IMPACT OF SLEEP DISORDERS ON THE RISK OF SEIZURES RECURRENCE IN JUVENILE MYOCLONIC EPILEPSY

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Introduction

Aim of this study was to investigate the presence of sleep disturbances in patients with juvenile myoclonic epilepsy (JME) using sleep questionnaires. Further, we tried to evaluate whether alterations in sleep quality may influence the clinical expression of JME.

Methods

Sixty-two JME patients treated with levetiracetam were included. Demographic and clinical variables were collected. Moreover, all patients were submitted to the Pittsburgh Sleep Quality index (PSQI) and the Epworth Sleepiness Scale (ESS) in order to respectively assess sleep quality during the last month and daytime sleepiness. All patients were followed for a 6-month period. The PSQI and ESS scores were synthesized as binary variables <5/≥5 and <10/≥10, respectively. A comprehensive analysis was performed to evaluate the independent effect of the sleep quality and daytime sleepiness on the risk of having seizures during the follow-up.

Results

Both reduced sleep quality during the last month and daytime sleepiness were associated with an increased risk of suffering from seizures during the follow-up period ($p < .0001$).
Increasing age had a significantly protective effect in the risk of seizure relapse.

Conclusions

Our findings suggest that in patients with JME, sleep alterations may have a significant influence on prognosis. In particular, reduced sleep quality and daytime sleepiness increase the risk of seizures occurrence in spite of an appropriate pharmacological treatment. This negative effect seems to be more relevant in younger patients. Sleep disorders and their specific correction should be taken into consideration in the management of patients with JME.

Variable	Overall (n=62)	Group 1 (n=52)	Group 2 (n=10)	p
Age (mean, ±SD)	23.2 (±2.48)	23.4 (±2.52)	22.2 (±2.09)	0.148
Male sex (n, %)	26 (41.9%)	23 (44.2%)	3 (30.0%)	0.499
Years from onset (mean, ± SD)	6.95 (±1.81)	6.92 (±1.87)	7.10 (±1.59)	0.231
PSQI (mean, ± SD) (*)	3.73 (±2.14)	3.37 (±1.92)	5.60 (±2.32)	0.002
PSQI < 5 (n, %) (*)	44 (71.0%)	41 (93.2%)	3 (6.8%)	0.004
ESS (mean, ± SD) (*)	5.27 (±3.37)	4.40 (±2.62)	9.80 (±3.29)	0.000
ESS < 10 (n, %) (*)	55 (88.7%)	50 (90.9%)	5 (9.1%)	0.001
Seizures recurrence (n, %)	10 (16.1%)	--	--	--

Table 1: Baseline characteristics of patients (whole population and divided in two groups according to the clinical evolution: Group 1, seizure free and Group 2, seizure recurrence). Significant differences are marked with an asterisk (*).

Variable	B	SE	Sig.	OR	OR: 95%CI	
					Lower	Upper
PSQI (*)	1.747	0.828	0.035	5.735	1.133	29.043
Age (*)	-0.652	0.319	0.041	0.521	0.279	0.973
Years from seizures' onset	0.769	0.428	0.072	2.158	0.932	4.993
Sex	-1.349	0.992	0.174	0.260	0.037	1.814
Constant	5.822	5.408	0.282	337.658	--	--

Table 2: logistic regression analysis considering seizures as outcome and PSQI, Age, Sex, years from seizures'onset as covariates. Significant predictors are marked with an asterisk (*).

Variable	B	SE	Sig.	OR	OR: 95%CI	
					Lower	Upper
ESS (*)	3.254	1.129	0.004	25.884	2.832	236.53
Age (*)	-0.857	0.371	0.021	0.424	0.205	0.878
Years from seizures' onset	0.942	0.492	0.056	2.566	0.978	6.734
Sex	-1.293	1.063	0.223	0.274	0.034	2.202
Constant	7.843	5.670	0.167	2547.299	--	--

Table 3: logistic regression analysis considering seizures as outcome and ESS, Age, Sex, Years from seizures' onset as covariates. Significant predictors are marked with an asterisk (*).

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