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Neurological involvement in COVID-19 disease, data from a small community hospital

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Background and aims

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is focusing primarily on respiratory complications. A comprehensive review of the neurological disorders reported during the current COVID-19 pandemic demonstrates that infection affects the central nervous system (CNS), the peripheral nervous system (PNS) and the muscle.

Methods

In this retrospective, observational study, we enrolled 748 patients, with laboratory confirmed diagnosis of severe acute respiratory syndrome from coronavirus 2 (SARS-CoV-2) infection. Data were collected from March to May 2020 and from October to April 2021 and were extracted from electronic medical records. Neurological symptoms included central nervous system headache, dizziness, impaired consciousness, acute cerebrovascular disease, and epilepsy, peripheral nervous system symptoms, hypoguesia, hyposmia, hypopsia, and neuralgia, and skeletal muscle injury. Data of all neurological symptoms were checked by a multidisciplinary team.

Results

814 patients admitted to the Urgency Medicine ward 284 were severe and 530 were non-severe patients. Severe patients were older, and showed less typical symptoms. 633, 78% patients had neurologic manifestations. Studies showed that 24 patients had stroke, 2 Myasthenic syndrome, 2 Guillaine Barre, 1 encephalitis.

Conclusions

The SARS-CoV-2 pandemic has implications for all areas of medicine. SARS-CoV-2 infection is associated with an increased incidence of neurological manifestations. Involvement of the nervous system carries a poor prognosis. The pathobiology of these neuroinvasive viruses is still incompletely known, and it is therefore important to explore the impact of CoV infections on the nervous system.

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COVID-19 presenting as neurological manifestations, rare cases in neurological department

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Background and aims

Coronavirus disease 2019 caused by severe acute respiratory syndrome coronavirus 2 infection, is associated with coagulopathy causing venous and arterial thrombosis. SARS-CoV-2 infection is linked to a prothrombotic state causing venous and arterial thromboembolism and elevated D-dimer levels.

Methods

A 50-year-old male taking warfarin for (AF), presented 2 days after COVID-19 symptom onset (ARDS) with acute confusion, incoordination and drowsiness; GG pattern was reported in HRCT, CT brain confirmed acute large left cerebellar and left occipital infarcts D-dimer was increased and the (INR) 3.6 at the time of stroke symptoms. A 67-year-old man with hypertension, presented with dysartria and left hemiparesis. MRI brain showed an acute right MCA infarct. D-dimer was 27,000 μg/L. A days following admission, he developed respiratory symptoms. RT-PCR confirmed SARS-CoV-2 infection.

Results

The 45-year-old patient had severe muscle pain and had a mild cough and low grade fever. Groud glass was reported in HRCT tests and mild lymphopenic but increased enzyme creatinine kinase levels (4,500) were significant improved It lasted for two consecutive weeks 25-year-old previously healthy female was admitted with generalized tonic-clonic seizure in our hospital. The patient complained of dry cough 2 days before the admission. Brain MRI was normal and chest CT revealed focal ground-glass opacities. The respiratory specimen was positive for COVID-19 using real-time PCR assay. The symptoms of the patient improved with anticonvulsive and antiviral medications.

Conclusions

Severe COVID-19 is associated with proinflammatory cytokines which induce endothelial and mononuclear cell activation with expression of tissue factor leading to coagulation activation and thrombin generation.

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119896

Neurological presentation of COVID-19: Experience from a tertiary care hospital of Bangladesh

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Background and aims

Neurological manifestations of COVID-19 are being recognized day by day although predominant presentation is of respiratory illness. Understanding of impact of the virus on nervous system is important for selection and evolution of treatment now and in the future. The aim of the study was to describe the manifestations of COVID-19 affecting nervous system in a tertiary care hospital of Bangladesh.

Methods

This cross-sectional study was carried out in Department of Neurology, (BIRDEM) General Hospital from March, 2020 to October, 2020. Total forty patients who were admitted under neurology department were included in the study. Clinical syndromes associated with COVID-19 were classified broadly as a cerebrovascular event, altered mental status and peripheral nervous system disorders.

Results

Median age of the patients was 58.6 years (range 22–73). Among those, 26 (65%) were male and 14 (35%) were female. Twenty two (55%) of 40 patients presented with cerebrovascular event, of whom 15 (68%) had an ischaemic stroke, 5 (23%) an intracerebral haemorrhage. 2 (9%) patients were diagnosed as cerebral venous sinus thrombosis. Apart from cerebrovascular events, 14 (35%) of 40 patients presented with altered mental status, comprising 9 (64%) patients with unspecified encephalopathy and 5 (36%) patients with encephalitis. Four (10%) patients were diagnosed as peripheral
nervous system disorder among those 2 (50%) as Guillain-Barré syndrome (GBS) and 2 (50%) as Bell’s palsy.

Conclusions
We have found cerebrovascular disease, encephalopathy and peripheral nervous system disorder as presentation of COVID-19 in our study. Further nationwide study is needed to quantify the association and disease burden.

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Cerebral venous sinus thrombosis and coronavirus infection (COVID-19): A multicenter Asian study
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Background and aims
Coronavirus disease 2019 (COVID-19) has an increased propensity for systemic hypercoagulability and thromboembolism. An increase in cerebrovascular diseases has also been reported among these patients. The objective of the present study is to identify risk factors, presentation, and outcome of CVST in COVID-19 patients.

Methods
It is a multicenter and multinational prospective observational study. Ten centers in four countries, Pakistan, Egypt, Singapore, and the United Arab Emirates, participated in the study that included patients (aged > 18 years) with symptomatic CVST and recent COVID-19 infection.

Results
Twenty patients (70% men) were included. Mean age was 42.4 years. Headache (85%) and seizures (65%) were the common neurological features with a mean admission GCS of 13. Respiratory symptoms were absent in 45% of the patients. The most common MRI finding was ischemia (65%) followed by hemorrhage (20%). Superior sagittal sinus (65%) was the most common site for thrombosis. Acute inflammatory markers were raised with abnormal serum D-dimer (87.5%), erythrocyte sedimentation rate (68%), and C-reactive protein (47%) levels. Homocysteine was elevated in half of the cases. Mortality rate was high (20%). A good functional outcome was seen in the surviving patients with a mean discharge mRS score of 1.3.

Conclusions
COVID-19 patients are at high risk for CVST secondary to the high incidence of systemic thromboembolism. A low threshold for brain imaging should be kept for COVID-19 patients presenting with headache or seizures. Presuming a high prevalence of asymptomatic cases, all patients with newly diagnosed CVST should undergo testing for COVID-19 infection.

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Neurological symptoms in patients with COVID-19 as manifestation of severity and prognosis, the case of anosmia and dysgeusia
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Background and aims
With the COVID-19 pandemic, attempts have been made to use various tools for prognostic purposes, however, the clinical manifestations that can act positively or negatively have not been taken into account.

Methods
Descriptive and retrospective study carried out from April to June 2020 in Veracruz, Mexico, which analyzes adult patients with a diagnosis of COVID-19 pneumonia confirmed, in which the most prevalent neurological symptoms are evaluated, in order to find symptoms that act as severity and prognosis factors.

Results
We analyzed 100 patients with COVID-19 pneumonia; 46 women and 54 men, with a mean age of 49.4 (± 19.3). The most frequent neurological symptoms were: headache (83%), anosmia (75%), dysgeusia (75%), myalgia (68%) and somnolence (50%). Somnolence and anosmia were more frequent in severe pneumonia than in mild cases, all patients with newly diagnosed CVST should undergo testing for COVID-19 infection.

Conclusions
Most surveyed neurology patients had positive attitudes towards COVID-19 pandemic. Also, the negative impacts of the pandemic on patients with neurological illnesses in Jordan were evident and diverse.

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119898
Knowledge, attitudes, and impact of COVID-19 pandemic among neurology patients in Jordan: A cross-sectional study
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Background and aims
The impacts of COVID-19 pandemic on health services offered to patients with non-communicable diseases, including chronic neurological illnesses, are diverse and universal. This study aims to investigate these impacts on neurology patients in Jordan and assess their knowledge and attitudes towards the pandemic.

Methods
We administered a paper-based, self-reported survey to neurology outpatients at a community hospital in the north of Jordan. The survey included demographics as well as disease-specific questions related to multiple sclerosis, epilepsy and migraine or tension headache. Knowledge and attitude towards the COVID-19 pandemic were also assessed.

Results
Most respondents had positive attitudes towards COVID-19 pandemic, with 96% reporting they believed in the seriousness of the pandemic and adhered to prevention measures. Nearly 97% resorted to the internet and media outlets for medical information about the pandemic. About one in five clinic visitors had their appointments delayed due to interruption of health services. A similar portion of patients with MS, epilepsy and migraine or tension headache reported medication interruptions during the pandemic. One in two patients reported new events or worsening illness since the start of the pandemic, and sleep disturbances were reported by nearly one in three patients who had epilepsy or headache.

Conclusions
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