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119824**Status epilepticus and COVID-19: A systematic review**

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Background and aims

Among the symptoms included in the SARS-CoV-2 infection-related coronavirus Disease (COVID-19), neurological manifestations have been frequently reported. In this systematic review, we summarized the available data on clinical features, diagnosis, and therapy of COVID-19-related Status Epilepticus (SE)

Methods

We performed a systematic search of the literature to identify data on demographics, clinical, neurophysiological, and neuro radiological data of patients with COVID-19 related-SE. The following electronic databases and data sources were systematically searched: MEDLINE (accessed through PubMed), EMBASE, and Google Scholar (from December 2019 to January 2021). In all databases we used the following search strategy: ("epileptic state" OR "epileptic state") AND ("coronavirus disease 2019" OR "coronavirus disease 2019"). We included all studies reporting cases of SE in the context of COVID-19 syndrome in patients with or without a previous history of epilepsy, published in English, and reporting individual patient data. Non-peer reviewed papers were excluded. We used regression models (linear or logistic) with a stepwise forward method to identify features associated with mortality or severity of SE.

Results

Thirty-nine articles were included with a total of 47 cases of SE associated with COVID-19. Age, time between the acute respiratory phase of SARS-CoV-2 infection and SE onset, and hospitalization correlated with a higher SE severity as assessed by quantitative validated scales.

Conclusions

SE can be a neurological manifestation of SARS-CoV-2 infection. Although a possible association between SE and COVID-19 has been reported, the exact mechanisms are still not fully understood. Systemic inflammatory syndrome due to cytokine release could play a role in COVID-19 related SE.

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119825**Impact of COVID-19 pandemic on incidence of health-care associated infections in neurology intensive care unit (ICU) and its associated mortality – A retrospective cohort study**

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Background and aims

Health care-associated infections (HCAI) are leading cause of mortality in Intensive Care Unit (ICU). The coronavirus disease 2019 (COVID-19) pandemic has led to mandatory use of masks and personal protective equipment (PPEs) in addition to standard infection control practices. This may additionally lead to benefit in the decrease of HCAI besides decreased risk of transmission of COVID-19. Aim: To compare the incidence of HCAIs and in-hospital mortality among patients admitted in the neurology ICU during the COVID-19 pandemic period and pre-pandemic period.

Methods

In a retrospective cohort study design, patients admitted to the Neurology ICU during the initial five months of the Covid-19 pandemic period (1st April - 31st August 2020) and the same calendar months of the prior year in the pre-pandemic (1st April - 31st August 2019) period were included. The prevalence of HCAIs and in-hospital mortality in these groups was compared.

Results

Forty-seven patients in the pandemic period and 52 patients in the pre-pandemic period were admitted in the Neurology ICU during the study period. The prevalence of HCAI was 72.3% in the pandemic period and 69.2% in the pre-pandemic period (p value: 0.73). The median person days of antibiotics during the pandemic period was 49 (31–71) days as compared to 60.5 (25–110) days during the pre-pandemic period (p value: 0.41). The mortality during the pandemic and pre-pandemic period was 27.6% and 40.4% respectively (p value: 0.18).

Conclusions

The augmentation of infection control practices prevented the spread of Covid-19 but could not provide additional improvement in HCAI prevention.

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119826**Neurological complications of COVID-19: A monocentric experience of a neurological outpatient clinic**

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Background and aims

Since the onset of the COVID-19 pandemic, numerous central and peripheral nervous system complications related to the virus have been observed. Here we present a case series of neurological

complications from our outpatient clinic dedicated to patients with previous SARS-CoV-2 infection.

Methods

We set up a “Neuro-COVID Outpatient Clinic” in November 2020 for the management of patients referred by the Pneumology Unit of our Hospital and who complained of neurological symptoms.

Results

Up to the date (April 2021) from a total number of 319 patients who referred to the Pneumology Clinic, we have collected data from 62 patients (31 female) with a mean age of 59 years (18–80 years). Of these, 53 patients were previously admitted to our ICU or to the Pneumology Department. The most frequent complications (27) were those related to peripheral nervous system including plexopathies, critical ill neuropathies, and isolated cranial nerve palsies. Six patients developed previously unreported headache and 5 dizziness, while 16 patients complained of memory impairment. A patient developed symptoms of Myasthenia Gravis with anti-AchR antibodies. We observed two cases of myoclonus and cerebellar ataxia. An 18-year-old patient suffered of ischemic stroke in the absence of other risk factors. Twenty-two patients developed anosmia, and 8 of these still present anosmia after 6 months from the infection.

Conclusions

Neurological complications related to SARS-CoV-2 infection are far from rare. Some of these are to be referred to the long hospitalization but others could be the consequence of parainfectious or postinfectious mechanisms.

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Persistent aura-like visual phenomenon as the unique manifestation of COVID-19 post-infectious white matter lesion: A case report

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Background and aims

A visual aura lasting longer than 1 week is defined as persistent. Cortical spreading depression (CSD), a propagating wave of neuronal depolarization, followed by long lasting suppression of cortical activity, is the electrophysiological phenomenon thought to underlie migraine visual aura. Disorders which alter the state of neuronal excitability may increase brain's susceptibility to CSD by lowering the threshold for neuronal depolarization.

Methods

A 29-year-old woman was admitted to our department reporting subacute onset, three weeks before, of persistent vision of shining, colored lights in right visual hemifield. Two weeks before the onset of symptoms she was diagnosed with asymptomatic COVID-19. Medical history was remarkable for migraine with aura.

Results

Neurological examination and blood tests were unremarkable. Computerized campimetry showed decreased retinal sensitivity in right visual hemifield. Brain and spinal cord MRI showed a unique, round, post-contrast enhancing lesion in left peritrigonal white

matter (involving left optic radiation). CSF analysis showed type3 oligoclonal bands (evidence of systemic and intrathecal immune activation). EEG showed left temporo-occipital (sometimes generalized) sharp waves. Neither a trial with diazepam nor a treatment with IV methylprednisolone were effective on visual symptoms. She started lamotrigine (100 mg/daily) with progressive improvement of symptoms.

Conclusions

This case showed how an acquired structural abnormality, such as an inflammatory post-infectious white matter lesion, can alter the state of neuronal excitability and increase brain's susceptibility to cortical depolarization, thus manifesting with positive symptoms, i.e. an aura-like persistent phenomenon. Hence, any change in aura pattern and frequency, even in migraineurs, requires exclusion of secondary forms.

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Neuropsychiatric symptoms in post COVID-19

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Background and aims

Describe the neuropsychiatric symptoms in 300 patients requiring hospitalization surviving at the largest COVID-19 care center 3 months after discharge.

Methods

An exhaustive neurological evaluation was performed on 300 patients 3 months after hospital discharge following COVID-19 at the national institute of respiratory diseases in Mexico City, a COVID-only institution for the time being. All patients underwent a neurological symptom survey, complete neurological examination, cognitive evaluation with MoCA and MMSE screening tests, and some laboratory tests, by 2 expert neurologists. The patients were stratified as follows: mild COVID here those who only required the use of nasal prongs during hospitalization, moderate COVID those who required high oxygen flows with the use of a reservoir mask, high-flow nasal prongs, and severe COVID those who required advanced management of the airway during hospitalization.

Results

The mean age was 58 years +/- 13 years, 69% of the patients were male, 15% were health personnel. No comorbidity was statistically significant between groups. The main manifestations are hyposmia, dysgeusia, dizziness, vertigo, headache, myopathic pain, affective symptoms, insomnia, cognitive complaint, and arthralgias, with a statistically significant difference in sensorimotor neuropathy and neuropathic tremor in severe patients. Mean MoCA scores in mild patients were 27 while in moderate and severe patients 25 points. MMSE scores were 28 in mild patients, 27 in moderate to severe patients.

Conclusions

Adequate follow-up of post-covid patients is needed for symptomatic surveillance and to prevent long-term sequelae.

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