REM sleep behavior disorder: Characteristics of polysomnographic and behavioral manifestations

Abstract

REM sleep behavior disorder (RBD) is a disease characterized by abnormal motor activity corresponding to the dream content. REM sleep without atonia (RWA) and behavioral manifestations are the main features registered by video-polysomnography (PSG). Because idiopathic RBD (iRBD) is considered as prodromal stage of synucleinopathies, the direction of current research is the search for markers of early conversion. The goal of this study was to observe the group of patients with iRBD with regard to the development of manifest neurodegenerative disease, to find and test a new polysomnographic marker of phenoconversion, to perform analysis of the movements registered by video and to quantify excessive fragmentary myoclonus (EFM), which is a frequent finding in neurodegenerative processes.

A total of 55 patients with iRBD were observed for 2.3 ± 0.7 years. The annual conversion rate was 5.5%. Mixed RWA, representing simultaneous occurrence of phasic and tonic RWA, was suggested as a new marker of phenoconversion. Converted patients showed a higher mixed RWA ($p=0.009$) and the ROC analysis confirmed that mixed RWA is the best predictive marker of conversion among other RWA types (AUC 0.778). An average of 114.6 ± 85.1 behavioral manifestations were identified by video-PSG and classified by clinical severity into 4 categories: 67.8% elemental, 9.1% excessive, 22.3% scenic and 0.7% violent. Violent behaviors occurred in 31.3% of patients. EFM was diagnosed in 75.9% among iRBD, while in 34.5% among controls ($p=0.003$). The quantitative analysis showed no difference in EFM intensity between groups.

Mixed RWA as the new best PSG predictive marker of early conversion, should be assessed in iRBD, as well as EFM, which occurs with high prevalence in iRBD. Violent behavioral manifestations are frequent in iRBD.