Sleep disorders in Epilepsy

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Abstract

Introduction: Epilepsy is closely connected with the sleep-wake cycle: the disease often causes sleep disorder and its structure and this, in turn, worsens epilepsy. Sleep disorders often provoke the appearance of various paroxysmal conditions, which are then difficult to differentiate from epileptic phenomena.

The objective of this study is to determine the nature of paroxysmal disorders occurring during sleep, and study the impact of antiepileptic drugs (AEDs) on sleep architecture.

Methods: Studies were conducted on the basis of the analysis of clinical symptoms and instrumental studies. EEG, EEG-video monitoring and polysomnography were used as screening methods.

Results: Data analysis of 300 patients aged 18-55 revealed the presence of epileptiform (25%) and non-epileptiform phenomena (28%), among which there were present parasomnias (somnabulism, nightmares, bruxism) – 5% and dyssomnias (difficulty falling asleep, frequent nocturnal awakenings, hypersomnia) – 23%. 10% of patients had a combination of both non -epileptiform and epileptiform phenomena, which greatly hampered the diagnosis. 15 patients (5%) didn't have any sleep disorders.

In the study of 137 patients with epilepsy during an inter-paroxysmal period, EEG showed certain increase in the number of "sleep spindles" and their high synchronization (amplitude, duration) in comparison with 163 patients with wakeful epilepsy.

The influence of AEDs on sleep structure cannot be excluded either.

In patients receiving carbamazepine (7%), the REM-sleep phase decreased, especially at the beginning of treatment. In patients treated with valproate (5%), the 1st stage of sleep increased while the clinical course of obstructive sleep apnea worsened as a result of side effects. In patients taking lamotrigine (3%), the slow-wave sleep stage decreased, while in patients treated with levetiracetam (8%), sleep continuity improved and there was some increase in the slow-wave stage.

Conclusion: The study revealed that sleep disorders in patients with epilepsy are observed in 53% of cases. AEP affects the structure and quality of sleep. The differential diagnosis of epileptic and non-epileptic sleep disorders has a lot of problems in clinical practice. Adequate assessment of the syndrome is essential for developing optimal treatment strategies.

Image

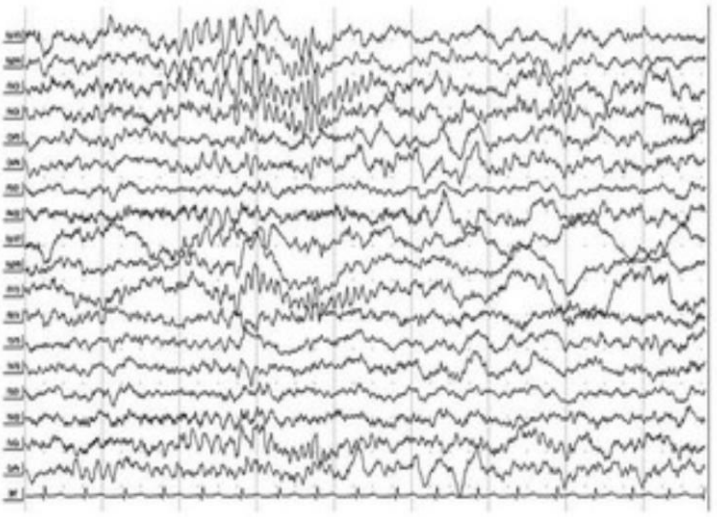
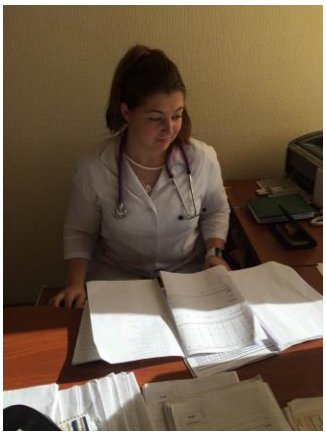


Figure 1: Patient A., female, 20 y.o. EEG (NREM-sleep phase)

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1. Khachatryan SG (2017). An effect of epilepsy on sleep structure. Journal of Neurology and Psychiatry im. S.S. Korcakova 117: 88-94.
2. Roohi-Aziz M (2017). Changes of the brain's bioelectrical activity in cognition, consciousness, and some mental disorders. Medical Journal of the Islamic Republic of Iran 31:53.
3. Mekky JF (2017). Sleep architecture in patients with Juvenile Myoclonic Epilepsy. Sleep Medicine 38: 116-121.
4. Foldvary-Schaefer NR (2017). Sleep-Disodered Breathing. Continuum: Lifelong Learning in Neurology 23: 1093-1116.
5. Staniszewska A (2017). Sleep disturbances among patients with epilepsy. Neuropsychiatric Disease and Treatment 13: 1797-1803.



Biography

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Notes/Comments: My name is Anna Voitiuk. I was born on the 25th of July, 1990. My native city is Kharkiv, Ukraine. My parents are engineers. But since childhood I dreamed of becoming a doctor. I graduated Kharkiv National Medical University in 2013 with major in general medicine. From 2013 till 2015 I studied as a postgraduate student in neurology at Kharkiv Medical Academy of Post-Graduate Education. During the residency the applicant has shown interest and enthusiasm in treating patients with disorder of cerebral circulation, epilepsy and spinal diseases. After passing the exams successfully I got a diploma of a doctor-specialist. I studied at the EAN Spring School and got a certificate about finishing in 2017 year. So now I'm higly qualified neurologist. I'm an active participant in case report discussions and always ready to suggest original solutions. Despite being busy with my medical duties I manage to find time to improve my professional skills and qualification. I take an active part in scientific conferences and has scientific publication. I hope that my participation in this conference will be extremely useful for my practical and scientific work.