Gait variability at fast-pace walking speed: A biomarker of mild cognitive impairment?

The interpretation of the increase in stride-to-stride variability of stride time (STV) regarding the evolution of cognitive deficits across the dementia spectrum is matter of debate. The aim of this study was to compare STV at usual and fast-pace walking speeds of MCI patients with that of cognitively healthy individuals (CHI) and Alzheimer's disease (AD) patients with mild dementia, while considering the effects of potential confounders. STV while walking at usual and fast-pace walking speeds was recorded with the GAITRiteA (R) system from 116 older adults (mean age 75.6 +/- 6.5 years; 55.2% female) divided into 3 groups according to their cognitive status (44 CHI, 39 MCI patients and 33 AD patients with mild dementia). The full adjusted multiple linear regression models showed that high STV was associated with slow gait speed at usual-pace walking speed (P=0.002) and with the MCI status at fast-pace walking speed (P=0.015). High STV at fast-pace walking speed was a specific gait disturbance of MCI patients in the sample of studied participants, and thus could be used in the future as a specific biomarker of MCI patients.
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