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Commentary

What causes Guillain Barre Syndrome in SARS-CoV-2 Infected if not the Virus?

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With interest we read the article by Mahmoud *et al.* on a systematic review on the incidence of Guillain-Barre syndrome (GBS) in post-COVID patients^[1]. Altogether 32 patients with post-COVID GBS were included^[1]. It was found that only 26 of these patients reported neurological symptoms and that seven patients had cranial nerve involvement^[1]. It was concluded that it is too early to assess whether there is a causal relationship between SARS-CoV-2 and GBS^[1]. The review is excellent, but has limitations that are cause for concerns and should be discussed.

A limitation of the study is that the term “post-COVID” was not defined^[1]. Do the authors mean GBS developing between week 5 and week 12 after a SARS-CoV-2 infection or do they mean GBS developing time-linked within 4 weeks after onset of the viral infection. Knowing the exact definition is crucial not to confuse readers and not mix up the condition with post-COVID syndrome. According to what is reported in the results section, post-COVID means GBS developing within 4 weeks after onset of the viral infection^[1].

Another limitation is that the criteria according to which GBS was diagnosed were not reported. GBS is most commonly diagnosed according to the Brighton criteria^[2]. The Brighton criteria require documentation of “dissociation cytoalbuminique” in the cerebrospinal fluid (CSF) for confirmation of the diagnosis. We should know if truly all 32 included patients had undergone CSF investigations and whether all had elevated CSF protein in the absence of pleocytosis.

Although the search period included articles published with a “publication year 2020 or later”, only 12 articles reporting 32 patients were found eligible for the review. We should know when exactly the search period ended. The number of patients with SARS-CoV-2 related GBS is much larger than mentioned in the index review. In a previous review about SARS-CoV-2 related GBS, 220 patients with SARS-CoV-2 related GBS were reported as per the end of December 2020^[3].

An explanation should be provided why, according to the abstract, six patients did not have any symptoms of GBS. GBS is usually associated with muscle weakness, sensory disturbances, or autonomic disturbances. We should know how GBS was diagnosed in these 6 patients despite the absence of any clinical manifestations. Were these six-patient identified by chance?

A single patient with SARS-CoV-2 related GBS did not receive treatment^[1]. We should know the reason for not treating this particular patient. Did he or she refuse treatment, were symptoms that mild, or was there an early tendency for progressive recovery?

Four of the included patient had diabetes^[1]. We should know how the authors delineated GBS from deterioration of a pre-existing diabetic polyneuropathy. This applies also for the patient with renal insufficiency and the patient with hypothyroidism. Since these conditions can be complicated by polyneuropathy, worsening of polyneuropathy needs to be thoroughly ruled out as a differential of GBS.

Overall, the interesting study has limitations that call the results and their interpretation into question. Addressing these issues would strengthen the conclusions and could improve the status of the study. SARS-CoV-2 infections can definitively be complicated by GBS, and the number of patients with SARS-CoV-2 related GBS is much higher than addressed in the index review.

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Statement of Ethics: a) The study was approved by the institutional review board (responsible: Finsterer J.) at the 4th November 2022. b) Written informed consent was obtained from the patient for publication of the details of their medical case and any accompanying images.

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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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