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Delayed P300 latency correlates with abnormal Test of Variables of Attention (TOVA) in adults and predicts early cognitive decline in a clinical setting.

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Abstract

Delayed P300 latency identifies dementia better than the Mini-Mental Status Exam and, in some cases, the Wechsler Memory Scale (WMS-III). The purpose of this study was to determine whether the outcome of an objective Test of Variables of Attention (TOVA) correlates with the findings of an electrophysiologic test-P300 latency-in patients 40 y of age or older. Adult attention deficit disorder may be an important premorbid marker of memory dysfunction or dementia. In males, the means for P300 latency and age-adjusted P300 latency were significantly greater for patients classified as SD-BL (significantly deviant or borderline: TOVA<-1.0) than for those categorized as normal (TOVA(3)0) for attention failure (ie, omissions [P<.010] and commissions [P<.005]) but not for response time or for variability. Males with >2 SD-BL quarters had significantly delayed P300 latency and age-adjusted P300 latency compared with males who had 0 SD-BL quarters (P<.020) and 1 SD-BL quarter (P<.005). In females, the means for P300 latency and age-adjusted P300 latency were significantly delayed for those grouped as SD-BL than for those labeled normal for response time (P<.001) and variability (P<.010), but not for omissions or for commissions. Females with >2 SD-BL quarters had significantly delayed P300 latency and age-adjusted P300 latency compared with females who had 0 SD-BL quarters (P<.005) and 1 SD-BL quarter (P<.010). Results suggest that TOVA abnormalities may be an indicator of delayed P300 and attention disorder. Recent research correlates TOVA abnormalities with impaired WMS scores of early dementia. Coupling of TOVA assessment findings with results of P300, Mini-Mental Status Exam, and WMS-III may allow for enhanced accuracy in the diagnosis and evaluation of the complex pathway of failing attention, memory, and cognition that leads to dementia.

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[Indexed for MEDLINE]

MeSH terms

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