

FEATURES CLINICAL AND NEUROIMMUNOLOGICAL ASPECTS OF EPILEPTIC SEIZURES POST-STROKE GENESIS OPTIMIZATION TREATMENT

¹*Xudoynazarov Haydarqul Sohibnazar ugli*
²*Khodjueva Dilbar Tadjievna*

¹*Assistant of the Department of Medical and Biological Sciences of the Termez branch
of the Tashkent Medical Academy*

²*Head of the Department of Neurology, Bukhara State Medical Institute, Professor*

Resume. *Currently, the following concept has been adopted on this issue: not only biological factors (etiology, localization of the focus), but also therapy (the number and types of drugs used), as well as psychological and social factors (fear of seizures, stigma) are important aspects of the development of psychiatric problems. and especially depression in epilepsy.*

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After Hippocrates, this issue was forgotten due to the primitive ideas about epilepsy, which persisted into the Middle Ages, when epileptic phenomena were explained in terms of various mystical, magical and religious concepts.

With the beginning of the use of EEG for the diagnosis of epilepsy in the 2020s and the introduction of phenobarbital into practice, the interest of psychiatrists in epilepsy fades, since the 40s epilepsy has become a purely neurological disease. Despite the positive side of this change in the development of epileptology, neurologists considered psychiatric disorders to be reactive and did not see the bidirectionality of this relationship, and psychiatric abnormalities in epilepsy were often not assessed and not adequately treated.

However, psychosis and a high frequency of suicides in patients with epilepsy could not but attract the attention of specialists. Gradually, there was a tendency to actively involve psychiatrists in the process of treating patients with epilepsy and comorbid psychiatric disorders [7].

Despite differences in research methods on the prevalence of depression in epilepsy, in almost all cases it is shown that depression (or its main symptoms) is the most common comorbid mental disorder.

In the general population, the prevalence of depression is 1-3% in men and 2-9% in women [9]. The lifetime prevalence of major depressive disorder (at least one episode in a lifetime) in the general adult population according to the Epidemiological Catchment Area Study is 5.8% [1]. However, other data indicate a higher prevalence - 26% of women and 12% of men [2].

According to Harden et al. (2002), depression is more common among patients with epilepsy than in the general population [6].

The most common psychiatric disorder in epilepsy is depression. However, despite this unequivocal statement, it must be pointed out that the term depression does not fully reflect the current understanding of this condition.

According to the widely used DSM-IV classification of psychiatric disorders, the following depressive disorders (DR) are distinguished: major DR, dysthymic disorder, minor depression, DR due to a somatic disease or the use of any substance, or unidentified DR [7]. In general, depression in the above neurological diseases meets the criteria for DR specified in the classification. However, this does not apply to depression in epilepsy. There is some evidence that depression in epilepsy often does not meet the criteria for standard DR and is not detected using conventional tests for depression [3]. Some authors distinguish depression in epilepsy as a separate category of DR [1].

The connection between depression and epilepsy has been known since antiquity. Back in 400 BC. Hippocrates in his book *The Sacred Disease* questioned the current mystical ideas about epilepsy and suggested its organic nature and connection with the brain [4]. Regarding the mood in epilepsy, he writes: a melancholic is usually an epileptic and a melancholic epileptic: this is determined by the direction of the development of the disease; if it affects the body, epilepsy develops, if the soul is melancholy.

As you can see, the genius of the ancient doctor consisted not only in indicating melancholy as an integral part of the clinical spectrum of epilepsy, but also in recognizing a two-way connection, to which researchers returned only more than 20 centuries later.

Hermann et al. (2000), guided by the DSM-IV and ICD criteria, in their review of the literature determined that the prevalence of mood disorders among patients with epilepsy ranged from 44 to 63%, and separately for large DR averaged 29% [10]. Interestingly, the gender difference found in the general population has not been confirmed in depressed patients with epilepsy.

The O'Donoghue study showed that depression is more pronounced in patients with uncontrolled (resistant, refractory) epilepsy (33%) than in patients with controlled epilepsy (6%) [7]. The relationship between parental loss in childhood and adult mental illness has been extensively researched, but the results are inconsistent. This can be attributed to the main methodological limitations discussed elsewhere (Tennant et al., 1980a). [4]. Bloom et al. (2002) in a large population-based study determined the lifetime prevalence of depression, epilepsy, diabetes mellitus, and asthma in 185,000 respondents. Of the 2,900 identified patients with epilepsy, 29% reported having had at least one episode of depression during their lifetime, which contrasts with the prevalence of DR in the groups of healthy respondents (8.6%), patients with diabetes mellitus (13%) and asthma (16%) [ten].

Some review authors suggest considering only studies using DSM-IV and ICD criteria. However, there are more studies that use screening tools (Hamilton scale, Beck scale, etc.) to identify symptoms of depression [8. nine].

Recent studies have shown that depression and epilepsy can be caused by the same causes. Currently, a number of pathogenetic mechanisms characteristic of epilepsy and depression have been identified [12]:

- impaired metabolism of a number of neurotransmitters in the central nervous system, especially serotonin (5-hydroxytryptamine, 5-HT), norepinephrine, dopamine, GABA and glutamate;
- atrophy of the temporal and frontal regions (determined using high-precision MRI and volumetric measurements), as well as structural changes characterized by changes in the amygdala, hippocampus, entorhinal cortex, lateral temporal cortex, as well as in the prefrontal, orbitofrontal and medial frontal cortex and, to a lesser extent, in the thalamus and basal ganglia;

- these are functional disorders in the temporal and frontal lobes (detected by PET and spectrum), which consist in a decrease in binding to 5-HT_{1A} receptors in the medial structures, the raphe nucleus, the thalamus and the gyrus of the singularity;

- is a dysfunction of the hypothalamic-pituitary-adrenal system.

However, the presence of epilepsy increases the risk of developing depression, but the development of depression and suicidal thoughts in a patient are factors that can exacerbate his unprovoked seizures and the subsequent development of epilepsy [12].

We conducted a study based on a survey of 129 patients with epilepsy, (38%) men and 80 (62%) women aged 18 to 75 years (Fig. 1), who were treated in the neurology department, as well as who initially applied to clinic, registered with neurologists, therapists in polyclinics.

According to general demographic characteristics, the distribution was as follows (Table 1): the average age of the subjects in the total sample was 39.5 ± 9.9 years, 25 people (19.4%) had secondary education, 55 people (42.6%) had secondary specialized education.), higher - 49 people (38%), 98 people (76%) were not working, 31 (24%) were employed.

51 (39.5%) people had a family, were officially or not officially married, 78 (60.5%) did not have a family. 57 (44.2%) people did not have a disability group, 38 (29.5%) people had a disability group III, 34 (26.4%) people had a disability group II.

Epilepsy, anxiety and depression are all common disorders. Therefore, it is not surprising that these conditions coexist in a significant number of patients. Indeed, according to some authors, the lifetime prevalence of depression in combination with epilepsy is as high as 55%. Despite this, surprisingly little research has been done on the mechanism of depression and anxiety in epilepsy, and even less on its treatment. Most epilepsy clinics are overloaded with referrals and the consultation naturally tends to focus on the patient's seizures and their treatment; but it is vital that physicians treating people with epilepsy be able to recognize symptoms of anxiety and, in particular, symptoms of depression. Depression significantly reduces the quality of life, but it is a highly treatable condition. Depression can directly increase the frequency of seizures through the mechanism of sleep deprivation; failure to recognize depression or inadequate treatment can lead to suicide. Depression also often impairs compliance with antiepileptic drugs. Physicians at epilepsy clinics often fail to diagnose depression in their patients, and even when they do, many of them remain inadequately treated. In primary care, many general practitioners (GPs) are reluctant to prescribe antidepressants to people with depression and epilepsy for fear that they may worsen seizures. As will be seen from the discussion below, this fear is largely unjustified. The mental health of people with epilepsy is often overlooked. If this article does nothing else, it should encourage readers to examine their practice and ask if they are addressing this important aspect of epilepsy care.

Depression in epilepsy may be temporally associated with seizures, but the most common disorder is interictal depression. In addition to the recognized symptoms of anhedonia (lack of pleasure), decreased appetite, poor energy, and disturbed sleep, interictal depression or dysphoria is more likely to be associated with agitation and psychotic features or impulsive self-harm than depression in people without epilepsy; a fact to keep in mind when dealing with a restless or aggressive patient in the clinic.

Preictal depression may appear several hours before an attack; If this pattern can be recognized, a short-acting benzodiazepine such as clobazam can be used to control seizures. Ictal depression is rare, much less common than ictal fear or anxiety, but can be serious. Epidemiology Estimates of the prevalence of depression in epilepsy vary. The prevalence of depression in patients is 50-55% in patients attending inpatient epileptic clinics or video telemetry departments. These figures are based on populations, including those with more severe epilepsy, but the few community studies that do exist show that population prevalence is not

negligible: 20–30% in patients with recurrent seizures and 6–9% in those with who is in remission. got depressed. However, depression is probably no more common in epilepsy than in other chronic neurological conditions. There is conflicting evidence about factors that increase the risk of depression. Most studies show that uncontrolled seizures are associated with a higher prevalence than no seizures, but people with temporal lobe epilepsy appear to be at greater risk than people with idiopathic generalized epilepsy, suggesting that it is not just the presence of seizures or social implications of the diagnosis. epilepsy are to blame. Depression in a first-degree relative has also been identified as an independent risk factor indicating genetic predisposition. Paradoxically, depression may follow remission of epilepsy either after epilepsy surgery or after taking effective antiepileptic drugs, as part of the forced normalization phenomenon first described by Landolt. Indeed, the first few months after epilepsy surgery, successful or not, have been identified as a period of increased risk for psychiatric disorders; therefore, it is important that patients preparing for surgery are evaluated by a psychiatrist associated with the program.

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