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Cognitive Impairments in Patients with Epilepsy

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Abstract

A persistent propensity for epileptic seizures as well as the neurobiological, cognitive, psychological, and social effects of this illness define epilepsy as a chronic, polyetiological neuropsychiatric disorder. One of the most prevalent neuropsychiatric conditions, epilepsy affects roughly 65 million people globally. With age, the prevalence of epilepsy rises. Therefore, 25% of cases of this illness are initially discovered in people over 65. Epilepsy is significantly more common in a number of neuropsychiatric and physical illnesses, including traumatic brain injury, cerebrovascular disorders, and Alzheimer's disease.

Keywords: Cognitive disorders • Neuropsychiatric disorders • Pathology

Introduction

The condition is distinguished by a variety of clinical symptoms. There are cognitive disorders, epileptic psychoses, depression, anxiety, and obsessive-compulsive disorders, behavioural disorders, and epileptic encephalopathies among the many different types of mental disease. Epilepsy sufferers experience mental illnesses more frequently than the normal population. According to some experts, nearly a third of persons with epilepsy experience comorbid psychological illnesses, such as sadness, anxiety, and dysphoria. These diseases significantly impede quality of life and severely complicate the course of the underlying condition. A two-way causal association between mental and behavioural illnesses and epilepsy is acknowledged by certain researchers [1], although it is also acknowledged by others [2,3]. In addition to having a greater likelihood of suicide, lower compliance with treatment guidelines, lower quality of life, and less effective seizure control, patients with comorbid disorders are more likely to seek medical attention [4]. Epilepsy patients' social functioning, adherence to therapy, and quality of life are all considerably worsened by cognitive dysfunction. Perception, attention, memory, praxis, language, executive functions, and social intelligence are the primary cognitive processes. A pathogenetically developing epileptic system includes several functionally distinct zones and determinant foci, the development of secondary and tertiary foci, including mirror foci, and the establishment of new pathological interneuronal relationships. These changes cause a significant rearrangement of the brain's cytoarchitecture. The hippocampus's damage determines whether there is cognitive impairment. So, although atrophy of the right hippocampus is characterised by a lack of nonverbal learning and memory, lesions of the left hippocampus result in a considerably more dramatic drop in the amount of verbal learning. Epilepsy sufferers' cognitive abilities are impacted by genes, organic brain damage, the epileptic process, antiepileptic medication use, the specific patient condition, and personality features. Each patient's cognitive performance is impaired as a result of the elements described above actively interacting. The sort of epilepsy and seizures that the patient experiences directly affects how they think and behave. Significant cognitive impairment is more often brought on by generalised tonic-clonic seizures. As a result, a broad tonic-clonic assault may cause a 24-hour period of diminished attention. It is obvious that this phenomenon severely impacts cognitive functioning in patients who experience frequent seizures, even if such alterations are likely to persist less time in patients with complex partial seizures than in those with generalised tonic-clonic seizures.

Description

Another significant element that affects how well individuals perform cognitively is psychiatric comorbidity. First, some mental diseases, for instance those linked to cognitive abnormalities. The orbitofrontal loop's shape has been discovered to be dysfunctional in several investigations of people with mood disorders, which paints a distinct image of impaired executive function and attention. Second, individuals with mental illnesses sometimes have a poor sense of their cognitive capacities, particularly in cases of mood and anxiety disorders, which include cognitive complaints as a core component. There is no question that some anticonvulsants have an impact on the cognitive abilities of epilepsy patients, and that this impact is closely correlated with the anticonvulsant's dose. The results of a cohort research with a sizable patient sample indicated that low premorbid cognitive ability and epileptic processes combined to produce cognitive problems in individuals with epilepsy [5].

Four clinical subtypes of moderate cognitive impairment are identified by researchers. Amnestic monofunctional type: selective memory impairment with relatively preserved other cognitive functions; Amnestic multifunctional type: multiple cognitive impairments with relatively preserved memory; Multifunctional Type Without Memory Impairment: Multiple Cognitive Impairments; Mono-functional Non-Amnestic Type: Presence of a Deficiency of One of the Above; Multifunctional Type Without Memory Impairment: Multiple Cognitive Impairments; Multifunctional Type Without Memory Impairment: Multiple Cognitive Impairments with Relatively Preserved Memory. Depending on how severe it is, cognitive impairment can be classified as mild, moderate, severe, or subjective, which are all precursors to the subsequent development of cognitive decline. During patient testing, it might not be independently verified at the same time. The most common form of treatment for epilepsy is medication. If medication is inadequate, other therapies may be performed, including surgery, to lessen the activity of epileptic foci. However, they are not always successful. The numbers show that 30% of all patients still do not experience the full benefits of therapy, a number that has not altered over the past 20 years.

Conclusion

The findings of the study indicate the need for additional research into the variables that affect the development and advancement of cognitive illnesses, as well as the creation and use of training programmes targeted at enhancing cognitive abilities and delaying the evolution of cognitive disorders. The usefulness of cognitive training in epilepsy patients requires more research.

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Conflict of Interest

None.

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