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ABSTRACT

of the dissertation submitted for the degree of Doctor of Philosophy in medicine

DEPRESSIVE EPISODES DURING EPILEPSY IN CHILDREN (12-17 YEARS OLD)

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Field of science: Medicine

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INTRODUCTION

The urgency of the problem. Epilepsy is a neuropsychiatric disease known since ancient times. Despite centuries of research history, many aspects of epilepsy remain unclear.[1,2] However, the medical and social importance of epilepsy remains high. People with epilepsy are more stigmatized and have a lower quality of life than other chronic diseases.[3] This is due to its prevalence and stigmatization of patients. Although epilepsy is one of the most common neurological diseases in the world, some aspects have not been sufficiently studied. In recent scientific studies, it is noted that there is comorbidity between epilepsy and mood disorders.

This study suggests that depressive disorders occurring in epilepsy may have a different clinical feature from affective disorders observed in other somatic diseases.

These differences can be explained primarily by the disruption of brain activity by the epileptic process. It should also be noted that the activity of neurons changes under the influence of antiepileptic drugs.

Depression can occur during long-term control of seizures (in the absence of seizures), which is explained by a decrease in the alertness of brain neurons during continuous treatment with antiepileptic drugs. Similarly, the emergence of postictal depression is explained by the emergence of inhibitory mechanisms in response to neuronal excitation during a seizure.[4]

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2. *Şirəliyeva R.K. Klinik nevrologiya . Bakı: " Abşeron Nəşr , İSBN 978-9952-8020-5-4 , 2009, 528 s.*
3. *Scott RA, Lhatoo SD, Sander JW. The treatment of epilepsy in developing countries: where do we go from here? Bull WHO 2001;79:344-51.*
4. *Blumer D. P. Interictal Dysphoric Disorder In:Behavioral aspects of epilepsy. Principles and practice (Eds. S. C. Schachter, G. L. Holmes, D.G.A. Kasteleijn-NolstTrenite). New York. 2008; 209-217.*

The long-term prognosis of childhood-onset epileptic seizures is uncertain. Although most patients with childhood epilepsy are seizure-free by the time they reach adulthood, they are at increased risk for social and educational problems. The risk of death increases in patients who do not have epilepsy.[5]

Depression in children with epilepsy is not detected in time and patients do not receive appropriate treatment. One of the reasons for incomplete diagnosis by clinicians is inadequate evaluation of the depressive state. [6, 7]

Thus, timely detection and treatment of depression in children during epilepsy can prevent further complications and improve their living conditions.

In the WHO European Region, epilepsy-related costs are estimated at €20 billion per year. In this regard, in the European region, WHO presents a systematic analysis of the global, regional and national burden of epilepsy, epilepsy disease for the years 1990-2016, which shows that Azerbaijan is the country with the highest incidence of epilepsy in the South Caucasus. These are clearly visible from the number of epilepsy, growth rate, death rate, and the DALY's indicators.[8]

The above data indicate that the study of depressive episodes during epilepsy in children, development of treatment and prevention of this comorbidity remains one of the most urgent problems.

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5. *Sillanpaa M, Jalava M, Kaleva O, et al. Long-term prognosis of seizures with onset in childhood. N Engl J Med 1998;338:1715-22. .*
6. *Gilliam F., Santos J., Vahle V. et al.Depression in Epilepsy: Ignoring clinicalexpression of neuronal networkdysfunction? Epilepsia. 2004; 45 (2):*
7. *Калинин В. А., Повереннова И. Е., Бекетова Е. М., Громаковская М. А. Математическое моделирование процесса эпилептогенеза в различных возрастных группах. Эпилепсия и пароксизмальные состояния 2016; 8 (3): 74–83 .*
8. *WHO: https://www.who.int/ru/news-room/fact-sheets/detail/epilepsy Global, regional, and national burden of epilepsy, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016 Lancet Neurol 2019; Volume 18; ISSUE 5; P. 357–375. DOI: https://doi.org/10.1016/S1474-4422(19)30120-6.*

The object and subject of the study: assessment of depressive disorders during different forms of epilepsy in 156 children (aged 12-17 years). After entering the Children's Neurological Hospital, children with epilepsy were examined in a non-contact manner.

The purpose of the study: evaluation of depressive disorders during epilepsy in children, development of diagnostic and treatment tactics.

Research objectives:

1. To study the characteristics of epilepsy in children (12-17 years old) in inpatient treatment in 2018-2022.
2. To study the incidence of depression in children with epilepsy (12-17 years old).
3. Assessing depression during epilepsy in children.
4. To study depressive disorders in the interictal period in children with epilepsy (12-17 years old).
5. To analyze the treatment of depression during epilepsy in children (12-17 years old).

Research methods:

- Clinical and neurological examination
- Instrumental electroencephalography
- Hamilton's depression scale
- Anamnestic
- Statistical methods
- **The main provisions put forward for defense:**
- Detection of depressive disorders during epilepsy in children.
- Assessment of depressive disorders during epilepsy in children.
- For the first time in children, depressive disorders in various forms of epilepsy were detected in time, treated, and clinical recommendations were developed to prevent further complications.

The scientific novelty of the research.

- Detection and assessment of depressive disorders during epilepsy in children was carried out.
- Diagnosis and treatment tactics of depressive disorders encountered during epilepsy in children have been developed.

- For the first time, clinical recommendations have been developed for timely detection and treatment of depressive disorders during various forms of epilepsy in children, and to prevent further complications.

Practical significance of the study.

- The results of the conducted scientific research work will make it possible to assess depressive disorders during various forms of epilepsy in children.
- It will provide timely treatment of depressive disorders during epilepsy.
- Diagnosis of depressive disorders during epilepsy in children is of great practical importance. Thus, having a positive effect on the course of the disease, it will improve the prognosis.

The approbation and application of the dissertation. The results of the dissertation were presented at conferences and congresses held both in the country and abroad:

At the conference on "Neurological diseases of childhood" (December 20, 2018; Baku, Azerbaijan), at the symposium of the "Actual problems of neurology" conference (Nakhchivan city, June 2019), at the 17th Eurasian and World Turkish Pediatrics Congress (UNPSTR) (Baku city, September 2019), Neurology week: Visually presented at the 4th International Neurology Congress of Turkic-speaking countries (December 19-20, 2019), Karabagh II-International Congress of Applied Sciences (November 8-10, 2021).

The initial discussion of the case was discussed at the joint interdepartmental meeting of the department of neurology and psychiatry of the Azerbaijan Medical University (protocol No. 11; May 11, 2023). The discussion of the dissertation work was held at the meeting of the Approval Commission of the ED 2.05 Dissertation Council operating under the Azerbaijan Medical University (November 27, 2023; protocol No.2) and was reflected in the following articles.

Publications. Based on the materials of the dissertation, 13 scientific works were published. 6 magazine articles (3 abroad), 7 theses (4 abroad) have been published. The journals in which the

articles are published are the journals recommended by the Higher Attestation Commission.

Name of the organization where the dissertation work was carried out: Department of Neurology of Azerbaijan Medical University, Children's Neurological Hospital, Mental Health Center of the Ministry of Health of the Republic of Azerbaijan.

Application of the results of the dissertation. The scientific and practical results obtained during the current dissertation were applied in the diagnosis and treatment of the Children's Neurological Hospital and in the teaching process of the Department of Neurology of the Azerbaijan Medical University.

The structure and total volume of dissertation: The dissertation work is annotated on 150 pages (out of 185.334 characters) as a computer text. Dissertation from the introduction (9,547 characters), chapter I. Literature review (57,580 characters), chapter II. Research materials and methods (17,341 characters), Chapter III results of personal research (24,689 characters), Chapter IV. Treatment of depressive episodes during epilepsy in children (12-17 years) contains (34,911 points), conclusion, conclusion, practical recommendations (41.358 points) and literature list. The research work is illustrated with 37 tables and 4 graphs. The list of references contains 188 sources, of which 10 are in Azerbaijani, 37 are in Russian, and 141 are in English.

MATERIALS AND METHODS OF THE RESEARCH

Research participants 156 people (aged 12-17 years) were evaluated for depressive disorders during various epileptic seizures in children at the Children's Neurological Hospital. Severity of depression was studied using the Hamilton scale and ISD-10.

Among those examined, 132 were boys and 24 were girls. During the study, 63 people were diagnosed with G40.0 Focal epilepsy, and 93 people were diagnosed with G 40.3 Generalized epilepsy. At the same time, various forms of epilepsy and degrees of depression were detected in 106 patients among the examined patients.

That is, 68% of patients with epilepsy have various degrees of depression. Out of 106 patients, mild depression was found in 83 people, moderate depression in 21 people and severe depression in 2 people.

Inclusion criteria: Age limit of examined patients was 12 to 18 years.

Exclusion criteria: patients under 12 years of age, 18 years of age and older.

Anamnesis was collected from the patients and a neurological examination was performed. For each child, a patient examination card developed for our study was filled out. In this questionnaire, the patient's demographic indicators, medical history, epilepsy indicators were recorded.

Hamilton's depression scale was used to detect different degrees of depression in children with epilepsy.

The examined patients underwent electroencephalographic examination with 16 channels, electrodes placed 10/20 according to the international system, with NeuroSpectr equipment.

From the methods of neurovisualization, CT and MRI examinations of the brain were performed on the patients. The CT examination was performed on a Toshiba Asteion computed tomography scanner, which simultaneously acquired data from 4 slices with a thickness of 0.5 mm to 5 mm.

MRI examination was performed using SIGNA CONTOUR 1.5 Tesla and 3 Tesla in different devices.

The study was supported by the Ethics Committee of Azerbaijan Medical University. (protocol No. 9 dated 23.10.2019).

Mathematical-statistical analysis methods. Research study by design – cohort and control; according to the material - prospective; according to the method - clinical; according to the volume - selection; by type – scientific; according to the duration – transversely and longitudinally; according to location - clinically evaluated.

Statistical analysis was carried out in the IBM Statistics SPSS-26 program using variation, discriminant, dispersion and correlation analysis methods.

In cross-sectional studies, depending on the number of compared groups and gradations of symptoms, the U-Mann-Whitney criteria were used in the comparison of two series, and the H-Kruskal-Wallis criteria were used in the comparison of multiple series.

Longitudinal studies in dependent groups were conducted using the W-Wilcoxon test. In discriminant analysis, 2 x 2, 2 x n, n x 2, etc. cross-tables were drawn up, the difference between the indicators of the groups was assessed by the Chi-square Pearson test (with the addition of Yates correction if the number of indicators is less than the indicators). In the analysis of variance, the effect of the studied criterion on the final result was evaluated by ANOVA test, statistical integrity was evaluated by F-Fisher test. Correlation analysis was performed using non-parametric color Rho-Spearman method. In order to reject the "0" hypothesis, the limit of $p < 0.050$ was selected in all statistical analysis methods.

RESEARCH RESULTS AND THEIR DISCUSSION

The study included 156 patients aged 12-17 years (14.0±0.1 years) who applied to the Children's Neurological Hospital and were treated for the diagnosis of epilepsy during 2018-2022. The duration of the disease lasted from 1 to 15 years (5.0±0.3 years). The onset of the disease was observed between the ages of 1 and 16, and on average, it was observed more often at the age of 9.0±0.3 years. In this group, the mean of Hamilton grade is 8.9±0.4 and ranges from 0-23 (table 1).

Table 1.

Distribution of patients by age and duration of illness

Indicators	N	M	m^2	Min.	Max.
Age	156	14,0	0,1	12	17
Duration of illness	156	5,0	0,3	1	15
The debut of the disease	156	9,0	0,3	1	16
Hamilton	156	8,9	0,4	0	23

132 (84.6%) of the patients included in the study were boys, 24 (15.4%) were girls (graph 1).

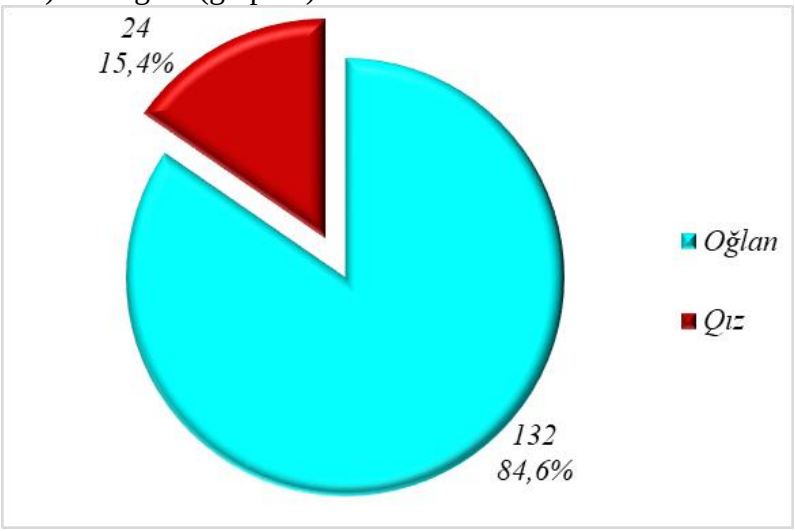


Chart 1. Distribution of patients by gender

63 (40.4%) of patients - G40.0; 93 (59.6%) people were diagnosed with G40.3 (table 2).

Table 2.

Distribution of patients by diagnosis:

	N	%
G40.0	63	40,4
G40.3	93	59,6
Cəmi	156	100,0

There were 54 (40.9%) of boys diagnosed with G40.0 focal epilepsy, and 9 (37.5%) of girls. 78 (59.1%) of the boys and 15 (62.5%) of the

girls were diagnosed with G40.3 generalized epilepsy. Patients with a diagnosis of generalized epilepsy prevail here. (Pu=0.775).

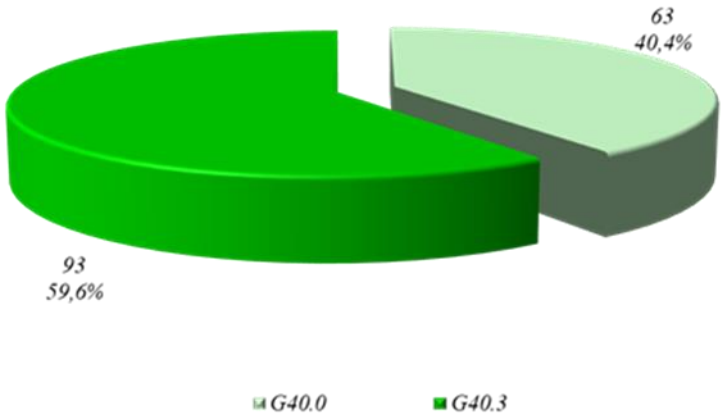


Chart 2. Distribution of patients by diagnosis

Patients included in the study had various types of seizures. Among the examined patients, simple partial seizures were observed in 15 (11.4%) boys and 2 (8.3%) girls (Pu = 0.662). Absences occurred in 7 (5.3%) boys and 1 (4.2%) girl (Pu=0.817). Generalized tonic-clonic seizures were present in 67 (50.8%) boys and 13 (54.2%) girls (Pu= 0, 759). Complex partial seizures were found in 39 (29.5%) boys and 7 (29.2%) girls (Pu= 0.970). Myoclonic seizures occurred in 4 (3.0%) boys and 1 (4.2%) girl (Pu=0.772).

All 156 (100%) patients with epilepsy included in the study were treated with various antiepileptic drugs. (Pu = 0.463). Carbamazepine was taken by 43 (32.6%) boys and 6 (25.0%) girls. 98 (74.2%) boys and 19 (79.2%) girls received valproic acid. (Pu=0.609). Levetiracetam was taken by 19 (14.4%) boys and 2 (8.3%) girls (Pu=0.425). Clonazepam was taken by 5 (3.8%) boys. (Pu=0.334). Topiramate was taken by 1 (0.8%) boy. (Pu=0.670).

During the study, depression was not detected in 43 (32.6%) boys and 7 (29.2%) girls. According to the degree of depression, 70 (53.0%) boys and 13 (54.2%) girls had mild depression, 17 (12.9%) boys and 4 (16.75) girls had moderate depression, 2 (1.5%) severe depression was observed in the boy (PU= 0.717).

If we look at the results of Hamilton's depression scale, we see that different indicators were found in boys and girls based on the scale's items. Thus, the depressive mood among boys was evaluated as 1 point in 69 (52.3%) boys and 11 (45.8%) girls, 2 points in 17 (12.9%) boys and 3 (12.5%) girls (PU =0.594). Feeling of guilt was 1 point in 6 (4.5%) boys, 2 (8.3%) girls, 2 points in 2 (1.5%) boys. (PU=0.694). Suicidal intention in 1 (0.8%) boy. 1 point, 1 (0.8%) boy was evaluated with 2 points. (PU = 0.545).

Early insomnia was rated 1 point in 53 (40.2%) boys, 8 (33.3%) girls, 2 points in 51 (38.6%) boys and 9 (37.5%) girls. (PU=0.965)

Insomnia during the night was rated 1 point in 53 (40.2%) boys and 8 (33.3%) girls, 2 points in 10 (7.6%) boys and 3 (12.5%) girls. (PU=0.516). Early morning insomnia was assessed as 1 point in 47 (35.6%) boys and 10 (41.7%) girls, 2 points in 4 (31.8%) boys and 7 (29.2%) girls. (PU=0.965) . Decrease in work and activity capacity 1 point in 11 (8.3%) boys and 1 (4.2%) girl, 2 points in 3 (2.3%) boys and 1 (4.2%) girl, 1 (0.8 %) was evaluated as 3 points in the boy. (Pu=0.683). Psychomotor retardation was assessed as 1 point in 12 (9.1%) boys, 2 points in 2 (1.5%) boys and 1 (4.2%) girl. (Pu = 0.356). Agitation (restlessness) 1 point in 45 (34.1%) boys and 10 (41.7%) girls, 2 points in 23 (17.4%) boys and 5 (20.8%) girls, 2 (1.5%)) 3 points in a boy, 4 points in 1 (0.8%) boy. (Pu=0.550). Anxiety (psychological) 1 point in 37 (28.0%) boys and 5 (20.8%) girls, 31 (23 .5%) boys and 4 (16.7%) girls scored 2 points, 1 (0.8%) boy and 1 (4.2%) girl scored 3 points. (Pu=0.449).

Anxiety (somatic symptoms) 1 point in 33 (25.0%) boys and 9 (37.5%) girls, 2 points in 44 (33.3%) boys and 7 (29.2%) girls, 3 (2.3 %) boys and 1 (4.2%) girl were rated 3 points. (Pu=0.625). Gastrointestinal somatic symptoms were evaluated as 1 point in 50

(37.9%) boys and 10 (41.7%) girls, and 2 points in 52 (39.4%) boys and 9 (37.5%) girls. (Pu=0.979). General somatic symptoms were evaluated as 1 point in 34 (25.8%) boys and 4 (16.7%) girls, and 2 points in 57 (43.2%) boys and 13 (54.2%) girls. (Pu=0.470). Hypochondriasis was assessed as 1 point in 21 (15.9%) boys and 5 (20.8%) girls. (Pu=0.553). Body weight did not decrease in 117 (88.6%) boys and 20 (83.3%) girls. 1 point in 13 (9.8%) boys and 4 (16.7%) girls, 2 points in 2 (1.5%) boys. (Pu=0.488). Self-criticism was normal in 116 (87.9%) boys and 21 (87.5%) girls, 1 point in 13 (9.8%) boys and 3 (12.5%) girls, 3 (2.3%) and 2 points were evaluated in boys (Pu=0.990).

Patients with focal and generalized epilepsy had different types of seizures. G40.0 Simple partial seizures in 17(27.0%) patients with focal epilepsy, (Pu=<0.001), complex partial seizures in 45(71.4%) patients, (Pu=<0.001), G40.3Generalized absences with the diagnosis of epilepsy in 8 (8.6%) people, (Pu=0.017), generalized tonic-clonic seizures in 80 (86.0%) people, (Pu<0.001), myocloic seizures in 4 (4.3%) people has been (Pu=0.347).

Patients with focal and generalized epilepsy included in the study received various antiepileptic drugs. With the diagnosis of G40.0 focal epilepsy, 27(42.9%) people received carbamazepine, (Pu= 0.007), 42(66.7%) people received valproic acid, (Pu=0.009), 7(88.9%) people received levetericitam, (Pu =0,480),1(1.6%) clonazepam, (Pu=0,347), and 21(22,6%) people with the diagnosis of G40.3 generalized epilepsy took carbamazepine, (Pu=0,007), 75(80,6%) people valproic acid, (Pu=0,009), 14(15.1%) people took levetericitam, (Pu=0,480), 4(4,3%) clonazepam. (Pu=0.347).

The detection of depression in patients with different epilepsy diagnoses suggests that different degrees of depression were assessed. Among patients diagnosed with G40.0 focal epilepsy, 33 (52.4%) patients had mild depression, 7 (11.1%) had moderate depression, and 1 (1.6%) had severe depression. G40.3 Generalization with the diagnosis of epilepsy, 50 (53.8%) patients had mild depression, 14 (15.1%) patients had moderate depression, and 1 (1.1%) patient had severe depression. (Pu=0.459).

Among the patients diagnosed with focal and generalized epilepsy, the results were evaluated with different points based on the points of the Hamilton scale and we were able to compare them.

32 (50.8%) of patients diagnosed with focal epilepsy had 1 point, 8 (12.7%) had 2 points. G40.3 In patients diagnosed with generalized epilepsy, depressive mood was assessed by 1 point in 48 (51.6%) people and 2 points in 12 (12.9%) people. (Pu = 0.905). In patients diagnosed with G40.0 focal epilepsy, the feeling of guilt was assessed as 1 point in 5 (7.9%) people, and 2 points in 1 (1.6%) people. G 40.33 Among those diagnosed with generalized epilepsy, the feeling of guilt was assessed as 1 point in 3 (3.2%) people and 2 points in 1 (1.1%) person. (Pu=0.196). 63 (100.0%) patients with a diagnosis of G40.0 focal epilepsy did not have suicidal intentions. 91(97.8%) patients with generalized epilepsy did not have suicidal intentions, 1(1.1%) person had 1 point, 1(1.1%) person had 2 points. (Pu = 0.243). G40.0 Early insomnia in patients diagnosed with focal epilepsy was assessed as 1 point in 25 (39.7%) people and 2 points in 22 (34.9%) people. With the diagnosis of G40.3 generalized epilepsy, early insomnia was assessed as 1 point in 36 (38.7%) people, and 2 points in 38 (40.9%) people. (Pu = 0.385).

G40.0 Insomnia during the night in patients diagnosed with focal epilepsy was assessed as 1 point in 7(11.1%) people and 2 points in 5(7.9%) people. G40.3 Insomnia during the night in patients diagnosed with generalized epilepsy was assessed as 1 point in 12 (12.9%) people and 2 points in 8 (8.6%) people. (Pu=0.719). G40.0 Insomnia in the early morning in patients diagnosed with focal epilepsy was assessed as 1 point in 22 (34.9%) people and 2 points in 21 (33.3%) people. G40.3 Insomnia in the early morning hours in patients diagnosed with generalized epilepsy was assessed as 1 point in 35 (37.6%) people and 2 points in 28 (30.1%) people. (Pu=0.775). In patients diagnosed with G40.0 focal epilepsy, work and activity ability was assessed as 1 point in 2 (3.2%) people, 2 points in 1 (1.6%) person, and 3 points in 1 (1.6%) person. In patients diagnosed with G40.3 generalized epilepsy, work and activity ability was assessed as 1 point in 10 (10.8%) people and 2 points in 3 (3.2%) people.

(Pu=0.151). In patients diagnosed with G40.0 focal epilepsy, psychomotor slowness was assessed as 1 point in 3 (4.8%) people and 2 points in 2 (3.2%) people. In patients diagnosed with G40.3 generalized epilepsy, psychomotor retardation was assessed as 1 point in 9 (9.7%) people and 2 points in 1 (1.1%) person. (Pu=0.596). In patients diagnosed with G40.0 focal epilepsy, 20(31.7%) patients had 1 point, 7(11.1%) had 2 points, and 1(1.6%) had 3 points. G40.3 Agitation in patients diagnosed with generalized epilepsy was 1 point in 35(37.6%) people, 2 points in 21(22.6%) people, 3 points in 1(1.1%) people, 1(1.1%)) was rated 4 points per person. (Pu=0.017).

Anxiety (psychological) in patients diagnosed with G40.0 focal epilepsy was assessed as 1 point in 18 (28.6%) people, 2 points in 11 (17.5%) people, and 3 points in 1 (1.6%) people. G40.3 In patients diagnosed with generalized epilepsy, anxiety (psychological) was assessed as 1 point in 24 (25.8%) people and 2 points in 24 (25.8%) people. (Pu=0.382). G40.0 Diagnosis of focal epilepsy. Anxiety (somatic symptoms) in patients with In patients diagnosed with G40.3 generalized epilepsy, anxiety (somatic symptoms) was assessed as 1 point in 30 (32.3%) people, 2 points in 27 (29.0%) people, and 3 points in 1 (1.1%) people. (Pu=0.335). Gastrointestinal somatic symptoms in patients diagnosed with G40.0 focal epilepsy were assessed as 1 point in 25 (39.7%) people and 2 points in 24 (38.1%) people. In patients diagnosed with G40.3 generalized epilepsy, gastrointestinal somatic symptoms were evaluated as 1 point in 35 (37.6%) people and 2 points in 37 (39.8%) people. (Pu=0.901). In patients diagnosed with G40.0 focal epilepsy, general somatic symptoms were assessed as 1 point in 13 (20.6%) people and 2 points in 31 (49.2%) people. In patients diagnosed with G40.3 generalized epilepsy, general somatic symptoms were assessed as 1 point in 25 (26.9%) people and 2 points in 39 (41.9%) people. (Pu=0.524). Sexual symptoms in patients diagnosed with G40.0 focal epilepsy were 1 point in 2 (3.2%) people. In patients diagnosed with G40.3 generalized epilepsy, sexual symptoms were assessed as 1 point in 9 (9.7%) people. (Pu=0.513). Hypochondria in patients diagnosed with G40.0 focal epilepsy was assessed as 1 point in 12 (19.0%) people. In patients diagnosed with

G40.3 generalized epilepsy, hypochondria was assessed as 1 point in 14 (15.1%) people. (Pu=0.513).

In patients diagnosed with G40.0 focal epilepsy, the decrease in body weight was assessed as 1 point in 9 (14.3%) people and 2 points in 1 (1.6%) person. In patients diagnosed with G40.3 generalized epilepsy, 8 (8.6%) patients had 1 point and 1 (1.1%) patient had 2 points. (Pu=0.249). G40.0 Self-criticism in patients diagnosed with focal epilepsy was assessed as 1 point in 5 (7.9%) people and 2 points in 2 (3.2%) people. In patients diagnosed with G40.3 generalized epilepsy, self-criticism was assessed as 1 point in 11 (11.8%) people and 2 points in 1 (1.1%) person. (Pu=0.779).

Depression was detected in 41 (38.7%) patients with G40.0 diagnosis, and in 65 (61.3%) patients with G40.3 diagnosis. (Pu=0.529).

Different types of epileptic seizures have been observed in patients with and without depression. Simple partial seizures were 6 (12.0%) in those without depression, and 11 (10.4%) in those with depression. (Pu=0.762). Absences were 3 (6.0%) in those without depression, and 5 (4.7%) in those with depression (Pu=0.735). Generalized convulsive seizures were 24 (48.0%) in those without depression, and 56 (52.8%) in those with depression. (Pu=0.574). Complex partial seizures were 16 (32.0%) in those without depression, and 30 (28.3%) in those with depression. (Pu=0.637). Myoclonic seizures were 1 (2.0%) in those without depression, and 4 (3.8%) in those with depression (Pu=0.559).

The average index of the Hamilton scale was 8.9±0.4 in those without absence seizures, and 9.5±1.8 in those without. (P=0.731). Depression was assessed as mild in 80 (54.1%) people, moderate in 19 (12.8%) people, and severe in 2 (1.4%) people without absence seizures. Among those absent, 3 (37.5%) had mild depression and 2 (25.0%) had moderate depression. (P=0.703).

The mean value of the Hamilton scale was 8.8±0.6 in those without generalized clonic-tonic convulsive seizures, and 9.0±0.5 in those who did. (P=0.764).

Among those without generalized clonic-tonic convulsions, 40 (52.6%) had mild depression, 9 (11.8%) had moderate depression, 1 (1.3%) had severe depression, and 1 (1.3%) had mild depression. mild depression was detected in 43 (53.8%) people, moderate depression in 12 (15.0%) people, severe depression in 1 (1.3%) person. (P=0.916).

The average indicator of the Hamilton scale was 8.9±0.4 in those without myoclonic seizures, and 9.0±2.5 in those who did. According to the degree of depression in those without myoclonic seizures, 80 (53.0%) had mild depression, 20 (13.2%) had moderate depression, 2 (1.3%) had severe depression, and 3 (60.0%) had) mild depression was assessed in 1 person (20.0%), moderate depression was assessed in 1 (20.0%) person. (P=0.917).

The average index of the Hamilton scale was 8.8±0.5 in those without complex partial seizures, and 9.1±0.8 in those with fever. According to the degree of depression in those without complex partial seizures, 60 (54.5%) had mild depression, 15 (13.6%) had moderate depression, 1 (0.9%) had severe depression, and 23 (0.9%) had mild depression. 50.0%) people, moderate depression in 6 (13.0%) people, severe depression in 1 (2.2%) people. (P=0.875).

The mean value of the Hamilton scale was 9.1±0.4 in those without simple partial seizures, and 7.5±1.0 in those with simple partial seizures. According to the level of depression in those without simple partial seizures, 72 (51.8%) had mild depression, 21 (15.1%) had moderate depression, 2 (1.4%) had severe depression, and 11 (64) had mild depression. .7%) was detected in people. (P=0.341).

Among those without depression, carbamazepine was taken by 15 (30.0%) people, and among those with depression, 34 (32.1%) people took it. (Pu=0.795). 34 (68.0%) of those without depression took valproic acid, and 83 (78.3%) of those who did. (Pu=0.167). 7 (14.0%) people without depression took levetiracetam, and 14 (13.2%) people who did. Among those with depression, 5 (4.7%) people took clonazepam (Pu=0.120).

During our research, we found a correlation between severe toxicosis of pregnancy and depression. So, those with severe toxicosis of pregnancy had high Hamilton indicators.

In all patients included in the research group (156 people - 100%) - EEG examination and patterns confirming epilepsy were found in all cases; 25 (16%) patients underwent CT examination and no pathology was detected, 118 (75.6%) patients underwent MRI examination and no pathology was detected, 107 (68.6%) patients underwent fundus examination and no pathology was detected, 11 (7.1 %) patients underwent USM examination and no pathology was detected, 8 (5.1%) patients underwent video-EEG monitoring and pathology was detected, 7 (4.5%) night EEG monitoring was performed and pathology was detected.

We decided to prescribe antidepressants in 22 epileptic children with depression, subject to parental permission. Venlafaxine was prescribed as an antidepressant in 11 people, and placebo in the other group. The question may arise, we used the antidepressant venlafaxine. The literature shows that venlafaxine is the least effective antidepressant for seizures.

Eleven of the identified patients were previously treated with both appropriate anticonvulsants and antidepressants. The effectiveness of the therapy was determined by the Wilcoxon W test.

Among the children included in the examination groups, 5 (45.5%) of the children receiving antidepressants were diagnosed with G40.0 Focal epilepsy and 6 (54.5%) with G40.3 Generalized epilepsy. Among the patients who did not take antidepressants, 3 (27.3%) people were diagnosed with G40.0 Focal epilepsy, and 8 (72.7%) people were diagnosed with G40.3 Generalized epilepsy (P=0.478).

Among those taking antidepressants, 7 (63.6%) were boys and 4 (36.4%) were girls. Among those who did not take antidepressants, 9 (81.8%) were boys and 2 (18.2%) were girls. (P=0.478).

All patients in both groups had depression before treatment (P=1.000). As it can be seen, the principles of randomization according to the diagnosis and gender of depression were followed in the distribution of groups. In both groups, mild depression was detected in 36.4% of patients, moderate depression in 54.5% of patients, and severe depression in 9.1% of patients.

Different degrees of pre-treatment depression were found in those who took antidepressants and those who did not. Thus, mild depression was detected in 4 (36.4%) people, moderate depression in 6 (54.5%) people, and severe depression in 1 (9.1%) person before treatment in those who took antidepressants and those who did not. (P=1,000).

Before the treatment, the patients in the treatment groups were the same age, 13.5±0.5 with an average of 13.5±0.4 years. Hamilton scale index was 15.0±1.1 in both groups. As can be seen from the table, the treatment groups do not differ from each other in terms of age and Hamilton scale indicators. Thus, hypothesis 0 was accepted. Randomization principles were followed.

Depressive mood was 1 point in 8 (72.7%) people and 2 points in 3 (27.3%) people before the treatment. In those who did not take antidepressants, 1 point was found in 3 (27.3%) people, and 2 points in 8 (72.7%) people. (P=0.033). 2 points of guilt were found in 1 (9.1%) person who took antidepressants, and 1 point in 1 (9.1%) person who did not take antidepressants (P=0.368). Suicidal intentions before treatment were found in 1 (9.1%) person who took antidepressants, and 2 points in 1 (9.1%) person who did not take antidepressants (P=0.368).

Early insomnia before treatment was detected in 4 (36.4%) people with 1 point and 7 (63.6%) people with 2 points. (P=1,000). In those who took antidepressants, insomnia during the night before treatment was 1 point in 3 (27.3%) people, 2 points in 1 (9.1%), and 1 point in 5 (45.5%) people, 2 (18.2%) people were not taking antidepressants. %) people had 2 points. (P=0.438). Before treatment, insomnia was detected in 1 point in 4 (36.4%) people and 2 points in 7 (63.6%) people in the early morning before treatment

in those who took antidepressants and those who did not (P=0.333). 2 (18.2%) people who took antidepressants had 1 point before treatment, 3 (27.3%) people who did not take antidepressants had 1 point, and 1 (9.1%) people had 3 points. (P =0.484). Before treatment, psychomotor laxity was detected in 2 (18.2%) persons, 1 point, in 1 (9.1%) person, and 2 points in 1 (9.1%) person who did not take antidepressants. P=0.513). Agitation before treatment was 1 point in 7 (63.6%) people, 2 points in 1 (9.1%) people, and 1 point in 2 (18.2%) people who were not taking antidepressants, 5 (45, 5%) people got 2 points, 2 (18.2%) people got 3 points. (P=0.077). Anxiety before treatment (psychological) in those taking antidepressants was 1 point in 3 (27.3%) people, 2 points in 6 (54.5%) people, and 2 points in 6 (54.5%) people, 2 (18, 2%) people were evaluated with 3 points (P=0.158).

Anxiety (somatic symptoms) before treatment in those taking antidepressants was 1 point in 3 (27.3%) people, 2 points in 8 (72.7%) people, and 1 point in 1 (9.1%) people in those not taking antidepressants, 8 (72 .7%) people were rated 2 points, 1(9.1%) people were rated 3 points. (P=0.392). Gastrointestinal somatic symptoms before treatment in those taking antidepressants were 1 point in 2 (18.2%) people, 2 points in 9 (81.8%) people, and 1 point in 3 (27.3%) people, 5 (45.5 %) was evaluated by 2 points per person. (P=0.114). 11 (100.0%) people who took antidepressants had 2 points for general somatic symptoms before treatment, 3 (27.3%) people who did not take antidepressants had 1 point, and 6 (54.5%) people had 2 points. (P=0.039)).Hypochondria before treatment was assessed as 1 point in 6 (54.5%) people taking antidepressants, and 1 point in 2 (18.2%) people not taking antidepressants (P=0.076). Body weight reduction before treatment in those taking antidepressants was 1 point in 3 (27.3%), 2 points in 1 (9.1%), and 1 point in 1 (9.1%) people, 1 (9.1%) in those not taking antidepressants. %) 2 points were assessed per person. (P=0.535). Self-criticism before treatment was 1 point in 5 (45.5%) people taking antidepressants, 1 point in 3 (27.3%) people and 2 in 1 (9.1%) people not taking antidepressants. Scored. (P=0.455).

Depressive mood, general somatic symptoms index (although a statistically honest difference was obtained) according to Pχ2 difference was obtained, but Manny Whitney's difference was not obtained, it was not confirmed. The feeling of agitation (anxiety) was 1 point in 63.6% of those who took antidepressants, and 18.2 in those who did not take antidepressants. 2 points were evaluated in %. However, the 0 hypothesis was again rejected. Hypochondriasis was assessed as 1 point in 54.5% of patients taking antidepressants, and 2 points in 18.2% of patients not taking antidepressants. However, hypothesis 0 was rejected. Almost the same scores were obtained for guilt, suicidal ideation, early insomnia, and sexual symptoms.

Thus, as can be seen, on all questions of the Hamilton scale, those who received antidepressants and those who did not had almost the same clinical picture before treatment. The principles of randomization remained.

A decrease in the degree of depression was noted in the indicators of all 11 people on the Hamilton scale in the dynamics of treatment. (P=0.003). Thus, the degree of depression decreased in 9 people, and it was assessed as stable in 2 people. (P=0.006).

Apparently, a statistically significant reduction in the degree of depression in the Hamilton scale was observed in patients receiving antidepressants. Hypothesis 0 was rejected in this case.

After treatment, depressive mood in 10 people, guilt in 1 person, suicidal intention in 1 person, early insomnia in 9 people, insomnia during the night in 2 people, insomnia in the early hours in 5 people, psycho-motor sluggishness in 1 person, agitation) in 6 people, anxiety (psychological) in 9 people, anxiety (with somatic symptoms) in 7 people, gastrointestinal symptoms in 2 people, general somatic symptoms in 1 person, hypochondria in 3 people, self-criticism in 2 people.

Hypothesis "0" was rejected for depressive mood, early insomnia, early morning insomnia, agitation (rest), anxiety (psychological), anxiety (with somatic symptoms). Despite this, the indicators of guilt, suicidal intention, and psycho-motor

sluggishness remained unchanged (P=0, 317). Work and activity capacity, body weight reduction did not change in any of the 11 people. (P=1,000).

Thus, in the treatment dynamics, depressive mood according to the Hamilton scale (P= 0.002), early insomnia (P=0.005), early morning insomnia (P=0.034), agitation (rest) (P=0.023), anxiety (psychological) (P=0.006), anxiety (with somatic symptoms) (P=0.015), we noted statistically significant reductions.

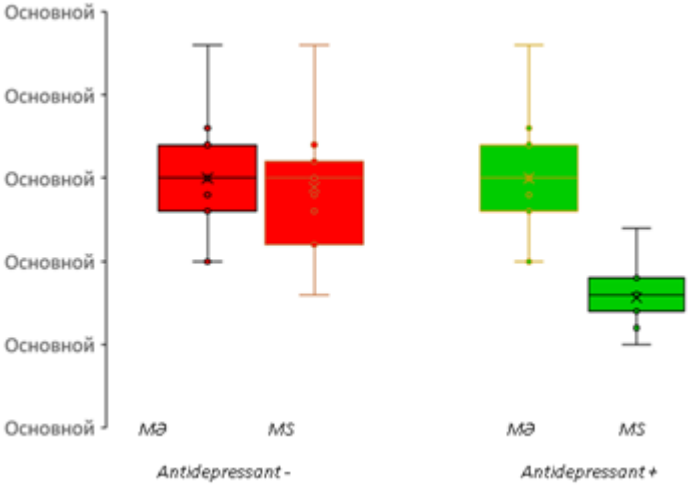
Hamilton scale decreased in 5 people, increased in 4 people, and remained stable in 2 people who did not take antidepressants during treatment dynamics (P=0.128). The degree of depression decreased in 1 person, increased in 1 person, and remained stable in 9 (P=1,000).

After treatment, there was no change in the Hamilton scale of depressive mood, guilt, suicidal intentions, early insomnia, work and activity ability, psychomotor sluggishness, anxiety (somatic symptoms), and sexual symptoms in those who did not take antidepressants (P=1,000). . Insomnia during the night was stable in 8 people, decreased in 2 people, and increased in 1 person. And the difference was not statistically honest. (P=0.564). In the early morning, insomnia decreased in 4 people, increased in 1 person, and was stable in 5 people. (P=0.317). The difference was not statistically significant. Agitation, anxiety (psychological), gastrointestinal somatic symptoms decreased in 1 person and remained stable in 10 people (P=0.317). General somatic symptoms increased in 1 person, remained stable in 10 people. (P=0.317)

In the dynamics of treatment, insomnia during the night in 2 people, insomnia in the early morning hours in 4 people, agitation (restlessness) in 1 person, anxiety (psychological) in 1 person, and gastrointestinal symptoms in 1 person decreased in those who did not take antidepressants.

After the treatment, the mean value of the Hamilton scale was 7.8±0.6 in those who took antidepressants, and 14.5±1.2 in those who did not take antidepressants. Statistical integrity of the difference between the indicators both by the Fisher test

(PF=<0.001) and by the Mann-Whitney test (Pu=<0.001). "0" made it possible to reject the hypothesis.



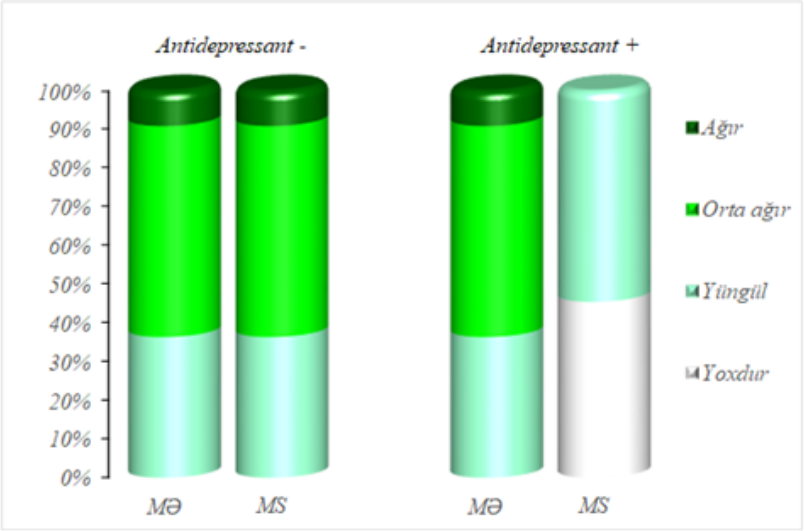
Graph 3. Indicators during the treatment in those who took antidepressants and those who did not

After treatment, improvement in depression was noted in patients taking antidepressants. Thus, after treatment, depression was not detected in 5 (45.5%) people who took antidepressants, and depression remained in all 11 people who did not take antidepressants. According to both criteria (depression, degree of depression), the statistical integrity of the difference was confirmed. In According to the degree of depression, severe depression was found in 1 person, moderately severe depression in 6 people, and mild depression in 4 people who did not take antidepressants. There were no severe and moderate depressions in those taking antidepressants, only 6 people had mild depression. Comparatively, the 0 hypothesis was rejected.

If we compare the indicators of the Hamilton scale in those who take antidepressants and those who do not, we see that they are evaluated with different scores.

According to the Hamilton scale, there was no difference between those who took antidepressants and those who did not in

terms of feelings of guilt, insomnia in the early hours, and sexual symptoms (P=0.001).



Graph 4. Indicators of the degree of depression during the treatment

Based on the depressive mood indicator, 8 people who did not take antidepressants were evaluated with 2 points, while 8 (72.7%) people who took antidepressants were evaluated with 0 points (Pu<0.001). We got a sharp difference based on this indicator. That is, this indicator improved in those who took antidepressants. Early insomnia remained in 7 (63.6%) people, but it was not detected in 9 (81.8%) people. criterion revealed the difference between them (P=0.013).

After the treatment of depression, mild depression occurred in 6 (54.5%) people who took antidepressants, while the indicators did not change in those who did not take antidepressants. , indicators did not change in those who did not take antidepressants (P=0.000). After treatment, feelings of guilt decreased in those taking antidepressants, and 1 (9.1%) person was rated as 1 point. The indicator did not change in those who did not receive treatment (P=1,000). After the treatment, there were no suicidal intentions in those who took antidepressants,

and 1 (9.1%) of those who did not take antidepressants had 1 score (P=0.306). After treatment, early insomnia decreased and 1 point in 2 (18.2%) people who took antidepressants, while the indicators did not change in those who did not take antidepressants (P=0.000). After treatment, insomnia decreased during the night in 2 (18.2%) people who took antidepressants, and 1 point in 6 (54.5%) people, and 2 points in 1 (9.1%) people who did not take antidepressants. P=0.085). After treatment, insomnia in the early hours decreased in those taking antidepressants, 6 (54.5%) people had 1 point, 2 (18.2%) people had 2 points. In those who did not take antidepressants, 6 (54.5%) people scored 1 point, 2 (18.2%) people scored 2 points. (P=1,000). After treatment, work and activity ability was 1 point in 2 (18.2%) people who took antidepressants, 1 point in 3 (27.3%) people and 3 points in 1 (9.1%) people who did not take antidepressants. has been (P=0.484). After treatment, psycho-motor sluggishness decreased in 1 (9.1%) person who received antidepressants, 1 point in 1 (9.1%) person, and 2 points in 1 (9.1%) person who did not receive antidepressants. (P=0.591). After treatment, agitation (fidgeting) in antidepressants was 1 point in 3 (27.3%) people taking antidepressants, 2 points in 1 (9.1%) people, and 1 point in 3 (27.3%) people not taking antidepressants, 4 (36.4%) people were evaluated with 2 points (P=0.087). After treatment, anxiety (psychological) was assessed by 1 point in 2 (18.2%) people who took antidepressants, 2 points in 7 (63.6%) people, and 3 points in 1 (9.1%) people who did not take antidepressants. (P= 0.005). After treatment, anxiety (somatic symptoms) in 4 (36.4%) people who took antidepressants was 1 point, 2 (18.2%) people were 2 points, and in those who did not take antidepressants, 1 point (9.1%) was 1 point, 8() 2 points in one person, 3 points in 1 (9.1%) person. (P=0.028).

After treatment, gastrointestinal somatic symptoms in those taking antidepressants were 1 point in 4 (36.4%) people, 2 points in 7 (63.6%), and 1 point in 4 (36.4%) people, 4 (36.4%) in those not taking antidepressants. %) is rated 2 points per person. (P=0.148). After treatment, general somatic symptoms were 1 point in 1 (9.1%) people, 2 points in 10 (90.9%) people, and 1 point in 2 (18.2%) people who

were not taking antidepressants. , 2 points were assessed in 7 (63.6%) people. (P=0.239). Body weight reduction in antidepressants after treatment was 1 point in 3 (27.3%) people, 2 points in 1 (9.1%) person, antidepressant 1 point in 1 (9.1%) person and 2 point in 1 (9.1%) person in those who did not take it. (P=0.535). Self-criticism in 3 (27.3%) people who took antidepressants after treatment was 1 point. , and in those who did not take antidepressants, 3 (27.3%) people scored 1 point, 1 (9.1%) people scored 2 points. (P=0.587).

Our research showed that 68% of the examined epilepsy patients have various degrees of depression. The results of my research prove once again that depressive episodes are more frequent in people suffering from epilepsy. Simultaneous treatment of these two disorders has a positive effect on the prognosis of the course of the disease.

RESULTS

1. Among the patients included in the study, 63 (40.4%) had - G40.0 – focal epilepsy; 93 (59.6%) people were diagnosed with G40.3 – generalized epilepsy. 17 (10.9%) patients had epilepsy in the form of simple partial seizures, and 80 (51.3%) patients had generalized tonic-clonic convulsive seizures, complex partial seizures were recorded in 46 (29.6%) patients, myoclonic seizures in 5 (3.2%), absences in 8 (5.1%) patients.

2. Our study proves that the comorbidity of epilepsy and depression is high in children with epilepsy aged 12-17 years and is 68%.

3. Our research showed that depression was detected in 106 of the examined patients. Of them, 83 patients (78%) had mild depression (8-13 points), 21 patients had moderate depression (20%) (14-18 points), and 2 patients had severe depression (2% (19-22 points).

4. Among patients diagnosed with G40.0 focal epilepsy in the interictal period, 33 (52.4%) patients had mild depression, 7 (11.1%) had moderate depression, and 1 (1.6%) had severe depression. With the diagnosis of G40.3 generalized epilepsy, 50 (53.8%) patients had mild depression, 14 (15.1%) patients had moderate depression, and 1 (1.1%) patient had severe depression. (Pu=0.459).

5. The positive effect of venlafaxine from the SNIUSI group, the drug of choice for the treatment of depression in children with epilepsy, was studied. ($p<0.001$)

PRACTICAL RECOMMENDATIONS

1. The study of depressive episodes in children with epilepsy is of great theoretical and practical importance. It is necessary to detect and evaluate depression early in children diagnosed with epilepsy.
2. The questionnaire and scale used in the present study can be recommended for the assessment of depression in children with epilepsy.
3. The treatment of depression detected and diagnosed in time has a positive effect on the prognosis of the course of the disease, and provides an opportunity to improve the condition of epileptic patients.
4. For this purpose, taking into account the positive effect of venlafaxine for the treatment of depression in children with epilepsy, the use of this drug in children can be recommended.

LIST OF SCIENTIFIC WORKS PRINTED TO THE DISSERTATION TOPIC

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LIST OF CONDITIONAL ABBREVIATIONS

ICD-10 – 10th revision of the International Classification of Diseases
EEG - electroencephalography
CT - computer tomography
MRI - magnetic resonance imaging
WHO - world health organization
DALY - Disability-adjusted life year

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