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Differentiated Therapy of Cognitive Disorders in Schizophrenia Taking into Account the Dynamics of Clinical and Sociological Parameters

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Abstract: Cognitive functions are important indicators of the condition of patients with schizophrenia and determine the social prognosis of the disease, the degree of labor and social maladaptation of patients. The study of clinical and social factors and their significance in the assessment of cognitive disorders, especially cognitive disorders, is of great importance for determining modern methods of treatment of patients with schizophrenia. New directions of differentiated therapy and tactics have been developed for various manifestations of cognitive disorders, taking into account the dynamics of clinical and sociological parameters of the disease.

Keywords: schizophrenia, cognitive disorders, social maladaptation, negative symptoms, treatment tactics, neuroleptics.

Relevance. Cognitive deficits are now considered a central feature of schizophrenia. The results of studies of neurocognitive disorders in patients with endogenous psychoses are widely and convincingly presented in modern specialized literature. According to the results of numerous studies, cognitive dysfunction is one of the central links in the etiopathogenesis of schizophrenia, and therefore it can be isolated into a separate pathological cluster, by analogy with positive and negative symptoms [6, 8]. Cognitive disorders occur even in the prodromal stage of psychosis, remain relatively stable throughout the course of the disease and largely do not depend on its clinical manifestations and antipsychotic therapy [5, 7]. Violation of social functioning in schizophrenia concerns the adequacy of social perception, verbal communication, the ability to solve interpersonal problems and difficult life situations [2, 3, 5]. The social functioning of patients with schizophrenia is characterized by a significant decrease in socially useful activities, including work and study, and a somewhat less pronounced decrease in interpersonal communication [1, 4]. To improve the social functioning of patients, it is necessary to develop treatment tactics that will help improve the criteria for quality of life. Typical neuroleptics can eliminate productive and negative clinical symptoms of the disease, but they are sometimes not effective in improving cognitive impairment [9,10]. Psychiatrists are faced with the task of which drug can improve this basic deficiency of schizophrenia.

Currently, there are no officially registered drugs in the arsenal of psychiatrists that have a proven protective effect on cognitive function. However, the search in this direction is being conducted quite actively and at the moment there are already publications demonstrating the possibility of using atypical antipsychotics to correct cognitive deficits in patients with schizophrenia.

The purpose and objectives of the study. The aim of the study is differentiated therapy for various manifestations of cognitive disorders, taking into account the dynamics of clinical and sociological parameters. The objective is to study social functioning in patients with schizophrenia depending on clinical and sociological parameters and improve treatment methods.

Material and methods of research. The study was conducted on the basis of the Bukhara Neuropsychiatric dispensary. 92 patients with schizophrenia and schizophrenic spectrum disorders in a stable condition, who are on inpatient and outpatient treatment aged 30 to 50 years, with a disease duration of 10 years or more, were examined. The age of onset of the disease is 25,7±5,5 years, the duration of the disease at the time of examination was 12,5± 4,5 years. The number of seizures suffered is more than 5, the frequency of exacerbations is once every two years or less (81,5% of cases). 80 patients (86,9%) had a disability of the second group due to mental illness. To achieve this goal, the following methods were used: clinical and psychopathological, including diagnostic criteria for mental disorders in accordance with ICD-10 and a scale for assessing positive and negative symptoms of schizophrenia according to panss, clinical and social (scale of personal and social functioning of PSP), which includes a patient's card with a passport part and basic social characteristics.

Deterioration of social functioning is considered not just a concomitant symptom of schizophrenia, but one of its central characteristics. Violation of social functioning is often included among the criteria for the diagnosis of schizophrenia. Moreover, if measures aimed at improving social functioning are effective, they can have a positive impact on the long-term outcome of the disease. Traditional antipsychotics helped many patients to leave the hospital and live among people, however, in general, they had only a slight positive effect on functional disorders caused by the schizophrenic process. However, the hope remains that the latest atypical antipsychotics, in particular, their injectable forms of prolonged action, will have a more significant effect on functional disorders. For these reasons, the functioning of the patient in society is increasingly recognized as an important indicator in the research of new forms of pharmacological treatment of schizophrenia. For our work, we chose the PSP scale – the Scale of socially-oriented and social functioning.

Results and their discussions. Recent studies have demonstrated differences in the assessment of positive, negative and cognitive impairments in patients with schizophrenia, since none of the cognitive functions characterizes this pathology. Some studies claim that patients with schizophrenia have a more pronounced neurocognitive deficit. According to one point of view, cognitive impairment exists regardless of the clinical manifestations of schizophrenia. There is more and more evidence that the reduction of negative and positive symptoms is not accompanied by an equivalent improvement in cognitive functioning. Table 1 shows the socio-demographic distribution of patients at the beginning of the study.

Table 1. Socio-demographic characteristics of patients at the beginning of the study Value Parameters

Parameters	Amount
Number of patients	92
Percentage of women (%)	50
Age, years	30,5±4,5
Persons with disabilities due to a mental disorder, people (%)	80 (86,9)
Working at an ordinary enterprise, people (%)	10 (10,9)
Living in a family, people (%)	100
Duration of illness, years	10,1±2,7

The active course of the disease is characterized by disorganization of associative processes, which is based on violations of stimuli and connectivity of individual functional areas of the brain. Therefore, negative, positive and cognitive disorders in schizophrenia are heterogeneous in nature and are associated with certain stages of the disease. Table 2 shows the distribution of patients by diagnostic categories in accordance with the criteria of ICD-10.

Table 2. Distribution of patients by diagnostic categories

Diagnosis (ICD-10), people (%)	Abs. (%)
Residual schizophrenia	18 (19,6)
Post-Schizophrenic depression	14 (15,2)
Episodic paranoid schizophrenia	15 (16,3)
Continuous paranoid schizophrenia	17 (18,5)
Continuous paranoid schizophrenia	13 (14,1)
Schizoaffective disorder	15 (16,3)

Cognitive dysfunction is most responsible for disorders of the social functioning of mental patients. The search for effective methods of correcting these disorders is the most important task of psychiatric care.

Table 3. Dynamics of symptoms of the PANSS in the course of treatment

Indicator for PANSS	Main group (n=62)		Control group (n=30)	
	Before treatment M+m, points	After treatment M+m, points	Before treatment M+m, points	After treatment M+m, points
Positive symptoms	27,3±5,5	12,4±2,5*	29,4±5,8	18,3±2,3
Negative symptoms	28,7±5,3	16,8±5,4*	26,9±4,6	19,2±4,5*
General psychopathological symptoms	55,8±7,4	25,3±4,2*	56,3±6,7	27,6±5,7*
Total score for PANSS	94,6±11,5	56,1±11,3*	95,3±14,2	58,5±11,4*

Before treatment in the main group, the average data on the scales were as follows: panss total score - 94.2±12.8, panss positive subscale - 27.3±5.5, panss negative subscale - 26.7±5.3, panss subscale of general psychopathology - 55.8±7.4, NSA total score - 64.6±12.3, slate-s - 5.8±1.5, gaf - 34.1±12.1, PSP - 42.9±12.4, Bach - 13.5±12.6 Correlation and factor analyses have shown the relationship of the scale of cognitive disorders with negative symptoms and some items of the subscale of general psychopathological syndromes of the PANSS scale.

Table 4. Dynamics of indicators of psychopathological symptoms and social functioning

Indicators	Before the intervention	After the intervention
P sum	141±3,8	11,1±4,1
N sum	20,3±3,9	15,7±5,3
G sum	38,3±4,9	29,8±6,6
PANSS sum	72,7±8,5	57,1±13,7
PSP	55,4±9,8	68,5±10,2

Notes: P sum is the sum of points on the subscale of productive symptoms of PANSS, N sum is the sum of points on the subscale of negative symptoms of PANSS, G sum is the sum of points on the subscale of general psychopathological symptoms of PANSS, PANSS sum is the sum of points on the PANSS scale.

The average values of correlations of the total score on the PANSS scale with the indicators of the BACS scales reflecting the total were found. symptoms of schizophrenia. All patients had cognitive disorders that affected working memory, attention, information processing speed, verbal fluency, short-term and long-term visual-motor memory. In the course of this study, it was revealed that the severity of negative symptoms significantly affects the level of social functioning by improving cognitive functions. The predominant influence of negative and positive disorders measured by the PANSS scale on social functioning in clinically stable patients with schizophrenia is shown. With BACS scores almost at (89.1%, 82 people) violations of cognitive functions were found. Of these, cognitive impairment was assessed as mild in 13.1% (12 patients), moderate in 20.6% (19 patients), severe in 55.4% (51 patients). Executive functions and problem-solving behavior of patients were

examined using the London Tower subtest. 28 patients (30.4%) performed this task at the level of a healthy population. 35 (38.1%) patients demonstrated satisfactory motor skills. A significant decrease in indicators compared to the norm was revealed in the tasks "speech fluency" and "encryption", which are aimed at assessing the safety of the semantic system and the speed of information processing. 26 (28.3%) and 14 (15.2%) patients successfully coped with the subtests "auditory-speech memory" and "sequence of numbers", respectively, which indicates violations of the functions of episodic and working memory.

The cognitive status of patients and its impact on social functioning should be constantly in the focus of attention during therapy, since cognitive impairment affects family life, work, and learning ability. Conventional antipsychotic drugs are of little use in cognitive areas and often lead to extrapyramidal side effects requiring anticholinergic treatment. The use of atypical antipsychotic drugs, in particular Olzap (Olanzapine) at 20 mg per day for the treatment of schizophrenia led to an improvement in cognitive functions. Atypical neuroleptics blocking the occurrence of psychopathological disorders regulate and control the state of the psyche. To a greater extent, not only the symptoms of the disease play a big role in the development of cognitive impairment, but also the approach and treatment of the disease is of great importance.

From the presented data, it can be seen that the examined patients had the most pronounced disorders in the areas of voluntary regulation of activity, neurodynamics and verbal thinking, which corresponds to the functions of the frontal lobes and deep structures of the brain, before the start of therapy with olzap. Less pronounced disorders were noted in the areas of visual memory, praxis and nonverbal thinking, which corresponds to the functions of the parietal and occipital lobes. Against the background of olzap therapy, by the end of treatment, there was a statistically significant improvement in the indicators of voluntary regulation of activity and neurodynamics. There was also a statistically significant improvement in the indicators of praxis, visual memory and nonverbal thinking.

Patients treated with second-generation antipsychotics showed better scores on these indicators compared to patients taking domestic antipsychotics. According to the data obtained, therapy with atypical antipsychotics is preferable to maintain the cognitive functioning of patients.

Cognitive functioning implies a reaction in response to a stimulus, while tasks that require cognitive tension include attention functions and cognitive abilities in general in response to the tasks presented. These results led to frustration, low self-esteem, violation of coping strategies in patients.

Conclusion. Psychometric tools that separately measure cognitive abilities will help as an indicator for the treatment of patients and leads to improved social functioning. Prescribing new atypical neuroleptics for cognitive impairment suggests that with modified use, pharmacological and psychological interventions lead to improved psychomotor speed, fluency of speech, verbal learning and memory. Practice has shown that the PSP scale is an adequate tool for quickly measuring social functioning and the ability to self-serve patients with mental disorders in schizophrenia. Differentiated therapy various manifestations of cognitive disorders in schizophrenia should be the main target, and taking into account clinical and sociological parameters in dynamics is the key to successful treatment. Methods for assessing cognitive disorders allow us to track the dynamics of disorders of social functioning and the effectiveness of psychosocial rehabilitation work with patients.

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