

## INTEGRATED APPROACH TO CORRECTING NEUROCOGNITIVE DEFECTS IN SCHIZOPHRENIA

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**Abstract.** According to many experts, 94% of patients with schizophrenia identify neurocognitive defects to some extent. The medical and social significance of the problem is that individuals of working age have a large share among patients with schizophrenia. Cognitive impairment occurs in remission. Cognitive deficits are an important independent or even leading disease that largely determines the social and therapeutic prognosis of the disease, often leading to the labor and social adaptation of patients.

**Keywords:** schizophrenia, correction, neurocognitive insufficiency, social disorder.

**Introduction.** The results of many studies show that cognitive dysfunction is fundamental in schizophrenia and can be classified into a separate pathology cluster along with positive and negative symptoms [1-3].

Cognitive indicators are an important indicator of functional status in patients with schizophrenia, regardless of their clinical condition. At the same time, Cognitive Disorders at a much higher level than positive symptoms determine a decrease in the level of social adaptation of patients, and in fact are the leading clinical parameters predicting their disability, since they reflect the Daily movements, social obligations, professional obligations and level of independence in society of patients with schizophrenia [4-9]. Until recently, cognitive anomalies played a secondary role in understanding the nature of the disease, in treatment and rehabilitation issues [10-13]. Currently, it has been proven that postponing adequate treatment for more than a year after the first psychotic manifestations leads to a decrease in the socio-labor activity and quality of life of patients, an increase in the burden of the disease, an increase in hospitalization and, as a result, an increase in the cost of psychiatric care [14-19]. At the same time, the fact that complex therapy has a neuroprotective effect is assessed by morphological changes, especially in the first 5 years of the disease, determined by the dynamics of neurocognitive deficiency symptoms and the latest neuroimaging methods found in most patients with schizophrenia. Disorders of cognitive function are associated with social activity, with a high probability of determining the social results of the disease in the initial and distant stages [20-26].

Many studies of the first psychotic episodes of schizophrenia and schizophrenia spectrum disorders have shown improvements in clinical and functional outcomes using an integrative approach to managing this contingent of patients. Cognitive deficits do not respond well to pharmacological treatment [27-34]. The constant search for ways to restore cognitive functions leads us to actively study not only drugs, but also other important psychosocial pathways. To date,

there is no doubt that the most effective approach is comprehensive psychopharmacological and psychosocial support. Psychosocial methods have established themselves as a necessary component of the rehabilitation process and continue to develop rapidly. One of the promising areas of treatment for cognitive deficit is the inclusion of neurocognitive training in rehabilitation programs. These lessons are a very effective, inexpensive, but little-studied method [34-39]. The purpose of the study. A study of the effect of neurocognitive training on higher cortical functions in patients with schizophrenia, as well as an assessment of their effectiveness in schizophrenia complex therapy.

**Research materials and methods.** For the study, groups of patients were formed who were diagnosed with "paranoid schizophrenia", who were being treated in the rehabilitation department and the PND day Hospital No. 1. All patients received adequate psychopharmacotherapy with second-generation antipsychotics. Patients in the core group (97 people) additionally participated in cognitive impairment training. Patients who entered the comparison group (50 patients) received only psychopharmacotherapy. Criteria for joining research:

- 1) the presence of the disease schizophrenia paranoid form at the stage of remission, the total score in the "negative symptoms" section of the PANSS 14-29 scale.
- 2) the age of patients is 18-55 years.
- 3) the duration of schizophrenia is less than 30 years.

Socio-demographic characteristics of patients.

The total group of patients undergoing neurocognitive training was 97 people, of whom 61 were women (62.88%) and 36 were men (37.12%). The comparison group is compared to Group 1 by gender, age, and level of education, and has no statistical differences ( $p > 0.05$ ).

**Methods.** Clinical scales (PANSS) and experimental psychological techniques have been used to assess cognitive processes to assess outcomes. The following methods were used: memorizing 10 words to assess memory (Luria A. R. test, 1969); Benton test (Benton Visual Retention Test, 1960), Stroop test – Stroop Color interference Test (J. R. Stroop, 1935), cipher test - (Wechsler D., 1955). For attention assessment: visual and hand coordination test (parts A and B) - A & B Trail Making Test (Reitan R. M., Wolfson D., 1993). To evaluate performance functions-maze test (Wechsler D., 1955).

The initial examination of patients was carried out during the first application, before the start of neurocognitive training.

**Results and discussions.** Repeated studies were conducted a month after the end of the training programs and the final survey a year later. In the comparison group, investigations were carried out at the same frequency.

The main goals of training cognitive deficit:

- 1) strengthening the arbitrary regulation of memory and attention by teaching the use of special tools;
- 2) strengthening the communicative orientation and cognitive differentiation of thinking.

Intensive training is carried out during the transfer of patients at least twice a week in the Rehabilitation Department.

The duration of each lesson does not exceed 60 Minutes. The total number of classes in the intensive training phase is 10-12. With frequency 2 times a week. Groups of 6-8 patients. The

support phase focuses on maintaining and strengthening cognitive skills developed in an intensive phase, as well as strengthening past material, and then introducing patients into social programs.

Initially, groups were formed according to exclusion criteria, later to increase the effectiveness of classes, patients were divided into groups taking into account the level of neurocognitive deficiency (patients with mild to moderate levels of cognitive deficit underwent neurocognitive training).

At the time of the examination, patients were in a state of remission or at the stage of its formation. The total score for PANSS is 47,2 ( $\pm$ CO=8.8) points; 3,4 ( $\pm$ CO=2.9) points on the Calgary Depression Scale. According to the presence of residual psychopathological symptoms, patients were distributed as follows: 1) patients with complete or almost complete remission (total score on PANSS 30-45): average severity of disorders 38,5 $\pm$ 3,3 (42 people, 40,4%); 2) patients with partial remission (46-60 points on PANSS): average 50,7 $\pm$ 3,8; (51 people, 49,0%); 3) patients with panss disease severity are above 60 points (61-66): average value is 63,6 $\pm$ 2,3 (11 people, 10,6%).

The majority of patients (87,5%) had higher education: 53 people (51%) received higher education, including 2 people (1,9%) with a degree; unfinished higher education – 28 people (26,9%), secondary special-10 people (9,6%); Middle – 7 people (5,8%); unfinished average-6 people (8,6%).

Examination of patients using the Bacs scale revealed the following characteristics: "motor skills", "character coding" and "speech fluency" tests performed statistically worse than the average, but the "tower of London" test performed much better than the norm. In addition, young men performed tasks on auditory memory and fluency of speech statistically worse.

When separated by gender, the advantages of women of the second group over the first in the "speech fluency" test were found ( $p=0,05$ ) and compared to the third in the "encryption" Test ( $p=0,01$ ); differences in men were not statistically significant. In addition, statistically significant differences were found between groups I and III: the "encryption" test performed better tasks than Group I Group III patients, excluding gender ( $p=0,004$ ), as well as men ( $p=0,001$ ) and women. In the "tower of London" test, group I men ( $p=0,05$ ) were better than Group III men.

The analysis of the performance of neurocognitive tests by patients of different groups, depending on the diagnosis, is presented in the table. 5. The relative number of patients with severe impairment of cognitive function (moderate + severe) was the highest in the group of patients with schizophrenia (except for motor skills and the tower of London test, which are the most deviant in schizotypal disorder).

At the same time, with the exception of a reliable difference in the performance of auditory-speech memory tasks in patients with schizophrenia and schizoaffective disorder ( $p<0,05$ ), no difference was statistically significant. In the group of patients, the least number of violations were recorded with schizoaffective disorder.

**Discussion.** As a result of training cognitive processes in patients of the first group (combining training in pharmacotherapy and cognitive deficit), indicators were obtained to increase the pace of activity, improve concentration, increase the adequacy of thinking and the volume of long-term memory; trends were found to increase the volume of operative short-term memory. Thus, according to the survey, the growth of all indicators (up to 36.6%), the maximum improvement corresponds to visual memory and minimal attention functions. Improving overall

clinical picture, reducing negative symptoms. Positive dynamics is also observed in the comparison group, which receives 2nd generation antipsychotics, but not so significant. It should be noted that improvements in neurocognitive profile indicators appear immediately after the curriculum cycle and remain stable throughout the year. In the comparison group, the decrease in neurocognitive insufficiency is significantly slower, changes are less pronounced, but with a progressive character.

It is important to note that patients with schizophrenia and partial schizotypal disorder have more impaired cognitive function, while patients with schizoaffective disorder have relatively less "impaired". However, given that there are no significant diagnostic differences in the groups of patients examined, in this case, the Intergroup differences found in the degree of impairment of basic cognition most likely reflect the younger side of the identified disorders, and not related to the diagnostic characteristics of the selected groups.

In addition, given the large correlation between the severity of psychopathological disorders and the results of cognitive examination in patients of the third group, it can be assumed that the independent (not associated with the presence of psychopathological symptoms) nature of their deficiency is even lower.

Thus, the findings provide the basis for confirming the hypothesis that the severity of neurocognitive disorders depends on the debut age of the disease: late manifestations of disorders at the psychotic level are associated with lighter neurocognitive insufficiency, which may reflect less psychobiological weakness in relation to the development of psychosis.

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