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Results

307 referrals (235 patients) were presented, with a rise in cases following the pandemic onset. Cases were broadly classified under neuroinflammatory, antibody-associated, neuro-infection, neuro-COVID, and mimics. Outcomes included diagnostic clarification, recommendations for specialised (often novel) diagnostics or treatment, and transfer of cases to specialist centres. Strong positive feedback from attendees confirmed the high clinical and educational benefit.

Conclusions

Patients with suspected encephalitis need specialised multi-disciplinary input, to ensure all possible differential diagnoses are considered. This facility is invaluable to physicians managing complex, unwell patients, including providing access and suggestions to novel diagnostics and therapies, and should be made available more widely. International cooperation by virtual technology should be encouraged.

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117802

Anti-brain protein autoantibodies in parenchymal neurocysticercosis

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Background and aims

Neurocysticercosis (NC) is the most common parasite infection of the CNS worldwide, and a main cause of seizures and epilepsy in endemic countries. The objective of this work has been to screen for the presence of autoantibodies to brain proteins in the cerebrospinal fluid (CSF) of clinically defined NC patients, representative of the two main clinical forms of NC, extraparenchymal (EP-NC) and parenchymal (P-NC) invasion.

Methods

Cerebrospinal fluid (CSF) samples were taken from 21 patients with NC and from 15 control neurological patients diagnosed as NC negative, were collected from January 2015 to February 2016. Both control and experimental CSF were assayed in the HP10 Ag which detects a secreted glycoprotein of viable metacestodes.

Results

Using quantitative immunoblot methodology, we demonstrate the presence of autoantibodies to brain proteins in CSF from EP-NC, but not P-NC, patients. Nine corresponding proteins autoantigens were additionally identified by mass spectroscopy.

Conclusions

There was striking correlation between the level of autoantibodies and the levels of the secreted metacestode glycoprotein HP-10, suggesting that the level of stimulation of the autoantibody response may be a function of the number of viable parasites.

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Encephalitis during first year of SARS-COV-2 pandemic– first results of the European ENCOVID registry

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Background and aims

Objective: Several preclinical and clinical investigations have argued for nervous system involvement in SARS-CoV-2 infection. No data about clinical, imaging and biomarkers presentations as well as long-term outcomes are available for SARS-CoV-2 encephalitis in comparison with infectious and autoimmune encephalitis.

Methods

The ENCOVID European registry included patients with probable or definite diagnosis of encephalitis with and without SARS-CoV-2 infection admitted for hospitalization in the European recruiting centers between February 1st 2020 and March 30th, 2021. Each patient underwent a standardized assessment including full infectious screening, CSF, EEG, MRI data. Clinical presentation and laboratory markers, severity of COVID-19 disease, response to treatment and outcomes were recorded.

Results

Results – Out of 155 cases screened, forty-five cases of encephalitis positive for SARS-CoV-2 infection and 63 without COVID-19 with full available data were included. SARS-CoV-2 encephalitis exhibited common presentation with aphasia and dysarthria compared to non-COVID- encephalitis and exhibited

higher prevalence of patients with normal MRI but mild hyperproteinorrachia/pleocytosis. Most SARS-CoV-2 cases appeared during the onset of COVID-19 and exhibited different response to treatment and long-term outcomes compared to non COVID encephalitis.

Conclusions

Conclusions –The registry identified a wide spectrum of encephalitis associated with COVID19 infection, with clinical characteristics and course different from classical infectious and autoimmune encephalitis. Biomarkers studies are warranted in order to evaluate the specific inflammatory pathways associated with SARS-Cov-2 encephalitis.

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Neurological disorders associated with COVID-19 infection: An Italian multi-center cohort study (NEURO-COVID)

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Background and aims

A variety of neurological disorders has been reported as presentations or complications of COVID-19 infection. The NEURO-COVID study is a multi-center cohort study of neurological disorders

associated with COVID-19 conducted in 51 centers in Italy, sponsored by the Italian Society of Neurology (SIN).

Methods

We present an interim analysis of hospitalized adult patients with COVID-19 infection, defined by a positive SARS-CoV-2 test independently from clinical severity, and concomitant newly diagnosed neurological disorders. Patients were recruited from March 1, 2020 to March 26, 2021 from 18 centers and followed-up prospectively for 6 months. Follow-up data at 6 months are currently ongoing and will be available for the WCN 2021 congress.

Results

904 patients with confirmed COVID-19 infection and concomitant newly diagnosed neurological disorders were recruited. The median age was 68 years (IQR 56–78) and 57.5% were males. Severe acute respiratory syndrome occurred in 35.9%. The most common new neurological diagnoses were hypogeusia (21.1%), hyposmia (20.5%), acute ischemic stroke (19.6%), delirium (14.4%), headache (12.3%), cognitive impairment (11.3%), abnormal behaviour or psychosis (8.9%), seizures (5.9%), Guillain-Barré syndrome (5.1%), severe encephalopathy with stupor or coma (3.7%), dizziness (3.0%), encephalitis (2.3%) and haemorrhagic stroke (2.3%). Overall, the onset of neurological disorders occurred during the presymptomatic-asymptomatic phase in 45.9%, during the acute respiratory illness in 37.5% and after recovery in 16.6%. In-hospital mortality was 12.2% and was mostly due to COVID-related respiratory failure (9.1%).

Conclusions

A wide spectrum of treatable neurological disorders are associated with COVID-19 infection. Most cases occur in late middle-aged adults with mild or severe respiratory syndrome.

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Brainstem involvement in COVID-19: A neuropathological and neurophysiological study

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Background and aims

Whilst respiratory failure in COVID-19 arises from severe interstitial lung involvement, SARS-CoV-2 likely spreads also through the nervous system in a prion-like way, possibly reaching respiratory centers in the brainstem. Here, we evaluated neuropathologically, neurophysiologically and clinically the brainstem involvement in COVID-19.

Methods

Neuropathological data were acquired from two patients died for COVID-19 and two patients COVID-19 negative; neuronal damage and the number of corpora amylacea (CA)/mm² were assessed. The expression of the "nuclear protein" of SARS-Cov-2 was also evaluated. To clarify whether neuropathological findings had a