Before blaming SARS-CoV-2 for GBS, other causes should be ruled out

We read with interest the article by Parikh *et al*.[1] about a 2.5-year-old female patient who developed progressive, flaccid quadriparesis that resulted in being unable to stand or walk. Work-up revealed positive IgG-antibodies against SARS-CoV-2, demyelinating neuropathy, and dissociation cyto-albumin.[1] Guillain–Barre syndrome (GBS) was diagnosed and intravenous immunoglobulins (IVIG) were given with little benefit.[1] The study is appealing but raises concerns.

We disagree with the diagnosis of acute SARS-CoV-2 infection.[1] The patient tested negative for SARS-CoV-2 in the PCR and the rapid antigen test (RAT).[1] Only neutralizing IgG antibodies were elevated.[1] Given that neutralizing antibodies can persist for months,[2] it cannot be ruled out that SARS-CoV-2 infection may have occurred already weeks or months before the onset of GBS, suggesting a causal relationship between SARS-CoV-2 and GBS rather unlikely. Further arguments against acute SARS-CoV-2 infection are that the history was negative for pulmonary or gastrointestinal infections shortly before the onset of GBS,[1] the lymphocyte count was normal, and no other stigmata of COVID-19 were present.[1] Acute SARS-CoV-2 infections are often associated with lymphopenia.[3]

We disagree with the interpretation of nerve conduction studies as "demyelinating." According to Table 1, nerve conduction velocities in the median, ulnar, peroneal, and tibial nerves were within normal limits.[1] The findings in Table 1 are more suggestive of an axonal lesion;[1] therefore, the diagnosis should be acute, motor, axonal neuropathy (AMAN) rather than acute, inflammatory demyelinating polyneuropathy (AIDP).

We disagree with the statement in the discussion that there were no abnormalities on follow-up.[1] No results of follow-up investigations were given in the case description.[1] The patient was discharged with severe paraparesis (muscular research council [MRC] 2/5 respectively 3/5).[1] We should know the period in which neurological abnormalities have completely disappeared.

Because muscle strength in the lower limbs hardly improved (MRC 2/5 bilaterally at onset, MRC 2/5 respectively 3/5 at discharge), IVIGs can be rated as rather ineffective. We should know if ever plasmapheresis was considered. Additionally, GBS patients who do not respond to treatment should be evaluated for nodopathy.[4] and it should be borne in mind that about one-third of GBS patients have no causative agent.

Because the patient had difficulty sitting down,[1] involvement of the axial muscles cannot be ruled out. Because respiratory muscles are often affected along with the axial muscles, we should be informed if there was any evidence of muscular respiratory insufficiency. Were oxygen saturation and lung function tests within normal limits?

The results of the virus panels are missing.[1] We should know which viral infections have been ruled out. Given that GBS is often triggered by previous viral infections,[5] ruling them all out is imperative. Even in the absence of a gastrointestinal infection, the patient must be tested for antibodies to *Campylobacter jejuni* and *Mycoplasma pneumoniae*.[5]

Overall, the interesting study has limitations that challenge the results and their interpretation. Diagnosing COVID-19 requires a positive PCR. A causal connection between SARS-CoV-2 and GBS can only be established if a temporal connection between the infection and the onset of neurological compromise can be demonstrated.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Ethics approval

Ethics approval was in accordance with ethical guidelines. The study was approved by the institutional review board.

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Conflicts of interest

There are no conflicts of interest.

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