

Clinical Structure and Dynamics of Non-Psychotic Anxiety-Depressive Disorders in COVID-19-Associated Pneumonia

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Abstract The new coronavirus infection - the COVID-19 pandemic has a negative impact not only on a person's physical health, but also on his mental state. This is panic, fear, temptation, depression, and fear and anxiety disorders in society have especially intensified against the backdrop of often unreliable and false information from the media and social networks. Patients with COVID-19 viral pneumonia are diagnosed with various mental disorders. The article discusses the most common behavioral and emotional disorders in patients with COVID-19 viral pneumonia.

Keywords COVID-19, Mental disorders, Mental health, Anxiety, Depression, Cognitive impairment

1. Introduction

Despite the existence of numerous publications, unresolved issues remain in world literature regarding the clinical structure, severity, dynamics, and risk factors of anxiety-depressive disorders in the context of COVID-19-associated pneumonia, as well as optimal approaches to their diagnosis and management in real clinical practice [1,2,3,4]. In our country, this area has not been sufficiently studied, which limits the possibilities of timely detection of such disorders and the development of practice-oriented recommendations for general practitioners and inpatients. This determines the relevance of this study and substantiates the need for clinical and psychopathological assessment of non-psychotic anxiety-depressive disorders in patients with COVID-19-associated pneumonia, followed by the formation of a justified tactic for complex management [5,6,7,8].

According to the literature, the spectrum of mental disorders in COVID-19-associated pneumonia is mainly represented by anxiety-depressive symptoms at the neurotic and affective levels, while severe psychotic states are relatively rare, their pathogenetic basis is different and requires separate study [9,10,11,12]. In this regard, within the framework of this work, the main emphasis was placed on non-psychotic anxiety-depressive disorders, which are the most common and clinically significant for the general therapeutic network [13,14,15].

Research objective

Determination of the clinical and syndromic structure of the most common mental disorders in patients with COVID-19-associated pneumonia in inpatient settings.

2. Materials and Methods

The study used clinical and clinical-psychopathological methods, clinical-catamnestic observation, experimental-psychological method, as well as mathematical-statistical methods for processing the obtained data. The study included patients aged 20-59 years with COVID-19-associated pneumonia, confirmed by PCR and/or CT. Assessments were conducted on days 5-7 of hospitalization and before discharge. Psychometric tools: Hamilton anxiety scale (HARS), Hamilton depression scale (HDRS-17), Spielberger-Hanin state-characteristic anxiety (STAI), Clinical Global Impression (CGI).

3. Result and Discussion

In order to quantitatively assess the severity of anxiety-depressive symptoms and their dynamics during inpatient treatment, patients were examined twice (on days 5-7 of hospitalization and before discharge from the hospital). The obtained indicators were compared between the main group and the comparison group, and changes within the group were also analyzed. For the objectification of anxiety and depressive symptoms, standardized psychometric scales - HARS and HDRS-17 were used. This made it possible to assess the degree of initial disorders in the acute period and

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their reduction by the time of release (the results are presented in Tables 1-2).

The Hamilton Anxiety Scale (HARS) was used to assess the severity of general anxiety in terms of mental and somatic components. Comparison of the indicators of the main and comparison groups on days 5-7 of hospitalization and before discharge made it possible to quantitatively characterize the level of anxiety manifestations in the acute period and assess their decrease against the background of ongoing treatment and stabilization of the somatic state (Table 1).

According to the data in Table 1, the frequency of hospitalization in the main group. At the stage of days 5-7, the average total score for HARS corresponded to a moderate level of anxiety and was significantly higher than the indicators of the comparison group ($p < 0.001$). By the time of discharge, a statistically significant reduction in anxiety symptoms was noted in the main group ($p < 0.001$), however, anxiety indicators remained at a higher level compared to the comparison group ($p < 0.001$). This situation reflects the relative stability of anxiety manifestations and the need for their targeted correction. In the acute period, the comparable contribution of mental and somatic components to the anxiety structure is noteworthy, which indicates a pronounced somatization of anxiety experiences in the context of COVID-19-associated pneumonia.

Depressive symptoms were assessed using the Hamilton Depression Scale (HDRS-17). The obtained indicators were presented in the form of comparative values for the main and comparison groups on days 5-7 of hospitalization and before discharge. This made it possible to quantitatively characterize the severity of depressive symptoms in the acute period of the disease and assess their dynamics during inpatient treatment (Table 2).

According to the data of Table 2, in the first 5-7 days of

hospitalization, the average level of depressive symptoms in patients of the main group corresponded to moderate depression and was significantly higher than the indicators of the comparison group ($p < 0.001$). By the time of discharge, a statistically significant reduction in depressive symptoms was noted in the main group ($p < 0.001$), however, HDRS-17 indicators remained higher than in the comparison group. ($p < 0.001$). This indicates the relative stability of the depressive component even with clinical improvement of the somatic state. In the analysis of the HDRS-17 clinical profile, it was established that in the main group, as a rule, a significant contribution was made by points reflecting decreased activity and asthenia, sleep disturbances, and somatized anxiety. The expression of ideas of self-blame and suicidal tendencies remained at a low level. This is consistent with the predominance of the apathetic-anedonic variant of depressive disorders in the context of COVID-19-associated pneumonia.

To determine the proportion of patients with clinically significant anxiety-depressive symptoms remaining at the time of discharge, the frequency of exceeding the threshold values on the HARS and HDRS-17 scales was additionally assessed ($HARS \geq 18$ and/or $HDRS-17 \geq 14$). Data collected It is presented in Table 3.

As can be seen from Table 3, in the majority of patients in the main group, in the first 5-7 days of hospitalization, clinically significant levels of anxiety and/or depression, exceeding the threshold values for HARS and HDRS-17, were noted. Despite a significant decrease in the proportion of patients with pronounced symptoms by the time of discharge, clinically significant anxiety-depressive symptoms persisted in some patients. This circumstance confirms the presence of residual symptoms at the end of inpatient treatment and justifies the need for further correction and correct routing for such patients.

Table 1. Dynamics of anxiety indicators on the HARS scale (M \pm SD)

Indicator	Main group (n=102)		Comparison group (n=82)		Intergroup differences (p)
	Days 5-7	before release	Days 5-7	before release	
HARS Total Score	24.6 \pm 4.8	14.2 \pm 4.6	9.4 \pm 3.2	7.6 \pm 2.9	< 0.001 (at both stages)
Emotional anxiety	13.2 \pm 3.1	7.5 \pm 2.8	5.1 \pm 1.8	4.2 \pm 1.6	< 0.001 (at both stages)
Somatic anxiety	11.4 \pm 2.9	6.7 \pm 2.6	4.3 \pm 2.1	3.4 \pm 1.8	< 0.001 (at both stages)

Table 2. Dynamics of depression indicators according to the HDRS-17 scale (M \pm SD)

Indicator	Main group (n=102)		Comparison group (n=82)		Intergroup differences (p)
	Days 5-7	before release	Days 5-7	before release	
HDRS-17 Overall Score	19.2 \pm 5.1	11.3 \pm 4.7	6.8 \pm 2.9	5.9 \pm 2.6	< 0.001 (at both stages)

Table 3. The proportion of clinically significant anxiety-depressive symptoms in patients of the main group (n = 102; n, %)

Indicator	5-7 days of hospitalization	Before release
HARS \geq 18	94. (92.2)	22 (21.6)
HDRS-17 \geq 14	86 (84.3)	29 (28.4)
HARS \geq 18 and/or HDRS-17 \geq 14	96 (94.1)	39 (38.2)

4. Conclusions

At the stage of primary examination (days of hospitalization 5-7-) the clinical picture in patients of the main group was characterized by a significantly higher frequency of insomnia (76.5%), pronounced asthenia (83.3%), somatized anxiety / fixation to breathing (70.6%), as well as apathetic-angedonic (asteno-apatihic) signs (58.8%) compared to the comparison group (< Panic-like episodes (27.5%) and cognitive strain (45.1%) were also recorded statistically significantly more often ($p < 0.001$).

At the stage of 5-7 days of hospitalization, the syndromic structure of anxiety-depressive disorders in the main group was mainly represented by the anxiety (somatized) variant (37.3%), the mixed anxiety-depressive variant (21.6%), and the asthenic-depressive/asthenic-apatihic variant (19.6%). Asthenic-dyssomatic (11.8%) and dysphoric (9.8%) variants were less common. In most patients, the combination of several syndromic components was characteristic, with one of them being dominant.

Nosological qualification according to ICD-10 showed the predominance of other anxiety disorders (F41) (47.1%) and a high proportion of adaptation disorders (F43.2) (34.3%), while the depressive episode (F32) was relatively rare (18.6%). Within the framework of the F41 column, mixed anxiety and depressive disorders (F41.2 - 23.5%) were noted more often. Among the adaptive disorders, a mixed anxiety and depressive reaction (F43.22 - 15.7%) prevailed. The depressive episode in most cases corresponded to a mild or moderate degree (F32.0-F32.1).

Psychometric assessment revealed a significant increase in anxiety and depression indicators in the main group compared to the comparison group: on days 5-7 of hospitalization, HARS was 9.4 ± 3.2 versus 24.6 ± 4.8 , HDRS-17 was 6.8 ± 2.9 versus 19.2 ± 5.1 ($p < 0.001$). By the time of discharge, a statistically significant reduction in anxiety-depressive symptoms was noted (HARS up to 14.2 ± 4.6 ; HDRS-17 up to 11.3 ± 4.7), however, intergroup differences persisted ($p < 0.001$).

Clinically significant anxiety and/or depression in terms of threshold values persisted in some patients of the main group by the time of discharge: HARS ≥ 18 - 21.6%, HDRS-17 ≥ 14 - 28.4%, HARS ≥ 18 and/or HDRS-17 ≥ 14 - 38.9%. This confirmed the presence of residual symptoms and justified the need to ensure the continuity of treatment at the post-hospital stage. The integral clinical assessment was also in the main group (CGI-S 4.1 ± 0.7 ; CGI-I 2.4 ± 0.8) and improvement compared to the comparison group (CGI-S 2.3 ± 0.6 ; CGI-I 1.6 ± 0.6 ; $p < 0.001$).

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