Sequence Structure of Leg Movements during Sleep in Restless Legs Syndrome and Normal Controls

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Background

The aim of this study was to define the time structure of leg movements during sleep occurring with an intermovement interval shorter than 10 s in patients with restless legs syndrome (RLS) and controls, and to compare it to the structure of movements with interval 10-90 s or interval >90 s.

Methods

Polysomnographic recordings of 141 untreated patients and 68 age-matched normal controls were analyzed. All movements were detected and classified into three categories: separated by interval <10 s, interval 10-90 s, or interval >90 s. The number of movements included in each category was significantly higher in patients than in controls. The movements with interval >90 s occurred steadily along the night, whereas the hourly distribution of movements with interval <10 s or 10-90 s was decreasing or bell-shaped in patients or controls, respectively.

Results

The movements with interval <10 s tended to have shorter duration and constituted shorter sequences than movements with interval 10-90 or >90 s. The time structure features of the three categories of movements considered in this study was found to be clearly different.

Conclusion

This, together with previous observations on the differential effects of dopamine agonists on movements with different interval, suggests that movements with interval <10 s and >90 s are regulated by neurotransmitter mechanisms different from those modulating movements with interval 10-90 s.