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Commentary

Consider SARS-CoV-2 in patients with diarrhoea, vomiting, thrombocytopenia, polyradiculitis, and seizures

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Letter to the editor

We read with interest the article by Hussain et al. about a 22-year-old female with initially febrile diarrhoea and vomiting who developed generalised purpura, seizures, and muscle weakness on from day 6 of the progressive disease [1]. In the third week of illness she became disorientated, confused, and mutistic [1]. She developed renal insufficiency [1]. After detailed examination, she was diagnosed with thrombotic thrombocytopenic purpura (TTP) and Guillain-Barre syndrome (GBS), subtype acute, inflammatory demyelinating neuropathy (AIDP) [1]. She benefited from symptomatic treatment, anti-seizure drugs (ASDs), transient hemodialysis, and plasmapheresis [1]. The study is appealing but carries limitations that are of concern and should be discussed.

The main limitation of the study is that the patient was not tested for SARS-CoV-2 by PCR [1]. It is known that SARS-CoV-2 can manifest itself not only in the lungs but also in extra-pulmonary organs, including the intestines, at onset of the disease [2]. In a recent study from India investigating 956 COVID-19 patients, it was found that gastro-intestinal manifestations precede pulmonary manifestations in the majority of patients [3]. Thrombocytopenia has also been described as a common manifestation of a SARS-CoV-2 infection, which presumably results from the immune response against the virus, is held responsible for bleeding or thrombosis in COVID-19 patients, and can persist [4].

A second limitation is that no multimodal MRI with contrast medium was used to clarify the cause of seizures, disorientation, and mutism [1]. Because thrombocytopenia can be associated with venous sinus thrombosis (VST), it is crucial to clarify whether thrombocytopenia has resulted in VST, which is commonly associated with cerebral ischemia, bleeding, and seizures [5]. VST can be most elegantly diagnosed by MR-venography (MRV) and is treated with therapeutic heparinisation.

A third limitation is that encephalitis was not considered to explain seizures, and altered mental status with a Glasgow Coma Score (GCS) of 6/15 [1]. Diagnosing encephalitis is based on clinical presentation, MRI, and cerebrospinal fluid (CSF) findings. Particularly, in the presence of immune encephalitis, CSF tests may be normal or show only elevated CSF protein, as in the index patient. Contrast-enhanced cerebral MRI may show T1-hyperintense lesions or be normal. In this context, the determination of autoantibodies associated with immune encephalitis (e.g. NMDA, GlyR, LGI1, CASPR2, DPPX, etc.) in the CSF is missing. MRI can also be helpful to proving or disproving brainstem Bickerstaff encephalitis (BBE), which is occasionally associated with GBS.

Another limitation of the study is that the cause of renal dysfunction was not clarified. Although a hemolytic uremic syndrome (HUS) was considered, this differential diagnosis could not be confirmed. Because lactate-dehydrogenase (LDH) was elevated to 2214 U/l readers should be informed of serum levels of other muscle enzymes, particularly creatine-kinase (CK). Since the patient had seizures, it is important to rule out rhabdomyolysis as the cause of muscle weakness and renal insufficiency. During the hospital stay, was the urine ever cola-coloured or did the patient complain of myalgias?

Overall, the interesting study has limitations that call the results and their interpretation into question. Clarifying these weaknesses would strengthen the conclusions and could improve the study. Patients with impaired consciousness and seizures require extensive work-up until the cause of the central nervous system (CNS) abnormalities are clarified and can be treated.

Ethical approval

Not applicable.

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Abbreviations: AIDP, acute inflammatory demyelinating polyneuropathy; ASD, anti seizure drug; GBS, Guillain Barre syndrome; TTP, thrombotic thrombocytopenic purpura.

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JF and FS contributed equally JF: design, literature search, discussion, first draft, critical comments, final approval.FS: literature search, discussion, critical comments, final approval.

Registration of research studies

Not applicable.

1. Name of the registry:
2. Unique Identifying number or registration ID:
3. Hyperlink to your specific registration (must be publicly accessible and will be checked):

Guarantor

J Finsterer.

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All data are available from the corresponding author.

Compliance with ethics guidelines

This article is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors.

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