

подростков с депрессивными расстройствами //Сборники конференций НИЦ Социосфера. – 2013. – №. 53. – С. 18-21.

9. Ирмухамедов Т. Б., Абдуллаева В. К., Хамраев М. М. Психопатологическая дифференциация тревожно-фобических расстройств невротического уровня //Общая психопатология: традиции и перспективы [электронный. – 2017. – С. 134.

10. Рогов А. В. Когнитивные расстройства у больных с параноидной шизофренией, коморбидной с вирусными гепатитами //Антология российской психотерапии и психологии. – 2019. – С. 158-158.

11. Matete A. Depressive symptoms in schizophrenia // The Medicine Journal. - 2001. - P. 2.

Entered 09.02.2020

UDC 616.895.87

**VIOLATIONS OF THE PLANNING STRATEGY IN PATIENTS WITH PARANOID SCHIZOPHRENIA WITH RELATED VIRAL HEPATITIS**

**Rogov A.V. Abdullaeva V.K.**

Tashkent Pediatric Medical Institute,  
100125 Uzbekistan Tashkent, Bog'isamol 23

**Resume**

*The purpose of the study is to study the effects of chronic viral hepatitis on the skills that determine problem-solving behavior in patients with paranoid schizophrenia. Materials and methods of the study the experimental part included: the assessment of the psychopathological status was carried out using the Positive and Negative Syndrome Scale (PANSS) scale. The problem-solving function of the neurocognitive pool was estimated as follows: solving the "Pyramid of Hanoi" problem. It was found that patients with paranoid schizophrenia with concomitant chronic viral hepatitis, showed significantly lower productivity in the performance of the problem compared with patients with paranoid schizophrenia without concomitant somatic pathology.*

**Keywords:** neurocognitive deficiency, paranoid schizophrenia, problem-solving behavior

**НАРУШЕНИЯ СТРАТЕГИИ ПЛАНИРОВАНИЯ У ПАЦИЕНТОВ С ПАРАНОИДНОЙ ШИЗОФРЕНИЕЙ С СОПУТСТВУЮЩИМИ ВИРУСНЫМИ ГЕПАТИТАМИ**

**Рогов А.В. Абдуллаева В.К.**

Ташкентский педиатрический медицинский институт

**Резюме**

*Целью исследования является изучение влияния хронического вирусного гепатита на навыки, которые определяют поведение при решении проблем у пациентов с параноидальной шизофренией. Материалы и методы исследования экспериментальной части включали: оценка психопатологического статуса проводилась с использованием шкалы позитивного и негативного синдрома (PANSS). Функция решения нейрокогнитивного пула оценивалась следующим образом: решение проблемы «Ханойская пирамида». Было установлено, что пациенты с параноидальной шизофренией с сопутствующим хроническим вирусным гепатитом, показали значительно более низкую производительность при выполнении задачи по сравнению с пациентами с параноидальной шизофренией без сопутствующей соматической патологии.*

**Ключевые слова:** нейрокогнитивный дефицит, параноидная шизофрения, проблемно-решающее поведение.

ВИРУСЛИ ГЕПАТИТЛАР БИЛАН ХАМРОҚ ПАРАНОИД ШИЗОФРЕНИЯДА  
БЕМОРЛАРДА РЕЖАЛАШ СТРАТЕГИЯСИ

Рогов А.В., Абдуллаева В.К.

Тошкент педиатрия тиббиёт институти

**Резюме**

*Параноид шизофренияда беморнинг хулқ-атворида вирусли гепатитнинг аҳамиятини аниқлаш. Экспериментал қисми қўйидагидан иборат: PANSS шкала ёрдамида психопатологик статуснинг позитив ва негатив синдромларни аниқлаш. Нейрокогнитив пулли баҳолаш учун “Ханой пирамида” ёрдамида фойдаланган.*

**Калит сўзлар:** *нейрокогнитив этишмовчилиги, параноид шизофрения, муаммоларни хал қилувчи хулқ - атвор*

**Relevance**

The scientific community of psychiatrists, neurophysiologists and medical psychologists is increasingly examining the problem of the schizophrenic process from the point of view of the concept of neurocognitive disorders [1,2,3]. Disorders of the components of the cognitive pool probably underlie phenomena such as impaired social functioning, decreased quality of life, impaired emotional intelligence, and compliance problems in patients with schizophrenia. In the light of the new data obtained, it becomes obvious that the schizophrenic process is accompanied by disorders that determine the peculiar, original cognitive profile in this group of patients (Petrova, N.N., Dorofeykova, M.V., et al. 2016). In turn, the variety of variants of cognitive dysfunctions and their impact on various aspects of the schizophrenic process leaves a large number of questions open and provides rich ground for scientific research in this area. An important component of the cognitive pool, which substantially determines its profile, is the function of problem-solving behavior[4,5]. Cognitive reasoning often includes the adoption of hierarchically organized decisions of various orders [6,7], as a result of the planning process, the accumulation and processing of error information, determines the future actions or inaction of a person. The uniqueness of the choice of strategy and tactics in solving the problem is one of the main integration functions of the human psyche, and refers to the priority stages in choosing a model of social functioning[8]. Undoubtedly, the choice problem is affected by a large number of variables in the form of various external factors. However, at the same time, the regular influence of chronic somatic disorders on cognitive functions is traced,

including the choice strategy within the framework of a problem-solving concept [9]. Many authors have shown that chronically occurring concomitant infectious diseases adversely affect the course of schizophrenia, exposing the familiar psychopathological picture to a peculiar pathomorphosis. Chronic viral hepatitis is one of the most common groups among this patient population. Studies conducted by many authors have shown that markers of HBV infection were found in 23.0 - 81.3% of patients (Eveillardetal., 1999; Asensioetal, 2000). Among them, HBsAg was determined in 2.0-18.1% of cases (Changetal, 1993; Eveillardetal, 1999). Anti-HCV was found in 0.42–20.3% of patients in psychiatric clinics (Cividiniet al., 1997; Meyer, 2003).

It should be noted that HCV has a pronounced neuroticism, characterized by morph functional disorders, clinically manifested by various cognitive disorders, the severity of which does not depend on the severity of liver damage, the level of viral load and the presence of autoimmune disorders. As a result of the study, it was found that in chronic HCV infection, a brain lesion occurs at the tissue level, the detected changes are a morphological substrate of the clinical manifestations of viral hepatitis [10]. A significant factor for schizophrenia patients with chronic viral hepatitis is also the hepatotoxic effect of many psychotropic drugs [11].

All of the above indicates that in the dynamics of the mutual effects on the brain of such disorders as paranoid schizophrenia and chronic viral hepatitis, lead to impaired cognitive functioning. The maladaptive plasticity of the neural network leads to a number of pathological phenomena that violate the usual cognitive profile.

The literature reveals a fairly large information layer devoted to the problem of cognitive impairment in patients with schizophrenia, while the effects of chronic diseases, namely viral hepatitis, on problem-solving behavior in patients with paranoid schizophrenia are not covered.

**The purpose of the study** was to study the effect of chronic viral hepatitis on skills that determine problem-solving behavior in patients with paranoid schizophrenia.

#### Material and methods

The study was conducted at the Tashkent City Clinical Psychiatric Hospital. We examined 64 patients with a verified diagnosis in accordance with ICD-10 of paranoid schizophrenia (F-20.0). The study group consisted of 43 patients. The selection criterion was the presence of a concomitant diagnosis of chronic viral hepatitis C (CGC) and chronic hepatitis B (CGB); respondents with other chronic diseases, namely cardiovascular disease, diabetes mellitus, thyroid disease, addictive disorders, were excluded from the study group associated with the use of psychoactive substances, etc. The comparison group included 21 patients with a diagnosis of paranoid schizophrenia without acute or chronic somatic pathology. To achieve this goal, experimental psychological, clinical and statistical research methods were used. Psychometric evaluation was performed using the Positive and Negative Syndrome Scale (PANSS) scale. The modern version of the scale consists of 33 features, evaluated on the basis of a formal semi-structured or fully structured clinical interview and other sources of information. The severity of the symptom is evaluated by a 7-point system. For each symptom and gradation of its severity, a thorough operational definition and precise instructions for its identification are given.

The problem-solving function of the neurocognitive pool was evaluated as follows: the solution of the Hanoi pyramid with the given parameters is three rods, one of them contains a pyramid of  $n$  disks. The lower disk is the largest, the disk has a smaller radius, and so on, on top pyramids is the smallest disk. It is required to transfer the entire pyramid to another rod,

observing two rules: 1) you can transfer one top disk from any rod to any other at a time; 2) the disk can only be placed on a disk of a larger radius.

Suggested task: consists of three rods and four rings with a minimum number of moves according to the formula  $2n - 1$ , where  $n$  is the number of disks. The second task of evaluating problem-solving behavior was the Tower of London Test, developed by T. Shallice [Shallice, 1982], which is used in applied clinical neuropsychology to evaluate executive functioning specifically to identify planning deficits. Tests of the test material: consists of 10 tasks in a structured and unified form for all respondents. The subject is shown two sets of stimuli consisting of each of three colored chips. Chipsets are arranged in such a way that they can easily be represented as colored chips stacked in a column. The suggested algorithm of the respondent's actions was that the subject should make sure that the set of chips in the lower part of the proposed table completely copied the arrangement of the chips in the upper part of the proposed table. The chips need to be moved one at a time, simply by clicking on the selected chip first, and then on the position where the subject suggests putting it. The time spent by the subject in changing the position of the balls and the number of moves he makes for this is a characteristic of the subject's ability to plan. The time taken to determine the tactics for completing the task, the time spent directly on solving the task, the number of moves, the number of errors was taken into account, the ability of respondents was evaluated taking into account the experience of the mistakes made to apply this information for a more rational solution of the problem

#### Results and discussion

To study the influence of the characteristics of the psychopathological profile on the decision-making strategy, we made psychometric measurements using the PANSS scale. The study design corresponded to the classical form of this test described above. In the study group, the composite PANSS score was on average  $\mu -4.82 \pm 4.05$ , which corresponds to the prevalence of negative symptoms (Fig. 1)

ratio of positive and negative symptoms

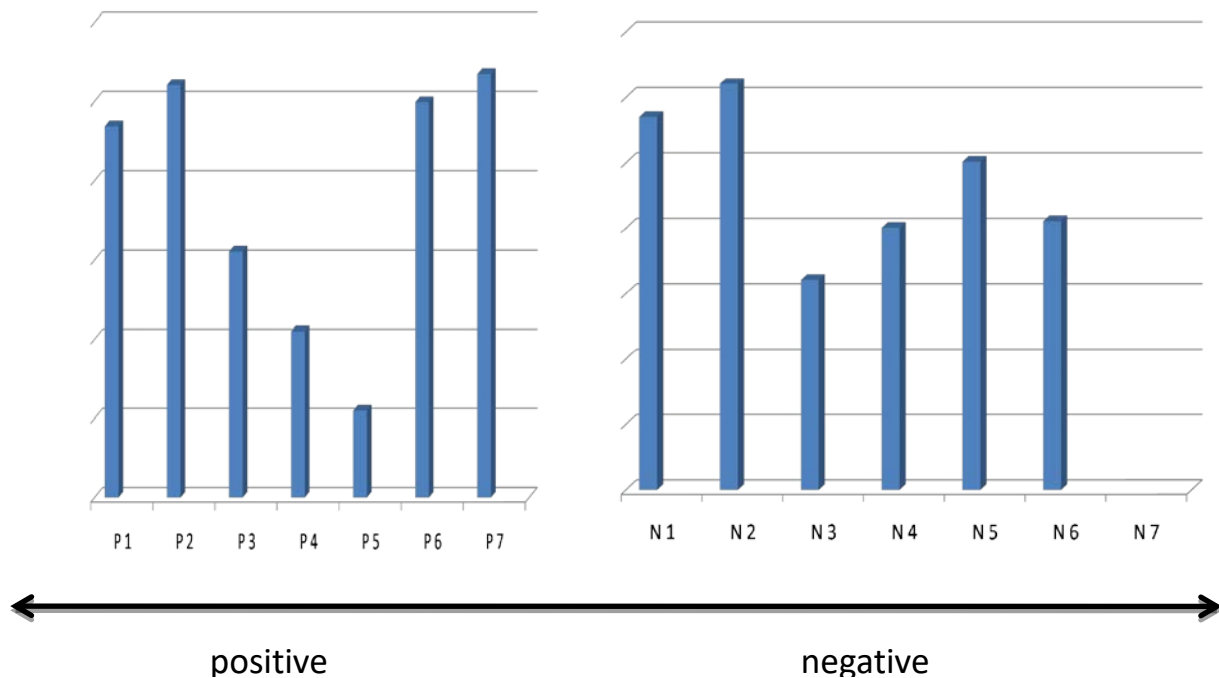


Figure 1. Features of the psychopathological profile of the examined patients

The average value of the composite score in the comparison group was  $+ 2.11 \pm 3.41$ , which corresponded to the prevalence of positive symptoms. Such images in the study group were dominated by negative symptoms, while the comparison group was mostly characterized by psycho-productive symptoms.

The study of problem-solving behavior took place in two stages. The first studied the strategy and tactics of patient selection in solving the Hanoi Pyramid, the second stage, which was necessary to determine the planning deficit, was to solve the Tower of London Test

The results of the study showed that there is a significant difference between the two groups in solving the Hanoi Pyramid. When explaining the conditions of the problem, patients with paranoid schizophrenia without concomitant pathology in most cases did not experience problems with mastering the rules for solving the problem, only in two cases a second explanation was necessary, whereas in the group with concomitant viral hepatitis, an explanation was needed already in 5 (11.62 %) patients. At the same time, two after several repetitions refused to participate in the

experiment. The time for evaluating the task, making the decision and starting the solution of the problem in patients with paranoid schizophrenia with concomitant viral hepatitis was on average slightly more than  $15 \pm 0.7$  sec. Than in the comparison group  $8 \pm 0.4$  sec. it was spent on a deeper analysis and selection of the optimal strategy for solving the problem, since the subsequent solution was not very accurate. Thus, it can be assumed that patients with concomitant viral hepatitis needed on average more time to build a strategy and develop tactics to begin to solve the problem. On average, more time was spent on the task in the main group than in the comparison group. In the main group, the average time spent on the task was an average of  $11 \pm 1.1$  minutes; in the comparison group, an average of  $8 \pm 0.9$  minutes was spent on a similar task. To accomplish the task, the most significant were indicators of the number of moves and errors, an indicator that determines the quality of the chosen strategy when solving the task. So, in patients of the main group an average of  $51 \pm 1.7$  moves, in the comparison group - the average number was  $39 \pm 1.5$  moves. This is in favor of a qualitative reduction in the analysis of

the problem and, as a consequence, inadequate strategic planning in problem-solving behavior. Errors during the assignment, the discrepancy of the course with the test rules in the main group was on average  $11 \pm 4$ , and in the comparison group  $9 \pm 5$ . The ability of respondents to correctly solve tasks based on the experience of mistakes made significantly differed in different groups. In the main group of 19 (44.1%) patients, when making mistakes, they started the task from the beginning and made similar mistakes three or more times, 6 (13.9%) patients after several attempts and errors refused to continue the test, 3 (6.9%) after repeated errors showed aggression to the testing material. In the study group, 15 (34.8%) patients did not repeat them further in the course of testing, making strategic mistakes, taking into account previous experience. In the comparison group, only 3 (14.28%) refused to perform the test after several errors, 12 (57.1%) patients took into account previous errors and did not make them, 6 (28.5%) made similar errors several times. From the above it follows that patients with paranoid schizophrenia with concomitant chronic viral hepatitis perceive the new information received much worse, it is much more difficult for them to analyze their mistakes and use the experience gained in solving the problem, perhaps this indirectly indicates a deeper disintegration of cognitive functions caused by concomitant pathologies.

Test completion The Power of London Test passed across all respondents through a standard time interval. At this stage of the experiment, 3 patients from the main group (patients with aggressive behavior revealed as a result of the previous test) and 2 patients from the comparison group refused to go through it further. Thus, 41 and 19 patients, respectively, proceeded to the second stage of testing in the main group and the comparison group. When explaining the conditions for the second stage of testing, a significant part of the respondents of both the main group and the comparison group experienced some problems with understanding the new task conditions, 21 (51.5%) patients of the main group and 9 (47.3%) patients of the comparative group. From the first try to accept new information, 11 (27.5%) of the main group and 5 (26.3%) comparison groups formally

agreed with the new conditions for completing the task, but when the test was carried out directly, it was carried out as prescribed by the first test. The results obtained do not contradict the literature data and are to some extent explained by a violation of the "flexibility of thinking" in patients with paranoid schizophrenia. When performing the task, the patients of the main group took an average of  $25.4 \pm 9.1$  minutes to complete all the tasks presented, the comparison group to achieve the final result took an average of  $21.2 \pm 8.2$  minutes. The decrease in the level of attention was clearly visible in both groups, since the first half of the tasks in the study group on average for solving five tasks took an average of  $7.2 \pm 4.1$  minutes; in the comparison group this indicator was close and amounted to  $6.3 \pm 4.0$  minutes. Groups solved the second half of the task with a significant increase in the time spent, the indicators were, in the study group, the average indicator was 18.2 minutes, and similar indicators in the comparison group 14.9 minutes. The quality of solving problems, characterized by the number of repeated errors, fell significantly in both groups. The average number of unjustified errors in the study group was  $102 \pm 11$ , and in the comparison group  $87 \pm 9$ . The positive aspect was that patients who started the second stage of the psychological experiment in both groups completed it without side effects. The differences embedded in the different stages of the study with apparent identity allowed us to establish that patients with paranoid schizophrenia have significant impairments in the field of flexibility of thinking, and in both cases it was difficult for patients of both groups to switch from one task condition to another, thus the indicators of our experiment do not contradict the data of other researchers. During the experiment, we were able to find out that in patients with paranoid schizophrenia with concomitant chronic viral hepatitis, cognitive impairment is significantly more pronounced. To a greater extent, this group of patients shows a decrease in indicators of problem-solving behavior, which in turn is one of the reasons for more difficult social adaptation of this group of patients. In the group of patients with paranoid schizophrenia with concomitant viral hepatitis, there is a clear violation of the sequence

of decision-making, which leads to disorganization of the adopted strategic line for solving the problem.

### Conclusions

Thus, we found that patients with paranoid schizophrenia with concomitant chronic viral hepatitis showed significantly lower productivity in fulfilling the problem compared with patients

with paranoid schizophrenia without concomitant somatic pathology. Chronic viral hepatitis to a large extent affects the problem-solving behavior in patients with paranoid schizophrenia. The presence of concomitant chronic viral hepatitis in patients with paranoid schizophrenia significantly leads to a violation of the rational strategy in solving the problem.

### LIST OF REFERENCES:

9. Абдуллаева В. К., Нурходжаев С. Н. Особенности социальной адаптации у пациентов с коморбидными аффективными и личностными расстройствами // *Общая психопатология: традиции и перспективы [электронный]* // 2017 год с.25.

10. Алексеев А.А., Рупчев Г.Е., Катенко С.В. Нарушения планирования при шизофрении. Психологические исследования, 2012, 5(23), 9. <http://psystudy.ru.0421200116/0033>.

11. Дорофейкова М. В. нарушения когнитивных функций при шизофрении и их коррекция // *Современная терапия психических расстройств*. – 2015. – № 1. – с. 2–8.

12. Ткаченко С.В., Бочаров А.В. Нейропсихологический анализ дефекта при шизофрении и аффективных психозах / *Шизофренический дефект (диагностика, патогенез, лечение)* / под ред. Вовина Р.Я. СПб.: Изд-во Психоневрол. ин-та им. В.М.Бехтерева, 1991. С. 95–124.

13. Korsakova N.K., Magomedova M.V. Syndrome analysis method in the study of neurocognitive disorders in patients with schizophrenia // *Moscow University Physics Bulletin. Ser. 14, Psychology*. 2002.No. 4. S. 61–67.

14. Petrova, N.N., Dorofeykova, M.V., & Voinkova, E.E. (2016). Cognitive impairment in patients with schizophrenia at different stages of the disease. / *neurology and psychiatry*. с.с. Korsakova, 116 (4), 10-15 ..

15. Sargsyan G. R., Gurovich I. Ya., Kif R. S. Standard data for the Russian population and standardization of the scale “brief assessment of cognitive functions in patients with schizophrenia” // *(bacs) social and clinical psychiatry* // vol. 20 issue 3.

16. Keefe R.S., Harvey P.D., Goldberg T.E. et al. norms and standardization of the brief assessment of cognition in schizophrenia (bacs) // *schizophr. res*. 2008. vol. 102, n 1-3. p. 108–115.

17. Morteza S, Mehrdad J. Hierarchical reasoning by neural circuits in the frontal cortex. *Science*, 2019; 364 (6441): eaav891 Published May 2019

18. Cerebral immune activation in chronic hepatitis C infection: a magnetic resonance spectroscopy study / D. M. Forton [et al.] // *J. of Hepatol.* - 2008. - Vol. 49, N 3. - P. 316–322)

19. Maybogin A. M. morph metric analysis of structural changes in the brain in chronic infections caused by the hepatitis C virus // *International Research Journal*. - 2017. - No. 01 (55) Part 1 - S. 135-143.

**Entered 09.02. 2020**