MOVEMENT DISORDERS

Motor changes in sleep disorder signal prodromal parkinsonism

Simple quantitative measurements of motor function can be used to detect signs of parkinsonism up to 4.5 years before clinical diagnosis, according to findings from a recent study. Through the routine assessment and follow-up of patients with rapid eye movement sleep behaviour disorder (RBD), Ron Postuma and colleagues have found a novel method to detect premotor, or prodromal, parkinsonism. These findings have implications for therapeutic intervention in the earliest stages of disease.

Previous studies to determine the duration of prodromal Parkinson disease (PD) have relied on back-extrapolation from data in patients in whom neurodegeneration is already under way. As patients with idiopathic RBD have a high risk of developing parkinsonism, the researchers of the current study sought to longitudinally examine changes in motor function in a cohort of patients with this disorder. “Through the systematic follow-up of patients with RBD, we have a chance to directly observe neurodegeneration emerging from prodromal stages,” explains Postuma.

78 patients with idiopathic RBD who were free from parkinsonism at baseline were assessed annually for motor function

through the use of common clinic-based scales or tests, including the Unified Parkinson Disease Rating Scale (UPDRS), the alternate-tap test, the Purdue pegboard, and the timed up-and-go test. Values obtained from patients with RBD were compared with values from age-matched non-RBD controls to determine the point at which each test score deviated from the ‘normal’ range.

During follow-up, 28 patients with RBD developed neurodegenerative disease, 22 of whom were diagnosed with parkinsonism (although two of these individuals were excluded from analyses for various reasons). UPDRS scores in those who developed parkinsonism intersected normal values at 4.5 years before clinical diagnosis. A cut-off point of >4 on the UPDRS could be used to predict eventual diagnosis of parkinsonism at 3 years before onset, with a sensitivity of 87.5% and specificity of 94.4%. Specificity of this cut-off point for prediction of parkinsonism was improved to 100% when scores for action tremor—a common nonparkinsonian condition—were removed from the assessment.

Notably, motor deterioration showed slower progression in patients who developed dementia with Lewy bodies

than in those who developed PD, suggesting that measurement of motor changes in prodromal stages could be used to differentiate patients with regard to diagnostic outcome.

“Simple motor measures could be part of a screening programme in an age when we have neuroprotective therapy, and want to use it as early in the disease course as possible,” concludes Postuma.

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