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Poster Presentation

Review of Neurofeedback in Epilepsy

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Abstract

Introduction: Evaluation of EEG Biofeedback efficacy in epilepsy patients with overview of published articles in PMC, PubMed, Science Direct and Neuroscience databases. Epilepsy is a central nervous system disorder (CNS) in which a person experiences repeated seizure due to a chronic underlying process. The incidence of epilepsy is approximately 3 up to 5 percent in different populations. There are numerous drug therapies for the treatment and control of epilepsy, but this method only contributes to 2/3 of the patients, which means that about 1/3 of the patients with epilepsy do not respond to antiepileptic drugs. Since the 1980s, neurofeedback has been introduced into clinical practice by a scientist, Sterman, as a therapeutic tool, thus reducing seizures by altering brain waves in mice and monkeys. **Conclusion:** Several studies have been carried out to show that the SMR waves (12-15 Hz) training in central regions of the brain hemispheres has led to a reduction in seizure rates and facilitate treatment. A meta-analysis study showed a significant reduction in the occurrence of seizure in treatment-resistant epilepsy by SMR enhancement protocol. Therefore, the neurofeedback was proposed as very good approach in drug-resistant epileptic patients. Also, the use of neurofeedback in children with partial seizures has had a positive effect. Neurofeedback had made considerable effects on the treatment of epilepsy. So that, during a study, in 80% of patients recovered. Neurofeedback is a good option for patients who do not respond to drug therapy. However, the exact mechanism of neurofeedback, as well as the best selective treatment protocol for patients with different epilepsy categories, is still unclear, and the duration of the treatment is debatable. Therefore, more in-depth studies are needed to find out hidden angles of epilepsy treatment with neurofeedback.

Keywords: Seizure, Epilepsy, Neurofeedback, SMR.

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