Restless Legs Syndrome in Patients with Epilepsy

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Abstract

Study objectives

Restless legs syndrome (RLS) is a 24-hour disorder with both sensory and motor presentations. The most common presumed pathogensis of RLS are dopaminergic theory and brain iron deficiency. Putamen and substantia nigra are candidates of the possible lesion locations. Conversely, epilepsy is a disease of abnormal synchronous discharge from the cortex. Studies to discuss the interaction between RLS and epilepsy are of rarity. To discover the relationship among epilepsy and RLS, we designed a case-control study for the risk evaluation and other sleep profiles.

Methods

A total of 24 patients of epilepsy with RLS and 72 patients of epilepsy without RLS were recruited for polysomnography (PSG), 24-hour VEEG, and sleep questionnaires. The questionnaires contained the Pittsburgh Sleep Quality Index (PSQI), the Epworth Sleepiness Scale (ESS), the 36-Item Short Form Survey (SF-36), and the Hospital

Anxiety and Depression Scale (HADS). Seizure characters including epileptogenic focus, current anti-seizure medications (ASMs), medically responsive epilepsy or refractory epilepsy, and sleep onset or not were collected. Sleep architectures of the two groups were compared. We analyzed the risk factors of RLS via multivariate logistic regression, independent T-test for continuous variables and chi-squared test for binary variables. Besides, we evaluated the influence of RLS on the the sleep quality, quality of life, and the mood condition.

Results

For the epilepsy patients, the incidence of RLS was related to drug-resistant epilepsy (OR 6.68, P < 0.05), sleep-onset seizure (OR 4.91, P < 0.05) after modulating confounding factors including gender, etc. No statistical significance of sleep architecture was observed. Both physical and mental domains in the quality of life evaluation were involved in the group with RLS. Excessive daytime sleepiness in the RLS group was also profound (P <0.05) (table 1).

Table 1 - Questionnaires including PSQI, ESS, SF-36, and HADS.

	RLS(-) (n=72)	RLS(+) (n=24)	P value
PSQI total score			NS
sleep duration			NS
sleep latency			< 0.05
sleep efficiency (%)			NS
overall sleep quality			NS
sleep disturbance			NS
use of hypnotics			< 0.05
daytime dysfunction			< 0.05
ESS score			< 0.05
SF-36			
physical functioning			< 0.05
physical role limitations			< 0.05
bodily pain			< 0.05
social functioning			NS
general mental health			NS
emotional role limitations			< 0.05
vitality			NS
general health problems			NS
HADS			
Anxiety			NS
Depression			NS

NS: no significance.

Conclusions

In the epilepsy group, drug-resistant epilepsy and sleep-onset seizure enhanced the risk of subsequent RLS. RLS should be kept as a possible comorbidity of epilepsy in mind to prevent ASMs overused due to misdiagnosis.