In 6 patients neopterin levels decreased to normal ranges but in 2 cases it remained elevated. It should be noted that in 1 patient this indicator before discharge from the hospital increased significantly compared to the initial normal value, although the course of the disease was favorable and no complications and relapses were noted later.

Patient monitoring revealed the following. In 1 patient with endophthalmitis, the most unfavorable outcome was eye removal. At the same time, he also had the highest initial level of sVCAM-1 (3472 ng / ml), a high level of neopterin (20.6 nmol / L), both of which rapidly increased. The second patient with endophthalmitis had an initially high level of anti-DNA; before discharge, it increased by almost 5 times, but the remaining indicators practically did not exceed normal values. The course of the disease was protracted, but in the end, the outcome was favorable. Finally, in the third patient, admission showed rather high levels of antibodies to nDNA (93.5 U / ml) and neopterin (27.7 ng / ml), but by the end of treatment they returned to normal, which coincided with positive clinical dynamics. No further relapses were noted. Vision loss as the outcome of acute uveitis was associated with a high level of sICAM-1 (610 ng / ml), a moderate increase in neopterin and antibodies to nDNA upon admission. At the same time, a moderate increase in the level of sVCAM-1 was noted in the dynamics. Finally, we observed the case when a patient with acute uveitis, normal and favorable course of the postoperative period after 1.5 months developed severe endophthalmitis, requiring repeated hospitalization and prolonged drug therapy.

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Clinical dynamics of the problematic use of the Internet in patients with personality disorders according to a 2-year catamnestic monitoring

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Abstract

The problematic Internet use (PIU) is becoming a global medical problem. In view of the high rate of comorbidity of PIU with personality disorders (PD), there is a need for a clinical and psychopathological analysis of the dynamics of PIU in patients with PD against the background of ongoing therapy. The aim of the study was to study the dynamics of PIU in patients with PD over a 2-year follow-up taking into account the treatment. The object of the study was 43 males with PD and seeking medical help from the ANO NPC MRSN in connection with excessive use of the Internet. Within the framework of the clinical and psychopathological method, 3 PIU options were identified: Internet addiction, Internet coping - strategy for decompression and PD reactions, personality development according to the type of “digital autization”. Against the background of psychotherapeutic and psychopharmacological treatment, after 6 months there was an improvement in social functioning according to the GAF scale for all three PIU variants. After 6 months, 26 people continued the therapy. According to one-year follow-up data, the

following variants of PIU dynamics were observed - with Internet addiction: 1) Reduction of addictive symptoms with satisfactory compensation of PD 2) Relief of dependence on the background of partial compensation of RL 3) Relapse on the background of decompensation of PD 4) Autochthonous relapse; with Internet coping strategies for decompensations and reactions of PD: 1) Stopping the use of the Internet as coping due to the development of more adaptive coping mechanisms for stress 2) A significant reduction in the use of the Internet as coping due to the long-term compensation of PD 3) Continued implementation of Internet coping - strategies; when developing a personality like "digital autization": 1) Leaving the digital environment as the only place for social identification with the development of adaptive strategies for social functioning 2) Prolongation of development with the formation of a state close to the Hikikomori phenomenon.

Keywords: problematic Internet use, clinical dynamics, follow-up, personality disorders, Internet addiction, coping, digital autization, decompensation, reaction

Introduction. In recent years, Internet access has become almost ubiquitous, ultimately improving the quality of life associated with communication, education, business, recreation, and many other aspects. [1] Along with the positive opportunities provided by the global network, researchers are increasingly focused on the negative consequences of Internet use [2]. The term problematic Internet use (PIU) has been known since 1995 and is attracting public attention as a new mental disorder [3-5]. PIU is characterized by poor self-control regarding Internet use, which leads to problems in school, work, family life, and other areas of social functioning [6-9]. Scientific synonyms of PIU are such terms as "Internet addiction", "compulsive Internet use", "pathological Internet use" [10]. PIU has the status of behavioral dependence, with the dependence on computer games as the most important subtype of PIU was included in section III of the DSM-5 [11]. The epidemiological indicator of PIU among adults is estimated from 4.0 to 6.2% [12-14], among adolescents-6.0% [15].

PIU is a serious public mental health problem worldwide, and especially among young users [16]. Adolescents are particularly vulnerable to the emergence of Internet-dependent behavior, and are the subgroup of the population most exposed to the negative impact of the global network [17]. Researchers emphasize the criterion of heterogeneity of PIU, so Davis (2001) presented cognitive behavioral PIU model involving distinction between generalized problematic Internet use and specific subtypes of PIU [18]. PIU has a close association with attention deficit hyperactivity disorder, depression, anxiety, sleep disorders, impulsive control disorder and drug addiction [19-23]. An important clinical and social significance is the problem of comorbidity associated with personality disorders (PD), due to the high incidence of the latter (10.6%) [24]. According to foreign researchers, the comorbidity rate between PIU and PD is estimated from 10.3 to 42.0% [25,26].

For PIU therapy, 3 main directions of therapeutic interventions are proposed: 1) Psychopharmacotherapy [27,28]; 2) psychotherapeutic correction [29-32] 3) Combination of psychotherapeutic techniques and drugs [33,34]. Despite the latter, the clinical dynamics of PIU in patients with PD observed against the background of therapeutic interventions has not been studied.

Aim of research. Study of the clinical dynamics of problem Internet use in patients with personality disorders taking into account therapeutic interventions

Material and methods. We examined 43 male patients (average age 19.6 ± 1.8 years) with PD seeking medical care in ANO INPC MSRN due to complaints of excessive use of the world network. PD verification was carried out on the basis of appropriate diagnostic markers ICD-10 and additional use of diagnostic test RL Dvorshchenko V. P. The typological structure of PD among the subjects was as follows: in 19 cases (44.2%) there was schizoid PD, in 10 cases (23.3%) – infantile PD, in 8 cases (18.6%) – avoiding PD and in 6 cases (14.0%) emotionally unstable PD of impulsive type. The diagnosis of PIU was carried out by means of a clinical-psychopathological method using universal diagnostic criteria of addiction according to Griffiths M. (1996), as well as auxiliary application of the Chen scale of Internet addiction (CIAS). Evaluation of the effectiveness of therapeutic interventions was carried out using the scale of social functioning GAF. The initial processing of the obtained data was carried out using

descriptive statistics. The Mann-Whitney U-test was used to compare psychometric differences in the values of GAF and CIAS scales in the studied cohort of patients before and after therapy. Statistical analysis was carried out through the program STATISTICA V. 10.

Results. When applying clinical psychopathological analysis among the examined contingent, 3 clinical types of PIU were verified: 1) Internet addiction (IA) (n=18) 2) Internet coping strategy in decompensation and reactions of PD (n=12) 3) specific personality development according to the type of "digital autism" (n=13). In IA, excessive use of the Internet implied the presence of a full-fledged addictive symptom complex. In the case of the Internet coping strategy, the world wide web was used intensively but sporadically to compensate for affective disorders within the framework of psychopathic decompensations and reactions. At the same time, the strategy of avoiding reality was used in isolation from other components of the addictive symptom complex, which distinguished the Internet coping strategy from IA. In the case of personality development according to the type of "digital autism", a deep deformation of the cognitive – affective – behavioral motivational vector with the formation of a life style leading to social isolation and close in content to the Japanese phenomenon of "Hikikomori" was observed.

Among patients with IA, schizoid personality disorder was more often observed - 7 cases (38.9%), in the group of patients using the Internet as coping for decompensations and reactions of PD, infantile and schizoid PD prevailed - 5 cases each (41.7%). Schizoids (8 cases (61,5%)) also showed superior representation in patients with personality development, such as "digital autization" (table 1).

Table 1

The ratio of the clinical variant of PIU and the type of PD among treated patients

Clinical variant of PIU	Type of PD	Number of cases (abs. /%)
IA	Avoiding	3(16,7%)
	Schizoid	7(38,9%)
	Emotionally unstable, impulsive type	3(16,7%)
	Infantile	5(27,8%)
Internet coping - strategy for decompensations and reactions of PD	Avoiding	2(16,7%)
	Schizoid	5(41,7%)
	Infantile	5(41,7%)
Personality development according to the type of "Digital Autition"	Avoiding	3(23,1%)
	Schizoid	8(61,5%)
	Hysteroid	2(15,4%)

Taking into account the indicated 3 – component clinical typology of PIU in patients with PD, complex therapy programs were developed, including psychotherapeutic and psychopharmacological blocks (table 2).

Table 2

Structure of complex treatment programs for patients with PIU and PD

Component of the treatment program	Clinical variant of PIU		
	IA	Internet coping strategy in decompensations and reactions of PD	Development of personality on the type of " Digital autism»
Psychotherapy	Motivational interviewing + CBT for PD + CBT for IA	Motivational interviewing + CBT for PD + CBT components for IA	Motivational interviewing + CBT for PD + CBT for IA
Psychopharmacotherapy	Valproate sodium up to 500 mg/day., Periciazine up to 5 mg / day., Thioridazine up to 75 mg / day.	Periciazine up to 8 mg / day., Thioridazine up to 75 mg / day., Teralijen up to 15 mg/day., Fluvoxamine up to 150 mg/day., Sertraline up to 150 mg/day.	Fluancsol up to 10 mg/day., Periciazine up to 4 mg / day., Thioridazine up to 30 mg/day.

It was noted significantly significant (UEmp = 0; UCr = 25, $p \leq 0.01$) reduction of the CIAS as scale in the group of patients with IA before (mean 76.8 ± 9.8 points) and after (mean 35.5 ± 6.2 points) therapy (fig.1).

Figure 1. Dynamics of the average score CIAS scale in the group of patients with IA before and after treatment

There was a statistically significant improvement in social functioning in all 3 groups. In the group of patients with if, the average value of the GAF scale before and after treatment was 48.1 ± 7.1 and 67.3 ± 4.1 points, respectively (UEmp = 0.5, UCr = 25, $p \leq 0.01$), in the group of patients with Internet coping strategy 54.6 ± 11.6 and 73.5 ± 3.4 points, respectively (UEmp = 0.5, UCr = 19, $p \leq 0.01$), in the group with personality development by type of digital autism - 43.1 ± 8.0 and 48.4 ± 9.7 points, respectively (UEmp = 3.5, UCr = 25, $p \leq 0.01$). Improvement of social functioning was noted in the overall sample – 48.4 ± 9.7 points before therapy and 69.2 ± 6.2 points after therapy (UEmp = 70.5, UCr = 338, $p \leq 0.01$) (fig.2).

Figure 2. Dynamics of the average score of the GAF scale depending on the clinical variant of PIU in patients before and after treatment

After the main 6 – month course of therapy, 26 people (60.5%) continued dynamic catamnestic monitoring and treatment. Among them, 11 patients (42.3%) with IA, 8 patients (30.8%) used the Internet as a coping strategy for decompensation and reactions of PD and 7 patients (26.9%) had personality development according to the type of "digital autism".

The average period of catamnesis was 1.6 ± 0.3 years. Therapeutic support was carried out in the form of booster sessions held 1 time in 3 months. If necessary, the issue of psychopharmacological support was discussed. The latter for patients with IA included sodium valproate + periciazine/thioridazine. Patients using the Internet as a coping strategy for decompensation and reactions of PD were recommended a combination of periciazine / thioridazine + Selective serotonin reuptake inhibitors and / or teralijen, patients with personality development of the type of "digital autism" - fluanksol and/or periciazine / thioridazine.

Taking into account the specific clinical and psychopathological interaction of PIU and PD within the framework of 2 – year catamnestic monitoring, various variants of the dynamics of problematic Internet use were determined. In IA, they were as follows: 1) Reduction of addictive symptoms with satisfactory compensation of PD -5 cases (45.5%); 2) relaxation of dependence on the background of partial compensation of PD-2 cases (18.2%) 3) Relapse on the background of decompensation of PD - 1 case (9.1%) 4) Autochthonous relapse-3 cases (27.3%) (table 2)

Table 2

Dynamics of PIU in the variant of IA according to the 2 – year catamnestic monitoring

Options dynamics IA	Number of clinical cases	
	abs.	%
Reduction of addictive symptoms with satisfactory compensation of PD	5	45,5
Relaxation of dependence on the background of partial compensation of PD	2	18,2
Relapse on the background of decompensation of PD	1	9,1
Autochthonous relapse	3	27,3

In the case of using the Internet as a coping strategy, the following variants were observed: 1) Cessation of excessive use of the Internet as a coping due to the development of more adaptive mechanisms of coping with stress - 4 cases (50.0%) 2) Significant frequency reduction in the use of the Internet as a coping due to prolonged compensation of PD - 2 cases (25.0%) 3) Continuation of the implementation of this coping strategy – 2 cases (25.0%) (table 3).

Table 3

Dynamics of PIU in the variant of coping strategies in decompensation and reactions of PD

Dynamics of coping strategy in the form of excessive use of the Internet in decompensations and reactions of PD	Number of clinical cases	
	abs.	
Ending the excessive use of the Internet as coping in connection with the development of more adaptive mechanisms of coping with stress	4	0,0
A significant decrease in the frequency of Internet use as a coping due to long-term compensation of PD	2	5,0
Continued implementation of the Internet coping strategy	2	5,0

In the development of RL type "digital autism" there were such clinical options as: 1) Exit from the digital environment as the only place of social identification with the development of adaptive strategies of social functioning in real society 2) Prolongation of development with the formation of a state in its content close to the Asian phenomenon "Hikikomori", implying a complete rejection of real social life with the use of digital devices to ensure minimal life needs. In the development of RL type "digital autism" there were such clinical options as: 1) Exit from the digital environment as the only place of social identification with the development of adaptive strategies of social functioning in real society 2) Prolongation of development with the formation of a state in its content close to the Asian phenomenon "Hikikomori", implying a complete rejection of real social life with the use of digital devices to ensure minimal life needs (Table 4).

Table 4

Dynamics of PIU in the variant of personality development according to the type of «digital autism»

Dynamics of personality development by the type of " Digital autism»	Number of clinical cases	
	Abs.	%
Exit from the digital environment as the only place of social identification with the development of adaptive strategies of social functioning in real society	4	57,1
Prolongation of development with the formation of a state close to the phenomenon of "Hikikomori»	3	42,9

Conclusion. According to the results of the analysis of 2-year catamnestic follow-up, the overall positive dynamics of PIU was observed in 17 patients (65.4%). Despite this positive trend, further research is needed to develop and test highly effective regimens for complex therapy of problematic Internet use in patients with personality disorders. Such work will have a significant role in improving the quality of life and increase the social adaptability of pathological Internet users.

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