



ORIGINAL ARTICLE

Association between REM sleep behaviour disorder and impulse control disorder in patients with Parkinson's disease[☆]

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Abstract

Introduction: The relationship between impulse control disorder (ICD) and REM sleep behaviour disorder (RBD) has not yet been clarified, and the literature reports contradictory results. Our purpose is to analyse the association between these 2 disorders and their presence in patients under dopaminergic treatment.

Methods: A total of 73 patients diagnosed with Parkinson's disease and treated with a single dopamine agonist were included in the study after undergoing clinical assessment and completing the single-question screen for REM sleep behaviour disorder and the short version of the questionnaire for impulsive–compulsive behaviours in Parkinson's disease.

Results: Mean age was 68.88 ± 7.758 years. Twenty-six patients (35.6%) were classified as probable-RBD. This group showed a significant association with ICD ($P = .001$) and had a higher prevalence of non-tremor akinetic rigid syndrome and longer duration of treatment with levodopa and dopamine agonists than the group without probable-RBD. We found a significant correlation between the use of oral dopamine agonists and ICD. Likewise, patients treated with oral dopamine agonists demonstrated a greater tendency towards presenting probable-RBD than patients taking dopamine agonists by other routes; the difference was non-significant.

Conclusions: The present study confirms the association between RBD and a higher risk of developing symptoms of ICD in Parkinson's disease.

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PALABRAS CLAVE
 Enfermedad de Parkinson;
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 Single-question screen for REM sleep behaviour disorder; Parkinson's Disease Impulsive—Compulsive Disorders Questionnaire

Relación entre el trastorno de conducta del sueño REM y el trastorno de control de impulsos en pacientes con enfermedad de Parkinson

Resumen

Introducción: La relación entre el trastorno del control de impulsos (TCI) y el trastorno de conducta del sueño REM (TCSR) no se ha aclarado todavía y los resultados de la literatura son contradictorios. Nuestro objetivo es valorar la asociación entre estos 2 trastornos y, a su vez, su presencia en dependencia de la terapia dopamínérgica.

Métodos: Un total de 73 pacientes diagnosticados de enfermedad de Parkinson, en tratamiento con un único agonista dopamínérgico, fueron incluidos en el estudio, tras valoración clínica y habiendo completado el cuestionario de pregunta única para el TCSR y el cuestionario abreviado para los trastornos impulsivo-compulsivos en la enfermedad de Parkinson.

Resultados: La edad media ± desviación estándar de los pacientes fue de $68,88 \pm 7,758$ años. De ellos, 26 pacientes (35,6%) se clasificaron dentro de un TCSR-probable, presentando mayor prevalencia de síndrome rígido acinético no tremórico, más años de tratamiento con levodopa y con agonistas dopamínérgicos, y una relación significativa con el TCI ($p = 0,001$) en comparación con el grupo sin TCSR-probable.

En cuanto al tratamiento con agonistas dopamínérgicos, se demostró la asociación significativa de la administración por vía oral con una mayor prevalencia de TCI, mientras que esta vía también se relacionó con mayor tendencia a desarrollar TCSR, diferencias en este caso no significativas.

Conclusiones: Nuestros datos confirman que el TCSR se relaciona con el TCI en la enfermedad de Parkinson.

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Introduction

REM sleep behaviour disorder (RBD) is a sleep disorder characterised by vigorous motor behaviour, unpleasant dreams, and lack of normal voluntary muscle atonia during REM sleep.¹ RBD most commonly presents in patients with neurodegenerative diseases, especially such synucleinopathies as Parkinson's diseases (PD), Lewy body dementia, and multiple system atrophy.²

All the conditions linked to RBD are characterised by marked brainstem degeneration, which probably alters the structures modulating REM sleep in normal circumstances. Furthermore, the emotional, unpleasant, distressing content of dreams suggests that in addition to the pontine tegmentum, the limbic system may be involved in the pathophysiology of RBD.^{1,3}

In the case of PD, the frequency of RBD has been reported to range from 20% to 72%² and may precede motor symptom onset by years or even decades.

According to several studies, patients with PD and RBD present more motor and non-motor disorders, which points to an extensive degenerative process.⁴ RBD has been associated with such factors as older age, longer disease duration, more severe motor impairment associated with akinetic-rigid syndrome (ARS), hallucinations, autonomic dysfunction, and high levodopa doses. A direct association has recently been described between this sleep

disorder and increased risk of impulse control disorder (ICD).^{4,5}

ICD-related behaviours (ICDRB) constitute a non-motor complication of PD. These psychological disorders are characterised by persistent failure to resist the urge to perform actions that may be damaging to the patient and/or the people surrounding him or her.⁶ ICDRB include such behaviours as punding (repetitive purposeless stereotyped behaviours), hobbies (compulsively seeking a hobby, such as cleaning or tidying up), walkabout, and poor impulse control (sexual impulses, eating, shopping, gambling), and even symptoms of dopamine dysregulation syndrome. These are all reward-seeking behaviours whose aetiopathogenesis seems to be related to decreased dopamine transporter activity in the ventral striatum,⁷ mesocorticolimbic pathway dysfunction, and presence of polymorphisms in D3 and D4 dopamine receptors.⁸ The prevalence of these disorders in patients with PD is estimated at 8% to 28%, depending on the study methodology.^{9–12} ICD has been associated with younger ages, early symptom onset, a personal or family history of ICD, substance abuse, bipolar disorder, and impulsivity.⁴

Given that patients with PD and ICD display more severe motor and non-motor symptoms, it has been hypothesised that these patients have more severe mesocorticolimbic pathway alterations, one of the pathophysiological factors of ICD.

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