Features Of Cognitive Impairment In Middle-Aged Men Who Have Undergone A New Coronavirus Infection

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ABSTRACT

For middle-aged men, after suffering a new coronavirus infection, a moderate decrease in attention function, regulatory function, visual-spatial function is characteristic, with a sufficiently intact memory and speech function.

KEYWORDS

Cognitive Disorders, Novel Coronavirus Infection.

INTRODUCTION

The clinical picture of neurological diseases and syndromes caused by coronavirus infection corresponds to the usual concepts. Some researchers have proven that SARS-CoV-2 can persist for a long time in the central nervous system in the form of inactive fragments, which means that it can recur in susceptible individuals when appropriate conditions appear. This assumption raises concerns about long-term neurological complications in infected and cured patients (1).

In their publication, some authors cite data where neurological changes were found in 30-40% of patients with COVID-19. More than 30-50% of these changes were cognitive. (2, 3).

In this connection, there is an intensive intensification of research related to the development of diagnostic criteria, etiology, pathogenesis and treatment of cognitive disorders against the background of the transferred new coronavirus infection. In recent years, more and more attention has been paid to the problem of pre-dementia cognitive disorders.

The use of neuropsychological tests reveals the widespread prevalence and significance of cognitive impairment.

Purpose of the study

To determine the nature of cognitive disorders in middle-aged men who have undergone a new coronavirus infection.

MATERIALS AND RESEARCH METHODS

Examined 64 patients - men who have suffered a new coronavirus infection, making up the main group, all of them underwent planned examination and treatment in the neurological department of the clinic of the Andijan Medical Institute. The exclusion criteria were the presence of a history of acute cerebrovascular accident, severe traumatic brain injury or other focal changes in the brain according to CT, mental and somatic diseases in the stage of decompensation.

The age of the patients is 45 - 59 years, which corresponds to the average age group according to the WHO criteria. The average age was 52.6 ± 4.8 years.

The control group (n = 20) consisted of men comparable in age and educational level with the main group.

Objective clinical and laboratory examination was carried out according to the generally accepted method.

The assessment of impairments to cognitive functions (attention, memory, speech function, regulatory, visual - spatial functions) and emotional - volitional disorders was carried out according to the results of neuropsychological testing, which included: a short study of mental status according to the MMSE (Mini - mental state examination) scale; Frontal Dysfunction Battery Assessment (FAB); clock drawing test; assessment of verbal fluency; test "5 words"; hospital scale of anxiety and depression; Beck Depression Inventory. Testing was carried out during the period of maximum working capacity of patients (in the morning), performed in a separate room to eliminate distractions.

Statistical data processing was carried out using the application package "Statistica 6.0".

RESULTS

According to the data of clinical examination, the most frequent complaints in patients of the main group were memory loss, attention loss, fatigue (78%), headache (70%); complaints of sleep disorders (55%) also prevailed.

The clinical examination also revealed that the dominant neurological syndromes in the patients of the main group were intellectual-mnestic (100%) astheno-depressive and astheno-neurotic (75%), vestibulo-atactic (62%) and pyramidal (52.5%).

In patients from the control group, when examining the neurological status, data for pathological symptoms were not obtained.

According to the results of neuropsychological testing, mild cognitive impairment was revealed in 24 (38%) patients of the main group, and moderate cognitive decline was diagnosed in 37 (62%) cases.

Based on the analysis of the results of testing according to the MMSE scale, there were no violations among the patients of the main group in 27 (42.6%) patients; pre-dementia disorders were detected in 33 people (51.4%); mild dementia - 4 people (6%).

According to testing on the FAB scale, 25 patients (39%) had no cognitive impairment in the main group; mild cognitive impairment was detected in 39 people (61%).

According to the results of the "5 words" test, 39 (61%) patients of the main group obtained normal results, and 25 (39%) patients had cognitive impairments. After the introduction of prompts, 52 (81%) patients completed the task.

Based on the results of verbal fluency assessment, 30 (46.9%) patients showed normal results, 34 (53.1%) patients showed regulatory dysfunctions.

When analyzing the results of the clock drawing test, 28 (43.8%) patients

showed normal results, 36 (56.2%) patients did not complete the task accurately.

When comparing the test data of patients of the main group with the normative indicators, a decrease in memory was revealed in 24 (38%) patients; impaired speech function in (6%), decreased attention function in 52 (81%); impaired regulatory function in 44 (69%) patients; decreased visual-spatial functions in 47 (63%) patients.

Based on the results of testing on the Beck scale, depression of varying severity was detected in 49 patients (76.5%) of the main group, among them mild depression in 28 people (43.8%), moderate depression in 13 people (20.3%), severe depression in 8 people (12.5%).

Based on the results of testing on the hospital scale of anxiety and depression, psycho-emotional disorders were not detected in 31 patients (48.4%), subclinically severe anxiety was diagnosed in 11 people (17.2%), subclinical depression in 20 people (32%) , clinically pronounced anxiety in 22 people (34.4%), clinically pronounced depression in 13 people (19.6%). According to the results of neuropsychological testing, no cognitive and psycho-emotional disorders were revealed in patients of the control group..

A significant decrease in cognitive functions was revealed for all tests used in patients of the main group compared with controls (p <0.001). Significant differences were recorded for the MMSE test, a battery of frontal dysfunction tests.

When assessing the emotional status according to the methods for determining the level of anxiety and depression: the hospital anxiety and depression scale (HADS), Beck's depression questionnaire, significant differences were also obtained in the study groups (p <0.001).

Based on the data of the performed correlation analysis, significant weak correlations (p <0.05) were revealed between the severity of anxiety and depression and indicators of cognitive functions for all tests used, excluding the MMSE scale (anxiety and depression with FAB r = - 0.228; r = - 0.198 respectively; with the clock drawing test r = - 0.234; with the "5 words" test r = - 0.269; with the verbal fluency test r = - 0.366).

CONCLUSION

Thus, after suffering a new coronavirus infection, middle-aged men are characterized by a moderate decrease in attention function, regulatory function, visual-spatial function with sufficiently intact memory and speech function.

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