Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

119802
COVID-19 infection, depression, and ischemic stroke

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Background and aims

Many recent studies have shown increasing evidence connecting COVID-19 infection with acute thrombotic events, and in particular with ischemic strokes. There are several theories regarding this association, such as alterations in lipid metabolism or platelet aggregation, injury of the endothelial cells, or massive cytokine release, leading to cytokine storm and hyper coagulation. The biological and social consequences of this infection can also lead to psychiatric afflictions, most frequently anxiety and depression being described. This study aims to highlight the possible connections between COVID-19 infection, depression, and ischemic stroke.

Methods

We observed the case of a 48-year-old patient who presented with left hemibody paresthesia and motor deficit on the left side of the body. Two months prior, he presented a COVID-19 infection, followed by a major depressive episode. Clinical, neurological, and neuroimaging examinations were performed to establish the diagnostic. We also analyzed the existing risk factors and possible etiologies. The patient had a history of hypertension, hypercholesterolemia, obesity, and smoking.

Results

Following investigations, the diagnosis of acute ischemic thalamic stroke was established. Although there have been more risk factors identified, a causative event that led to the decompensation of these conditions was searched. The post-COVID-19 infection status and recent depression episode represent reasonable presumptive causal factors.

Conclusions

The relation between the acute ischemic thalamic stroke, previous COVID-19 infection, and subsequent depressive episode was considered to be plausible.

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Role of an intensive inpatient rehabilitation program in functional recovery after guillain-barre' Syndrome related or not to COVID-19

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Background and aims

Several cases of Guillain-Barre Syndrome (GBS) have been related to COVID-19, without data on the functional outcome after intensive rehabilitation. We aimed at presenting the results of rehabilitation in patients with COVID-19-related or not GBS.

Methods

All the patients admitted in 2020 for GBS in a rehabilitation facility have been evaluated with Barthel index (BI), GBS-Disability Scale (GBS-DS) and Medical Research Scale-Sum Score (MRC-ss) at admission and at discharge, after an intensive rehabilitation program.

Results

In 2020, three COVID-19-related (3F; mean age 72.33 years) and five non-COVID-19-GBS (2M/3F; mean age 73.2 years) were admitted. In non-COVID-19-GBS a high Acute Motor Axonal Neuropathy (AMAN) prevalence was detected [4 AMAN, 1 AMAN/Acute Inflammatory Demyelinating Polyradiculopathy (AIDP) mixed form]. Non-COVID-19-GBS experienced a high complications rate, with two deaths due to sepsis. At discharge, BI ameliorated in the three survivors (0–65, 35–70; 5–20) as MRC-ss (15–38; 43–52; 33–48). GBS-DS decreased in only two cases (4-2; 4-2; 4-4), with one patient regaining independent walking. COVID-19-GBS (2 AIDP, 1 AMAN) did not experience complications. Two AIDP patients recovered autonomous walking at discharge, with BI (25–95; 35–85) and MRC-ss (48–60; 36–59) rising, and GBS-DS decreasing (3–2; 3–2). In the only AMAN form, a light augment in BI (5–15) and MRC-ss (36–40) was noticeable, without GBS-DS reduction GBS-DS (4-4).

Conclusions

COVID-19-related GBS had a better clinical outcome than non-COVID-19-GBS. However, epidemiological considerations cannot be deemed due to the small sample. More follow-up studies are warranted for the functional recovery evaluation of these patients.

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Prolonged cognitive deficits after COVID-19

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Background and aims

Cognitive deficits are a common complication of COVID-19. Multiple factors associated with the illness and its treatment may contribute to cognitive deficits. In this study, we analysed neuropsychological data from a cohort of patients recovering from COVID-19 hospitalization who required different types of oxygen/ventilation therapy.

Methods

We recruited 77 (aged 22–77 years; 57 males) patients hospitalized for complications of SARS-CoV-2 infection in different

COVID units, which had required different oxygen (O_2) therapy (no-O_2 = 9, low-flow O_2 = 35, CPAP = 26, intubation = 7). Participants underwent neuropsychological testing with the Brief Repeatable Battery of Neuropsychological Tests (BRB-NT) about 5 months after hospital discharge.

Results

Of all participants, 64% showed deficits in at least one test of the BRB-NT; the most affected functions were processing speed (41.6% of participants) and delayed verbal recall (27.3%).

O_2 therapy with CPAP was associated with worse verbal memory performance ($p = 0.033$), compared to no-O_2 therapy. Attention and processing speed deficits were not associated with type of O_2 therapy ($p = 0.889$), but correlated with thromboplastin (aPTT) ratio ($r_s = 0.298$, $p = 0.019$).

Worse delayed visuospatial recall was associated with hyposmia ($p = 0.011$) and dysgeusia ($p = 0.035$).

Conclusions

Cognitive deficits are frequent, persistent, and disabling even for five months following hospitalization for COVID-19. Therefore, neurological and neuropsychological monitoring should be put in place after discharge to help mitigate the effects of these symptoms, improving the quality of life of COVID-19 survivors.

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The neurological manifestations of COVID19, the most extensive review of published case reports

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Background and aims

The spectrum of neurological involvement in COVID-19 has been rapidly reported during this pandemic in order to support fellow colleagues in prompt identification and management. This is the most extensive review of published case reports of neurological manifestations of COVID19. The aim of this study is to assess the frequency of neurological manifestations and complications, identify the neurodiagnostic findings, and compare these aspects between severe and non-severe COVID-19 cases.

Methods

A systematic search of PubMed, Scopus and Google Scholar databases was conducted for studies published between the 1st of January 2020 and March 2021. We included all published studies that were English or translated to English, patients from all demographics with a confirmed COVID19 infection (either non-severe or severe) and had sufficiently documented investigation efforts to reach a diagnosis of a neurological manifestations. The main outcomes of the study were to identify the frequency and nature of neurological manifestations and complications, and the neuro-diagnostic findings in COVID-19 patients.

Results

389 articles were included with a pooled sample size of 45,340 patients. The mean age was 55 years and 63% were males. The most common neurological manifestations were a combination of minor symptoms such as Myalgia, taste and smell impairment, headache, dizziness and most prominent major manifestations were vascular episodes, encephalopathy, seizures, neuropathies and Gullian Barre Syndrome.

Conclusions

Neurological involvement is common in COVID-19 patients (whether non-severe or severe). Prompt identificaiton and managment of these cases would improve outcome and decrease morbidity.

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Critical illness neuropathy in severe COVID-19

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Background and aims

Neurological complications of COVID-19 have received a growing attention; few studies have described neurophysiological findings in COVID patients during their stay in Intensive Care Units (ICUs). We assessed the presence of either critical illness neuropathy (CIP) or myopathy (CIM) in ICU patients. The mean time of hospitalization in ICU was 17.2 ± 4.1 days.

Methods

Patients underwent a bilateral examination of the median, ulnar, deep peroneal and tibial motor nerves and of the median, ulnar, radial and sural sensory nerves. F-waves were recorded from abductor hallucis and abductor digiti minimi muscles. Needle electromyography (EMG) was performed for distal and proximal muscles. Direct Muscle Stimulation (DMS) was applied to the deltoid and tibialis anterior; peak to peak amplitudes and onset latencies of the responses evoked by DMS (DMS_{amp}, DMS_{lat}) or by motor nerve stimulation (MNS_{amp}, MNS_{lat}) were compared. The ratio MNS_{amp} to DMS_{amp} (NMR) and the MNS_{lat} to DMS_{lat} difference (NMD) were evaluated.

Results

Nerve conduction studies showed an axonal neurogenic pattern, with low SAPs and CMAPs amplitudes, as confirmed by needle EMG.