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AGE, CLINICAL INDICES AND NEUROPATHOLOGY IN ALZHEIMER DISEASE AND DEMENTIA WITH LEWY BODIES

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Background: The age dependence of Alzheimer disease (AD) neuropathology and clinical features has been studied, but the relationship between neuropathology and clinical features in AD and advanced age in dementia with Lewy bodies (DLB) remain to be characterized. **Methods:** For this study, cases were selected from the Alzheimer Disease Research Center (ADRC), which performed comprehensive cognitive testing, and were divided into three age groups (70-79 (Control n = 7, AD n = 137, DLB n = 53), 80-89 (Control n = 7, AD n = 197, DLB n = 39), and ≥90 years (Control n = 2, AD n = 64, DLB n = 6)). Neuropathological markers were assessed for AD and DLB and were correlated with clinical measurements of cognitive impairment and severity of dementia. Protein levels of tau and amyloid-beta were also assessed by immunohistochemistry. **Results:** The results demonstrate that with increasing age, the proportion of DLB cases as a percentage of total (DLB and AD) cases decreased. In the DLB cases, LB pathology was lower in the older patients than younger ones and in AD cases neuropathological burdens were inversely related to age. For AD, cognitive impairment was also least severe in the oldest age group, but cognitive impairment did not vary with age in DLB. Extent of AD neuropathology correlated well with severity of AD dementia in the two younger age groups, while synaptophysin immunoreactivity was more strongly associated with severity of dementia in the older age groups in AD and DLB. **Conclusions:** Neuropathology in both AD and DLB is less severe in older subjects and synaptophysin is better associated with cognitive impairment in the very elderly.