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Rapid Eye Movement Sleep Behavior Disorder and Neurodegenerative Disease

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Abstract

Importance: The dream enactment of rapid eye movement sleep behavior disorder (RBD) is often the first indication of an impending α-synuclein disorder, such as Parkinson disease, multiple-system atrophy, or dementia with Lewy bodies.

Objective: To provide an overview of RBD from the onset of dream enactment through the emergence of a parkinsonian disorder.

Evidence review: Peer-reviewed articles, including case reports, case series, retrospective reviews, prospective randomized trials, and basic science investigations, were identified in a PubMed search of articles on RBD from January 1, 1986, through July 31, 2014.

Findings: Under normal conditions, vivid dream mentation combined with skeletal muscle paralysis characterizes rapid eye movement sleep. In RBD, α-synuclein abnormalities in the brainstem disinhibit rapid eye movement sleep motor activity, leading to dream enactment. The behaviors of RBD are often theatrical, with complexity, aggression, and violence; fighting and fleeing actions can be injurious to patients as well as bed partners. Rapid eye movement sleep behavior disorder is distinguished from other parasomnias by clinical features and the demonstration of rapid eye movement sleep without atonia on polysomnography. Consistent with early neurodegeneration, patients with RBD demonstrate subtle motor, cognitive, and autonomic impairments. Approximately 50% of patients with spontaneous RBD will convert to a parkinsonian disorder within a decade. Ultimately, nearly all (81%-90%) patients with RBD develop a neurodegenerative disorder. Among patients with Parkinson disease, RBD predicts a non-tremor-predominant subtype, gait freezing, and an aggressive clinical course. The most commonly cited RBD treatments include low-dose clonazepam or high-dose melatonin taken orally at bedtime.

Conclusions and relevance: Treatment of RBD can prevent injury to patients and bed partners. Because RBD is a prodromal syndrome of Parkinson disease (or related disorder), it represents a unique opportunity for developing and testing disease-modifying therapies.

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