

Non-pharmacological methods of cognitive functions correction: current state of problems and our experience of implementation in patients with epilepsy

Volodymyr Korostii
Iryna Blazhina

Kharkov National medical university
Bukovinian State Medical University

Background and Aims. The most common psychiatric conditions in epilepsy are depression, anxiety, behavioral, psychotic disorders, and cognitive disorders as well as those which can be caused by convulsive seizures. The research aimed to define cognitive and affective impairments in patients with epilepsy and methods of its non-pharmacological correction since cognitive impairments and affective disorders have a considerable impact on the functioning of patients, their socialization, and the level of their disability.

Methods. We studied the features of clinical and psychopathological manifestations in patients suffering from epilepsy. The study covered 100 patients (47 men and 53 women) who were in inpatient care. The following psychodiagnostic techniques were used: the Toronto Cognitive Assessment TorCA, the test of 10 words of Luria, the MOCA test, the Münsterberg test, the Mini-Mult test, the quality of life scale, the Hamilton scale of depression and anxiety. We used non-pharmacological methods of rehabilitation for correction cognitive impairments in patients with mild and moderate dementia.

During the COVID-19 pandemic, patients got access to the online version of cognitive training which was very important during quarantine restrictions. Currently, a group of patients is training remotely.

Results. The following data of the study were observed: 88 % of patients had decreased memory, 38% had symptoms of depression, 28% had mild situational or neurotic depression, 8% had moderate depression, 2% had severe depression, 20% had a state of severe anxiety, 16% had symptoms of anxiety. The average rate of quality of life among all examined people was 67.5 out of 100.

Conclusions. The results of the conducted research indicate the need for further study of the features of the comorbid pathology in epilepsy and the development and implementation of nonpharmacological methods for treatments of epilepsy. There is a need for further study of the effectiveness of cognitive training in patients with epilepsy.

Background and Aims

The most common psychiatric conditions in epilepsy are depression, anxiety, behavioral, psychotic disorders and cognitive disorders as well as those which can be caused by convulsive seizures. The aims of the research were to define cognitive and affective impairments in patients with epilepsy and methods of its non-pharmacological correction, since cognitive impairments and affective disorders have a considerable impact on the functioning of patients, their socialization and the level of their disability.

Methods

We studied the features of clinical and psychopathological manifestations in patients suffering from epilepsy. The study covered 100 patients (47 men and 53 women) who were in inpatient care. The following psychodiagnostic techniques were used: the Toronto Cognitive Assessment TorCA, the test of 10 words of Luria, the MOCA test, the Münsterberg test, Mini-Mult test, the quality of life scale, the Hamilton scale of depression and anxiety. We used non-pharmacological methods of rehabilitation for correction cognitive impairments in patients with mild and moderate dementia.

During the COVID-19 pandemic, patients got an access to the online version of cognitive training which was very important during quarantine restrictions. Currently, a group of patients is training remotely.

Results

The following data of the study were observed: 88 % patients had decreased memory, 38% had symptoms of depression, 28% had mild situational or neurotic depression, 8% had moderate depression, 2% had severe depression, 20% had a state of severe anxiety, 16% had symptoms of anxiety. The average rate of quality of life among all examined people was 67.5 out of 100.

Conclusions

The results of the conducted research indicate the need for further study of the features of the comorbid pathology in epilepsy and development and implementation nonpharmacological methods for treatments of epilepsy. There is a need of further study of the effectiveness of cognitive training in patients with epilepsy.

References

1. Matsuoka H, Nakamura M, Ohno T, Shimabukuro J, Suzuki T, Numachi Y, et al. The role of cognitive-motor function in precipitation and inhibition of epileptic seizures. *Epilepsia*. 2005;46(Suppl 1):17-20. DOI: 10.1111/j.0013-9580.2005.461006.x
2. Pakpour AH, Gholami M, Esmaeili R, Naghibi SA, Updegraff JA, Molloy GJ, et al. A randomized controlled multimodal behavioral intervention trial for improving antiepileptic drug adherence. *Epilepsy Behav*. 2015;52:133-42. DOI: 10.1016/j.yebeh.2015.08.036.
3. Tan SY, Bruni J. Cognitive-behavior therapy with adult patients with epilepsy: a controlled outcome study. *Epilepsia*. 1986;27:225-33. DOI: 10.1111/j.1528-1157.1986.tb03533.x
4. McLaughlin DP, McFarland K. A randomized trial of a group based cognitive behavior therapy program for older adults with epilepsy: the impact on seizure frequency, depression and psychosocial well-being. *J Behav Med*. 2011;34:201-7. DOI: 10.1007/s10865-010-9299-z
5. Gandy, Milena & Karin, Eyal & Fogliati, Vincent & McDonald, Sarah & Titov, Nick & Dear, Blake. A feasibility trial of an Internet-delivered and transdiagnostic cognitive behavioral therapy treatment program for anxiety, depression, and disability among adults with epilepsy. *Epilepsia*. 2016; 57. DOI: 10.1111/epi.13569.
6. Rodakowski J., Saghaei E., Butters M.A., Skidmore E.R. Nonpharmacological interventions for adults with mild cognitive impairment and early stage dementia: an updated Scoping Review. *Mol. Aspects Med*. 2015; Jun. — Oct.: 1-16. DOI: 10.1016/j.mam.2015.06.003.
7. Wilson R.S., Scherr P.A., Schneider J.A., Tang Y., Bennett D.A. Relation of cognitive activity to risk of developing Alzheimer disease. *Neurology*. 2007; 69(20): 1911-20. DOI: 10.1212/01.wnl.0000271087.67782.cb
8. Kolb B., Gibb R. Principles of neuroplasticity and behavior. In: D. Stuss, G. Winocur, I. Robertson (eds). *Cognitive neurorehabilitation: Evidence and Application* (2nd ed.). Cambridge University Press, NY, USA. 2008; 6-21. DOI: 10.1017/CBO9781316529898.003



9. Naumenko AA, Gromova DO, Preobrazhenskaya IS. Cognitive Training and Rehabilitation for Patients with Cognitive Impairment. Doctor.Ru. 2017;11(140): 31–38. URL: <https://journaldoctor.ru/upload/iblock/f4a/5.pdf>