P29

Turning alterations in idiopathic REM sleep behaviour disorders

Cinzia Zatti[1], A. Pilotto[1], C. Hansen[2], A. Rizzardi[1], M. Catania[1], R. Romijnders[2], M.P. Pasolini[3], A. Galbiati[4], L. Ferini-Strambi[4], E. Schaeffer[2], D. Berg[2], W. Maetzler[2], A. Padovani[1,3]

[1]Department of Clinical and Experimental Sciences, Neurology Unit, University of Brescia, Italy
[2]Department of Neurology, Christian-Albrechts-University of Kiel, Kiel, Germany
[3]Department of Clinical and Experimental Sciences, Neurophysiology Unit, University of Brescia, Italy
[4]IRCCS San Raffaele Scientific Institute, Department of Clinical Neurosciences, Neurology-Sleep Disorders Centre, Milan, Italy

Introduction: State specific objective of study: Idiopathic REM sleep behaviour Disorder (iRBD) is a condition at higher risk of developing Parkinson's disease (PD) or other alpha-synculeinopathies. Aim of the study was to evaluate with Mobile health technology (MHT) subtle alterations of turning in iRBD subjects even in absence of parkinsonism at clinical examination.

Methods: The prospective study included consecutively individuals with PSG-confirmed iRBD, drug-naïve PD patients and healthy controls. Each individual underwent a multidimensional assessment including evaluation of motor and non-motor symptoms, cognitive status and comorbidity. All individuals were asked to perform Timed Up and Go test (TUG) both at normal and fast speed in clockwise and anti-clockwise supervised conditions using MHT. The turning parameters evaluated were mean, starting, middle and ending angular velocity and peak angular velocity of turning in different conditions.

Results: the study included 23 individuals with iRBDs, 61 drug-naïve PD patients and 80 controls. No iRBD showed a subthreshold parkinsonism at examination (MDS-UPDRS-III iRBD 2.26±2.01, PD 15.62±9.65). Angular velocity was reduced in all phases of turning (starting, middle, ending) with reduced mean and peak velocities in PD compared to controls in both normal and fast TUG ($p=<0.001$). iRBDs exhibited a reduced mean angular velocity compared to HC in both normal and fast conditions ($p=0.001$). iRBDs showed similar mean angular velocity in comparison to PD in normal TUG, but higher mean velocity in fast tests ($p=0.001$).

Conclusion: MHT assessment of turning identified subtle alterations in iRBDs, even in absence of parkinsonism at evaluation. Further longitudinal studies are warranted to evaluate the value of angular velocity in defining the risk of conversion and track the subtle motor progression in prodromal phases of PD.