

# Evaluation of the Effectiveness of the Treatment of Patients with a Pharmacoresistent Form of Epilepsy, Otsenka Effektivnosti Lecheniya Bolnyx S Pharmacoresistenniy Epilepsiey, Assessment of the Effectiveness of Treatment for Patients with Refractor Epilepsy

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**Dolzabligi.** Protecting the health of the population, reducing morbidity rates, increasing the average life expectancy and the period of professional activity, increasing the level of social activity and quality of life is one of the social and political priorities of developed countries [2, 4, 5]. Epilepsy is distinguished by its temporary and permanent symptoms, as well as cognitive disorders, which hinder the social adaptation of patients. It has been found that patients with epilepsy have the lowest scores on the scales of general and mental health and vitality [1, 3]. Currently, the evaluation of indicators of social activity and quality of life are recognized as criteria for diagnosing patients [6]. Evaluating the effectiveness of treatment of patients with this pathology is one of the urgent issues.

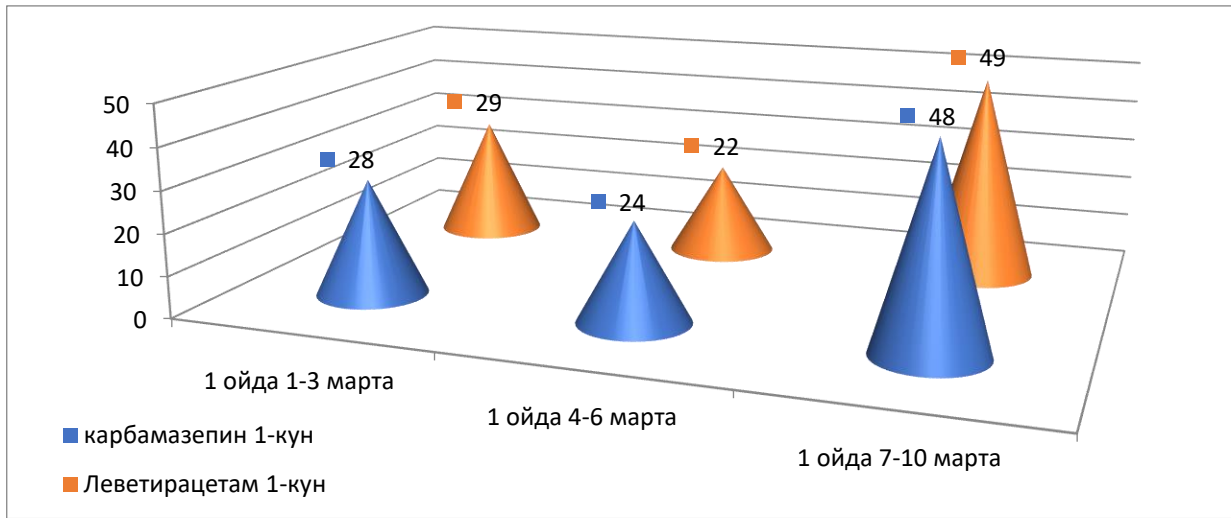
**The goals and objectives of the research.** Improving the efficiency of treatment and improving the quality of life of patients with epilepsy. Assessment of the general and mental health of patients with epilepsy, observation of changes in the frequency of seizures in relation to drugs, and dynamic assessment of quality of life criteria are carried out.

**Research materials and methods.** 64 patients who were treated at the Bukhara regional psychiatric dispensary during 2023-2024 were examined and quality of life based on the SF-36 questionnaire based on 8 criteria: general health status scale, physical activity scale, management activity scale depending on physical condition, management activity depending on emotional state scale, social functioning scale, pain scale, living activity scale and mental health scale were evaluated.

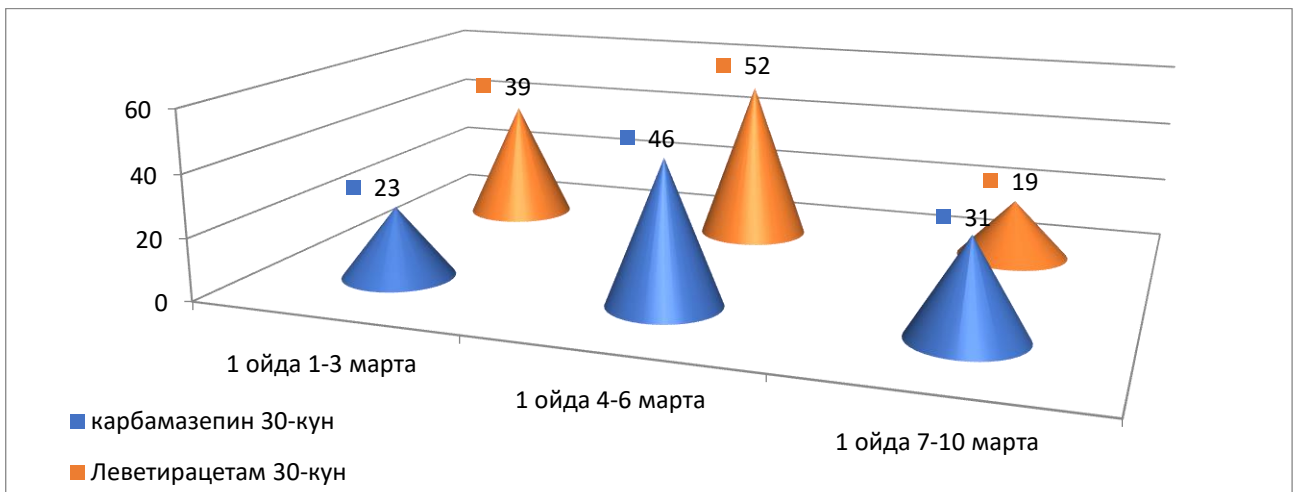
**The obtained results and their analysis.** Patients enrolled in our study were assessed for seizure monitoring on day 1 and day 30 of treatment. Patients in the main group received levetiracetam 100 mg twice daily as monotherapy, and patients in the control group received carbamazepine 200 mg twice daily. Levetiracetam (Keppra), a pyrrolidone derivative, is one of the new and promising antiepileptic drugs with a fundamentally different mechanism of action. Levetiracetam was synthesized on the basis of piracetam by introducing an ethyl group into the pyrrolidone family in the 90s of the last century. It has been used in the USA since 1999 and in Europe since 2000. Levetiracetam has been widely used in clinical practice since the beginning of the 21st century, and currently this drug is highly effective in the treatment of epileptic seizures in children and adults. The drug is used in monotherapy and as an additional drug, including in children, pregnant women and the elderly, and the drug has a good effect.

The effectiveness of drugs was assessed based on the frequency and duration of attacks, the degree of manifestation of seizure equivalents and social adaptation, as well as the impact on quality of life. These scores were slightly higher in patients receiving levetiracetam than in patients receiving carbamazepine. After 1 month of therapy, quality of life indicators improved in almost all studied groups. In patients receiving carbamazepine, there was a statistically insignificant ( $n > 0.05$ ) decrease in indicators of physical, social and emotional functioning, and indicators of general and psychological health did not change significantly. When treated with the latest generation of antiepileptic agents, levetiracetam, compared with the indicators obtained during treatment with the traditional agent carbamazepine, the highest scores were obtained for role and physical activity scores ( $n < 0.05$ ). On the first day, according to the Beck Depression Questionnaire, the mean score was  $14.3 \pm 7.4$ . After 1 month, the average value was  $11.9 \pm 5.1$ , after 6 months -  $9.0 \pm 3.6$  points, which showed the absence of

depression. Thus, neither before the start of treatment, nor during treatment with carbamazepine, patients did not have a depressive state, but a significant decrease in scores was found.



Analyzing the results on the 1st day and 30th day of the treatment of patients with the frequency of seizures, it was observed that the frequency of seizures was reduced by 2 times in patients receiving carbamazepine.



During treatment with carbamazepine and levetiracetam, changes in quality of life indicators on different scales of the SF-36 questionnaire were analyzed. Not only the antiepileptic, but also the normothymic and analgesic effects, as well as the levels of mental and physical activity, were analyzed when the SF-36 quality of life assessment test was performed. Patients who received carbamazepine showed improvements in the SF-36 questionnaire after 1 month on the general health status scale, the life activity scale, and the mental health scale. However, it was found that the physical status management activity scale, the emotional status management activity scale and the pain scale remained low. After 3 months, a significant improvement in quality of life indicators was found only in the pain scale and physical condition management activity scales. No changes were observed in the physical activity scale and social functioning scale of the SF-36 questionnaire (Table 1).

Table 1. 1 month after the start of treatment, indicators of quality of life according to different scales of the SF-36 questionnaire

Quality of life	Main group	Control group
	LEVETIRATsETAM	CARBAMAZEPIN
Physical condition management activity scale	77.2	61.8
Emotional state-dependent control activity scale	67.1	59.7

Pain scale	68.2*	59.4
General health status scale	55.5	52.8
Living Activity Scale	59.2	54.9
Social functioning scale	69.4	61.3
Physical activity scale	76.3	53.8
Mental Health Scale	55.7	60.3

After 6 months of therapy, quality of life scores generally improved in all groups. According to the results of the assessment and emotional functioning, general and psychological health, vitality indicators increased in all examined patients, but the indicators were 20-30% higher in the groups of patients receiving levetiracetam compared to patients receiving the conventional antiepileptic drug carbamazepine. When comparing the indicators between the groups assessed by the Beck Depression Questionnaire, according to the SF-36 questionnaire, no significant differences were observed (Table 2).

**Table 2. 6 months after the start of treatment, quality of life indicators according to the SF-36 questionnaire**

Quality of life	Main group	Control group
	LEVETIRACETAM	CARBAMAZEPIN
Physical condition management activity scale	89, 3*	61.8
Emotional state-dependent control activity scale	72.1*	59.7
Pain scale	83.5*	69.4
General health status scale	69.4*	50.8
Living Activity Scale	72.3*	51.9*
Social functioning scale	79.2*	61.5*
Physical activity scale	84.2*	63.8*
Mental Health Scale	68.1*	61.3

Note: \* -  $p < 0.05$

53.6% of patients prescribed carbamazepine for the treatment of epilepsy were diagnosed with hypertension, diabetes, cardiovascular diseases and obesity. During the follow-up period, there was no deterioration in the course of comorbidities during the treatment of epilepsy. According to the Beck Depression Questionnaire before treatment, the mean score was  $7.7 \pm 2.1$ , and after 1 month and 6 months, the score decreased to  $6.4 \pm 6.4$ ;  $5.2 \pm 2.3$ , respectively. All patients were free of depression before starting treatment with levetiracetam, and the results obtained showed an improvement in the emotional state of the patients. The Mood Control Activity Scale was validated by significant changes in SF-36 questionnaire data and Beck Depression Scale scores.

Analyzing the results of the SF-36 questionnaire, the average quality of life scores were rated by 65% of patients before the start of treatment and significantly improved by 78% after 6 months of treatment ( $n < 0.005$ ). Thus, during therapy with levetiracetam, a significant improvement was found in almost all components of the SF-36, which was confirmed by the data of the SF-36 and Beck depression questionnaires. Physical, social and emotional functioning of patients improved during treatment.

**Summary.** The effectiveness of anticonvulsant drugs can be assessed by reducing or completely eliminating the frequency of seizures, as well as dynamically increasing quality of life indicators.

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