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119814**Predictors of severe outcome of COVID-19: A retrospective single-center clinical study in the Republic of Dagestan, Russia**

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Background and aims

COVID-19 is a rapidly emerging respiratory disease caused by SARS-CoV-2. Numerous studies have demonstrated that patients with COVID-19 may develop neurological complications. Despite this, the available data on the clinical characteristics of affected patients remain limited. The purpose of the study was to present the clinical manifestations and predictors of severe outcome of COVID-19 patients examined outpatiently at the Diagnostic Center of the Republic of Dagestan, Russia.

Methods

A retrospective single-center study of the 175 patients with confirmed COVID-19 was conducted from 1st May 2020 to 30th June 2020. Epidemiological, demographic, clinical, laboratory and radiological data were collected and analyzed. All patients were divided into 4 groups based on their chest CT scans: CT-0 - no evidence of pneumonia, CT-1 <25% involvement, CT-2 - 25 to 50%, CT-3 - 50 to 75%, CT-4 > 75% involvement.

Results

175 COVID-19 patients were enrolled during the study period. The mean age was 49.8 ± 12.3 years. Female was the dominant sex (64%). The leading neurological signs were fatigue (81.2%), headache (64.6%), anosmia/ageusia (54.8%/52.0%), anxiety/depression (58.8%/57.7%). A comparative analysis revealed no significant differences in the prevalence of neurological symptoms in patients with different severity of lung involvement. Older age, female sex and comorbidity - obesity, arterial hypertension and diabetes mellitus were estimated as higher risk factors for severe form.

Conclusions

The first Russian retrospective study of COVID-19 adult patients was presented. There were no patients in our cohort with a new-onset neurologic event. The main neurological manifestations were comparable in frequency to those reported in the literature.

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119815**Neuron specific enolase in a SARS CoV2 patient**

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Background and aims

Neuron-specific enolase (NSE) is a dimeric, intracellular, glycolytic enzyme, which is released after stroke, cardiac arrest, traumatic brain injury. Serial assessment of its level may help in identification of patients at risk of poor outcomes, in decision making on intensive care, rehabilitation or palliative treatments.

Methods

An 80 years-old male patient came to our observation for confusion. At past case history, chronic coronary syndrome in aortic-coronary by-pass, mild-moderate mitral failure, paroxysmal atrial fibrillation, pulmonary emphysema, type II diabetes mellitus, recent SARS CoV2 were reported.

Results

Level of NSE was high (30.8 ng/ml). Episodes of O2 saturation below 90%, decreased lymphocyte absolute counts and g globulins were still present. IgM and IgG titers and nasopharyngeal swab were negative. Electroencephalogram showed dysrhythmia, with diffuse slow waves. Chronic cerebrovascular disease was evident at neuroimaging.

Conclusions

Our observations confirm our previous finding on worst outcomes after CoV2 infection in immunodepressed patients with comorbidities. We highlight that NSE may be a useful marker to assess the clinical course in anoxic encephalopathy. However, it is dependent on the ratio between neuronal and glial cells. Low levels do not rule out ongoing damage. In elderly patients, S100, a calcium-binding, astroglial protein may be more consistent. On the other hand, the brief half-life of the latter (25 min) compared to the longer half-life of former marker (30 hrs) may limit detection. Both may implement clinical and radiological findings, especially in ventilated and sedated patients. Lastly, they may add further information for ethical, social and legal issues.

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119816**Nicotine, cytokine storms and COVID-19**

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Background and aims

The association of smoking with chronic obstructive pulmonary disease and cardiovascular disease puts smokers at increased risk of complications of COVID-19. Counterintuitively perhaps, several reports have found reduced prevalence of current smokers among patients admitted to hospital with COVID-19, suggesting a protective effect of active smoking against severe COVID-19.

Methods

We report on a frail elderly man with a longstanding history of bipolar affective disorder associated with heavy smoking, alcohol dependence and multiple medical co-morbidities, including chronic obstructive airways disease and recurrent pulmonary sepsis, who