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Some Determinants of Disturbances of Social Functioning in Patients with Paranoid Schizophrenia with Related Viral Hepatitis

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Abstract--- *Schizophrenia, like no other mental illness, is accompanied by a violation of social functioning - destabilization of personal relationships, separation from the family, society, distortion of the usual forms of activity, communication. Social maladaptation as a result of the disease, which entails the disability of young and physically safe persons, leads to enormous economic costs for society. As a result of the study, it was found that with 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. A significant factor for schizophrenia patients with chronic viral hepatitis is also the hepatotoxic effect of many psychotropic drugs. The purpose of the study was to determine the effect of impaired problem-solving behavior and a subjective assessment of the quality of life on the processes of social functioning in patients with paranoid schizophrenia with concomitant viral hepatitis.*

Keywords--- *Paranoid Schizophrenia, HCV, HBV, Hepatitis, Neurosciences, Behavior.*

I. RELEVANCE

Schizophrenia, like no other mental illness, is accompanied by a violation of social functioning - destabilization of personal relationships, separation from the family, society, distortion of the usual forms of activity, communication. Social maladaptation as a result of the disease, which entails the disability of young and physically safe persons, leads to enormous economic costs for society. Over 50% of patients with schizophrenia are of socially active age, and therefore there is a special social significance of their rehabilitation. One of the factors influencing adaptation in society is a violation of social intelligence, the individual's ability to non-verbally understand the state of both individual partners, and the microenvironment as a whole. This concept is of particular importance in patients with paranoid schizophrenia, which causes a violation of the ability to effective interpersonal interactions [1]. At the moment, there is no definitive answer about the causes of violations of social intelligence, however, some studies in this area indicate the special influence of the neurocognitive pool and the characteristics of the subjective interpretation of the quality of life of patients on the processes of social functioning [2].

The upset in the components of the cognitive pool probably underlies such phenomena as impaired social functioning and a decrease in the quality of life [3]. 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. In turn, the variety of variants of cognitive dysfunctions and their impact on various aspects of the

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schizophrenic process leaves a large number of questions open and provides rich ground for scientific research in this area [4]. Data on the degree, profile, causes, and correlates of cognitive impairment in schizophrenia are scattered and contradictory [4, 5]. Much data has now been gathered that paranoid schizophrenia is associated with impaired many cognitive functions. They are found in healthy relatives of the first degree of kinship, in patients already in childhood, in the premorbid disease, most clearly manifested in high-risk conditions - psychopathological diathesis [6,7]. In the prodromal period of schizophrenia, there is an increase in cognitive deficit associated with morphological and functional changes in the brain, which leads to the development of psychosis, during which cognitive impairment persists. Patients with endogenous psychoses already at the first hospitalization have cognitive impairment, and in patients with schizophrenia they are most pronounced.

The quality of life is an indicator that integrates a large number of physical, psychological, emotional and social characteristics of the patient, reflecting a person's ability to adapt to the manifestations of the disease. The involvement of quality of life parameters in assessing the results of treatment of mentally ill patients and the effectiveness of treatment and rehabilitation measures in modern medicine is a reflection of a shift in ideology from paternalism to the principle of partnership, the formation of a patient's sense of cooperation in the treatment process and responsibility for the results of therapy and their social behavior. On the other hand, a subjective assessment of the quality of life for patients helps to understand where the patient finds it difficult to realize himself in society, how he perceives himself and the surrounding microsocium, and whether he integrates himself into the continuum of public life.

Undoubtedly, a large number of variables in the form of various external factors affect the problem of the neurocognitive pool and the quality of life of a patient with paranoid schizophrenia. 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. 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 by many authors have shown that markers of HBV infection were found in 23.0 - 81.3%. Among them, HBsAg was determined in 2.0-18.1% of cases. Anti-HCV was detected in 0.42-20.3% of patients in psychiatric clinics. It should be noted that HCV has a pronounced neurotropism, characterized by morphofunctional 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 [6, 7, 8]. As a result of the study, it was found that with 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. A significant factor for schizophrenia patients with chronic viral hepatitis is also the hepatotoxic effect of many psychotropic drugs [9].

The involvement of general anatomical structures that implement a whole range of disorders of the higher nervous activity of a person, the active process and changes in the neurochemical pattern both at the level of functional disorders characteristic of paranoid schizophrenia and at the structural level characteristic of chronic viral hepatitis, leads to a distortion of neuroplasticity and the formation of new psychopathological phenomena.

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

The literature reveals a rather large information layer devoted to the problem of cognitive impairment in patients with schizophrenia and an even larger one devoted to the quality of life of this group of patients, while the effect of chronic diseases, namely viral hepatitis, on these important determinants of social functioning is not covered.

II. MATERIAL AND METHODS

The study was conducted at the Tashkent City Clinical Psychiatric Hospital. 71 patients with a verified diagnosis in accordance with ICD-10 paranoid schizophrenia (F-20.0) were examined. The study group consisted of 48 patients. The selection criterion was the presence of a concomitant diagnosis of chronic viral hepatitis C (CGC) and chronic hepatitis B (CGB). The study group excluded respondents who had other chronic diseases, namely cardiovascular disease, diabetes mellitus, thyroid disease, addictive disorders associated with the use of psychoactive substances, etc. The comparison group included 23 patients diagnosed with paranoid schizophrenia without acute or chronic somatic pathology. To achieve this goal, we used clinical, psychopathological, experimental psychological, clinical and statistical research methods. Psychometric evaluation was carried out 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 gradations of its severity, a thorough operational definition and precise instructions for its identification are given. The intellectual-mnestic sphere was assessed using a number of psychometric scales: Schulte tables, “Memorizing 10 words”, “4th extra”.

Schulte tables are a set of numbers (from 1 to 25) arranged randomly in cells. The subject must show and name in a given sequence (usually increasing from one to twenty-five) all numbers. The test subject is offered five non-identical Schulte tables in a row, in which the numbers are arranged in different order. The time spent by the test subject on showing and naming the entire series of numbers in each table separately is recorded.

Test for memorizing 10 words. Two categories were used to evaluate semantic verbal fluency: “animals” and the composite category “fruits and berries”. The subject was given the following instructions: “At my command, start calling the animals. Call me until I stop you. Let's see how many animals you can remember in 1 minute. We started. " After the end of the first test, the experimenter asked the subject to name the fruits and berries. When calculating the result, words excluded repeatedly or not belonging to the indicated categories, as well as the names of animal subcategories, such as “fish” or “birds”, were excluded. An indicator of verbal fluency was the total number of correctly named words in the first and second samples. The test was presented as part of a wide experimental psychological examination. Patients were examined after clinical improvement, before discharge. Typically, healthy subjects reproduce 10 words after 3-4 repetitions (sometimes with trained memory - after 2 repetitions). After 20-30 minutes, the subject is asked to repeat the words he remembers. In cases where memory impairment is clinically determined, this is done earlier, after 10 -15 minutes. After another 30 minutes, the subject

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is again asked to repeat the words he remembered. In the protocol of experience, the words referred to the patient (correctly and erroneously) are noted. The results of the memory test are displayed graphically.

"4th superfluous." The level of verbal-logical thinking, the ability to generalize and highlight the essential features in the subject necessary for generalization are evaluated. Four words are read, three of which are interconnected in meaning, and one word does not fit the rest. It is proposed to find a “superfluous” word and explain why it is “superfluous”.

The problem-solving function of the neurocognitive pool was evaluated as follows: the solution to 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, on it a disk of a smaller radius, and so on, at the top of the pyramid - the smallest disk. It is required to transfer the entire pyramid to another rod, observing two rules: first - at one time you can transfer one top disk from any rod to any other; second, the disk can only be placed on a disk of a larger radius. The proposed problem 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 to evaluate the problem-solving behavior was the Towerof London Test, developed T. Shallice [Shallice, 1982], which is used in applied clinical neuropsychology to evaluate executive functioning specifically to identify deficits in planning. 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 alleged algorithm of the respondent’s actions was that the subject should make sure that the set of chips at the bottom of the proposed table fully copied the location of the chips at the top 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 that 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, the ability of respondents was evaluated taking into account the experience of mistakes made to apply this information to a more rational solution of the task.

In order to study the quality of life of patients, a short version of the questionnaire was used - the WHO Quality of Life (WHO) - World Health Oranization's Qualitiof Life [10, 11]. Information in the questionnaire is recorded taking into account the subjective sensations of the individual's quality of life. This concept is defined by WHO as "the perception by individuals of their lives in the context of the culture and value systems in which they live, and in accordance with their own goals, expectations, standards and concerns." The short version of the questionnaire consists of 26 questions. 24 of them are grouped into 4 scales, 2 questions (first and second) are taken into account in isolation. We used a version adapted at the Scientific Research Institute named after Ankylosing spondylitis.

III. RESULT AND DISCUSSION

The study of the influence of the characteristics of the psychopathological profile on the decision-making strategy was carried out by means of psychometric measurements using the PANSS scale. The study design corresponded to the classical form of this test described above. In the study group, the PANSS composite score

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averaged -4.82 ± 4.05, which corresponds to the prevalence of negative symptoms. The average composite score in the comparison group was + 2.11 ± 3.41, which corresponded to the prevalence of positive symptoms. Thus, negative symptoms prevailed in the study group, while the comparison group was mostly characterized by psycho-productive symptoms.

Assessment of the intellectual-mnestic sphere. Attention disorder is a disorder of focused attention, manifested in a lack of concentration, increased distractivity, difficulty concentrating, maintaining, switching attention to new objects. The severity is evaluated based on observation of the patient during the conversation. When studying attention using Schulte tables, the following was revealed: in the study group, 7 (14.5%) showed a sufficient concentration of attention, and 11 (22.9%) showed insufficient concentration on the object. Sustained attention had 3 (6.25%) and unstable 6 (12.5%) patients. Also present were patients in whom attention was characterized as exhausted - 21 (43.7%).

In the comparison group, 5 (21.7%) patients had insufficient attention, 12 (52.1%) and unstable 3 (13%) subjects had stable attention. Exhaustible attention was found in 3 (13%) patients from the comparison group.

Memory is a mental process of capturing (memorizing), preserving and reproducing past experience [12]. Memory disorders in mental and somatic diseases are manifested by a violation of the ability to memorize, hold and reproduce acquired material. It is possible to reduce the ability to memorize against the background of impaired attention during the development of overwork conditions, as well as during convalescence after somatic diseases. Data on the mnestic sphere are presented in table 1

Table 1: Indicators of the Mnestic Sphere of the Studied Patient Groups

10 words memorization	The main group (n = 48) Median (25% -75%)	Comparison Group (n = 23) Median (25% -75%)
1 presentation	6,0 (5,0-6,0)	6,0 (5,0-7,0)
2 presentation	7,0 (5,0-7,0)	7,0 (6,0-8,0)
3 presentation	7,0 (6,0-7,0)	7,0 (6,0-8,0)
Delayed playback	7,0 (5,0-8,0)	7,0 (5,0-8,0)

The data obtained indicate a decrease in short-term memory, since the reproduction of 9-10 words by the third repetition and further compliance with this level during subsequent iterations is considered a normative indicator. In addition, the reproduction curve is close to the shape of the plateau, which indicates emotional lethargy, lack of interest in the study. The difference between the groups is unreliable ($p > 0.05$).

As can be seen from table 1, the scope of working memory is significantly affected, which indicates deep neurocognitive impairment, namely, the retention process suffers. It is noteworthy that in the process of verbal learning, the respondents of the main group performed worse with the proposed testing conditions.

As a result of a psychometric study of thinking in patients with schizophrenia using the “4th superfluous” technique, aimed at identifying the level of visual-figurative and verbal-logical thinking, as well as the thought processes of analysis, generalization, comparison, certain patterns were revealed. In the main group, a high level of generalization was found in 4 (8.3%) of the studied, 19 (39.5%) patients can not always distinguish the essential features of objects, and in 25 (52.08%) the ability to generalize is poorly developed. the comparison group showed

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that a high level of development of generalization was found in 9 (39.1%) respondents, an average level in 8 (34.7%) and low rates were demonstrated by 6 (12.5%) patients.

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 [12, 13]. 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 task, 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, a similar explanation was needed already in 5 (10.41 %) 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 averaged slightly more than 15 ± 0.7 sec. Than in the comparison group 8 ± 0.4 sec., But it cannot be said that it 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 strategies 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 ± 1.1 minutes; in the comparison group, an average of 8 ± 0.9 minutes was spent on a similar task. To accomplish the task, the most significant was the number of moves and errors, an indicator that determines the quality of the chosen strategy when solving the task. Patients in the main group averaged 51 ± 1.7 moves, in the comparison group the average number of moves was 39 ± 1.5 moves. This indicates 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 ± 4.0, and in the comparison group 9 ± 5.0. 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 (39.5%) patients, when making mistakes, they started the task from the beginning and made similar mistakes three or more times, 6 (12.5%) patients after several attempts and errors refused to continue the test, 3 (6 , 25%) after repeated errors showed aggression to the testing material. In the main group of 15 (31.25%) patients during testing, making strategic mistakes, they did not repeat them in the future, taking into account previous experience. In the comparison group, only 3 (13.04%) 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. The Tower of London Test passed the standard time interval for all respondents. 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

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new task conditions, 21 (43.7%) patients of the main group and 9 (39.1%) patients of the comparative group From the first try to accept new information, 11 (22.9%) of the main group and 5 (21.7%) of the comparison group 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 ± 9.1 minutes to complete all the tasks presented, the comparison group to achieve the final result took an average of 21.2 ± 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 ± 4.1 minutes, in the comparison group this indicator was close and amounted to 6.3 ± 4.0 minutes. Both groups solved the second half of the task with a significant increase in the time spent, 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 unreasonable errors in the study group was 102 ± 11.0, and in the comparison group –87 ± 9.0. 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 different stages of the study with an apparent identity allowed us to establish that patients with paranoid schizophrenia have significant impairments in the field of flexibility of thinking, patients in both groups in most cases found it difficult to switch from one task condition to another. Thus, the indicators of our experiments do not contradict the data of other researchers. In the course of 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.

An analysis of the WHOQOL-BREF questionnaire revealed a significant decrease in the quality of life of patients in the main group. The total score in all areas of the average score in this group was 61 ± 3.0, which is a low indicator of quality of life for patients. In the comparison group, the average value of the sum of points was 81 ± 4.0 points. It is also important that in the comparison group, the majority of patients 26 (54.1%) negatively related both to the testing procedure and to certain categories of the questionnaire, and 10 (20.8%) patients categorically refused to perform testing. Physical well-being, independently noted by patients, showed that in the main group of 15 (39.4%) patients during the test they had 17 points, 10 (26.3%) patients -19 points, 8 (21%) patients -21 points and 5 (13.1%) patients -20 points.

The process of orienting a person in his own inner world as a result of self-knowledge and comparing himself with other people, i.e. self-perception is an integral part of human life. As one of the criteria for quality of life, self-perception plays a special role in patients with schizophrenia. Self-perception is one of the most vulnerable aspects of the patient's personality. Analysis showed that patients of the main group often negatively assessed self-

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perception, describing themselves as “lonely”, 3 (7.8%) patients - 16 points, 4 (10.5%) patients -17 points, 4 (10.5%) patients -18 points, 13 (34.2%) patients -15 points, 9 (23.6%) patients - 14 points and 5 (13.1%) patients 13 points . Thus, it was found that only 10% of respondents in the main group had a score of 18 for self-perception, which corresponded to the average number of points for this sphere of quality of life, in other patients the indicators were lower than average.

The microsocial environment is extremely important for the patient. Support for family and friends is currently regarded as a very important component of the rehabilitation of the mentally ill [14]. In the main group, patients were distributed as follows: in 16 (42.1%) patients, this indicator was 6 points, 7 (18.4%) had a score of 5, in 3 (7.8%) patients, the indicators were 3 points, 8 (21.0%) patients had indicators of 7 points and 4 (10.5%) patients had 8 points.

The indicators of social well-being in both groups were below average values, and in the main group were 6 points and the comparison group 8 points from 15 points of the maximum possible value. In the main group, patients had the following number of points: 10 (26.3%) patients - 5 points, 5 (13.1%) patients - 4 points, 8 (21.0%) patients- 3 points, 6 (15.7 %) patients — 8 points; 5 (13.1%) patients — 9 points; 4 (10.5%) patients — 6 points.

Table 2: Quality of Life Indicators of the Examined Patients

Indicator	Main group	Comparison group
General well-being	2,73±0,1	3,11±0,1*
Health satisfaction	2,73±0,09	3,11±0,08*
Food satisfaction	2,85±0,16	3,5±0,08*
Intelligent productivity	2,58±0,18	3,06±0,14*
Contact with others	2,88±0,13	3,19±0,13*

Note. * - differences relative to the data of the comparison group are significant (P <0.005)

Summarizing the results obtained, we can conclude that a significant component of the subjective assessment of the quality of life is in responding to schizophrenia patients questions when conducting a questionnaire to determine the level of quality of life and social functioning. The table below shows that the indicators of the main group are significantly lower than the indicators of the comparison group.

IV. 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 affect 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. When assessing the patient's subjective characteristics of the quality of life, it was found that the important links of social functioning in this group were interpreted by patients incorrectly with significant decreases in their own assessment in society, which was not true. The above indicates a violation of the understanding of emotional patterns, both from the microenvironment of patients, and the impossibility of manifesting their own emotions.

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