Treatment Effect of Ropinirole in an Elderly Patient with REM Sleep Behavior Disorder

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Case Presentation

A 72-year-old male (BMI: 24.9kg/cm^2), visited our psychiatric outpatient clinic in December 2021, due to sudden and vigorous limb movements during sleep. The situation was disturbing as he might accidentally hit his wife or fell out of bed. He did not receive new drug treatment after symptom onset. Loud snoring and witnessed apneas could be observed by his family. Clonazepam 2mg/HS was prescribed. Blood exams yielded negative findings (CBC/DC, BUN/Cre, Na/K/Ca/P/Mg, ALT/AST, free T4/TSH, Iron & TIBC/Ferritin). In-laboratory polysomnogram (PSG) revealed REM sleep without atonia (RWA) and moderate obstructive sleep apnea (AHI: 16.1/hr). The development of RWA was independent from hypopnea or apnea events. Periodic limb movement (PLM) index was within acceptable range. Consider age of the patient and that REM-sleep behavior disorder (RBD) is highly predictive of synuclein-mediated neurodegenerative diseases (e.g. Parkinson's disease), TRODAT was arranged. Imaging result indicated impairment of dopaminergic neuron function, more advanced on left striatum. Ropinirole was added and gradually titrated to 0.5mg/day. Clonazepam was tapered to 0.5-1mg/HS due to daytime dizziness. His REM-sleep behavior reduced by 70-80% afterwards.

Discussion

REM sleep behavior disorder (RBD) is a parasomnia, characterized by loss of muscle atonia during REM sleep. (Dauvilliers et al., 2018) Extreme motor behaviors may pose threat to the patients or their bedpartner. RBD can be classified into idiopathic (iRBD) or secondary forms. iRBD is highly predictive for synuclein-mediated neurodegenerative diseases, especially for men in older age. (Roguski et al., 2020) In a multicenter study conducted by the International RBD Study Group, the overall conversion rate from iRBD to an overt neurodegenerative syndrome was 73.5% after 12-year follow-up. (Postuma et al., 2019) For secondary RBD, the initiation of serotonergic antidepressant medication can be a common cause. (Roguski et al., 2020) Other differential diagnosis for RBD include non-REM sleep behavior disorder, periodic limb movement disorder, and obstructive sleep apnea (OSA). Parasomnia-like behaviors during fragmented sleep of OSA are referred to be pseudo-RBD. While OSA is caused by repetitive obstruction of the upper airway during sleep, RBD is thought to reflect dysfunction of the brainstem structures that modulate REM sleep. (Antelmi et al., 2021) The phenomenon is usually observed in patients with severe OSA, which would resolve once the sleep-disordered breathing is effectively treated (Iranzo and Santamaria, 2005).

Clonazepam and melatonin are the first-line pharmacological treatment options for RBD. Effects of alternative treatments for RBD (e.g. dopamine-agonists, cholinesterase inhibitor, glutamatergic antagonist, melatonin-agonist) are being evaluated in only a few studies. (Gilat et al., 2022) There are still limited evidences to support the effectiveness of Ropinirole to treat RBD symptoms. Nevertheless, future development of synucleinopathies should be considered among patient with RBD onset in older age. Dopamine-agonists (e.g. low-dose Ropinirole) might be potential treatment options, although more randomized placebo-controlled trials are required before solid conclusion can be made.

中文題目：以 Ropinirole 治療老年病患快速動眼期睡眠行為疾病之個案報告

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