King-Devick test

Functional defects in eye movements and reduced reading speed in neurodegenerative diseases represent a potential new biomarker to support clinical diagnosis. Lehtola et al. investigated whether computer-based eye-tracking (ET) analysis of the King-Devick (KD) test differentiates persons with idiopathic normal pressure hydrocephalus (iNPH) from cognitively unimpaired [control (CO)] and persons with Alzheimer's disease (AD).

They recruited 68 participants (37 CO, 10 iNPH, and 21 AD) who underwent neurological examination, the Consortium to Establish a Registry for Alzheimer's Disease neuropsychological test battery (CERAD-NB), and a Clinical Dementia Rating interview. The KD reading test was performed using computer-based ET. We analyzed the total time used for the reading test, number of errors, durations of fixation and saccade, and saccade amplitudes.

The iNPH group significantly differed from the CO group in the KD test mean total time (CO 69.3 s, iNPH 87.3 s; P≤0.009) and eye-tracking recording of the mean saccade amplitude (CO 3.6 degree, iNPH 3.2 degree; P≤0.001). The AD group significantly differed from the CO group in each tested parameter. No significant differences were detected between the iNPH and AD groups.

For the first time, Lehtola et al. demonstrated altered reading ability and saccade amplitudes in patients with idiopathic Normal Pressure Hydrocephalus. [1)].

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