, there are no data examining altered CNS function using PET.

Design/Methods. Seven AD patients and 7 control subjects completed eight O15-water PET scans while at rest or while performing sub-span or supra-span verbal free recall tasks.

Results. The brain regions active during low-level, automatic information processing (e.g., phonological storage) were similar in the AD patients and controls. The supra-span task resulted in activation of the middle inferior frontal gyrus among the controls, whereas more dorsal superior frontal regions were activated by the patients. The AD patients had a significant activation of the supramarginal gyrus during the supra-span task, a region either necessary nor sufficient to support secondary memory.

Conclusions. Early in the course of AD, the CNS retains a significant degree of functional plasticity. These findings should have important implications for our understanding of the dementia process.

Study supported by NIMH, NIA.

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Overestimation of Time in Frontal Impairment

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Objective. To investigate the relationship between frontal working memory impairment and the ability to estimate the duration of elapsed time.

Background. Our previous work showing curtailed time estimation in Korsakoff amnesia for durations in excess of 30 seconds.

Design/Method. Five patients with focal frontal lesions and five patients with Korsakoff syndrome performed a simple distractor task four times each of 10, 30, 60, 90, and 120 seconds. After each trial they were asked to estimate in seconds how long it had taken. General intelligence, long-term memory and working memory were evaluated with the WAIS-R, WMS-R, and WCST (Wisconsin Card Sorting Test), respectively.

Results. Impaired performance on working memory (cate-

is linked to impaired working memory.

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Regional Corpus Callosum Atrophy Indexes Regional Cortical Degeneration and Mental Status Decline in Alzheimer's Disease

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Objective. To determine if regional corpus callosum (cc) atrophy indexes regional cortical atrophy and mental status decline in probable Alzheimer's disease (AD).

Background. Reduction in cc area has been reported to parallel IQ decline and cerebral hypometabolism in AD (n = 10) (Yamauchi et al, 1993).

Methods. Total cc area and subareas were measured semiautomatically on T₁ MRI in 25 AD and 19 age-matched control subjects and correlated with lobular volumes of the middle third of the temporal lobe traced on coronal sections, and with compartmental volumes of parietal and temporal lobes using bifeature segmentation. Age, sex and total intracranial capacity were controlled for in all statistical analyses.

Results. There was a significant reduction in total cc area (p = 0.05), anterior (p = 0.02) and posterior body (p = 0.03) areas in the AD subjects. Posterior body area correlated significantly with ventricular CSF volume in the parietal (p = 0.002) and temporal region (p = 0.009), and with superior temporal volume (p < 0.04). The Mattis Dementia Rating Scale correlated significantly with the posterior body area (p = 0.01; cf. p = 0.07 for total cc area).

Conclusion. The corpus callosum is atrophied in AD; loss of parietal-temporal fibers in the posterior body was associated with measures of parietal and temporal atrophy and with mental status. CC atrophy can be measured semiautomatically and may provide a quick index of cortical degeneration in AD.

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Paraneoplastic Disease and Complications

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Limbic Encephalitis and Small-Cell Lung Cancer: Clinical and Immunological Features

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Objectives. To compare patients (pts) with limbic encephalitis and small cell lung cancer (LE-SCLC) according to the presence or not of anti-Hu antibodies (Hu-Ab).

Background. Previous reports suggest that LE-SCLC is associated with high titers of Hu-Ab (Hu+).

Methods. Over 5 years, 10 patients with LE-SCLC were studied. Five pts were Hu+ and 5 had no Hu-Ab (Hu-).

Results. LE always preceded the discovery of SCLC (median, 4 months). At diagnosis, the tumor was limited to the chest in 8/10 pts and metastatic in 2 (1 Hu+ and 1 Hu-). Hu- pts had a pure LE (5/5), and none of them developed multifocal neurologi-

(47.) * Yu D., Black S., Parker Y., Buck B., Kidron D., Stanchev P., Bronskill M., "Regional Corpus Callosum Atrophy Indexes Regional Cortical Degeneration and Mental Status Decline in Alzheimer's Disease", *Neurology* **45**, 1995 Suppl 4, A319.