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Letter to the Editor

Dimensions of SARS-CoV-2 associated Guillain-Barré syndrome

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With interest we read the systematic review by Shaikh et al. about 94 patients with SARS-CoV-2 associated Guillain-Barré syndrome (SC2-GBS) collected from various databases by searching the appropriate literature between 1.1.2020 and 15.9.2020 (Sheikh et al., 2021). Salient observation revealed that mean age was 56 ± 16y, that 65% were males, that paresthesia was the most common symptom present in 49%, that the diagnosis was confirmed by reverse transcriptase polymerase chain reaction (RT-PCR) in 69%, and that 78% received intravenous immunoglobulins (IVIG) (Sheikh et al., 2021). It was concluded that GBS is recognised as one of the many presentations of COVID-19 (Sheikh et al., 2021). The study is appealing but has a number of limitations and raises comments and concerns.

A first limitation of the study is that manifestations of COVID-19 are mixed up with manifestations of GBS. It is unclear, for example, if respiratory symptoms in the 68 patients listed in Table 3 were due to neuromuscular respiratory insufficiency from the GBS or due to COVID-19 pneumonia (Sheikh et al., 2021). It should be made clear in how many patients with respiratory insufficiency listed in Table 4, respiratory insufficiency can be attributed to COVID-19-related acute lung injury/acute respiratory distress syndrome (ALI/ARDS), in how many to GBS-related neuromuscular respiratory failure, and in how many to both etiologies. Similarly, it must be made unambiguous whether the need of invasive or non-invasive respiratory support was due to COVID-19-related ALI/ARDS, due to neuromuscular respiratory failure in GBS, or due to both.

Surprisingly, the study had included only 94 patients although as per the end of December 2020 220 patients with SC2-GBS had been reported (Finsterer and Scorza, 2021). Even after that period, umpteen other SC2-GBS patients had been published. Among the 220 SC2-GBS patients previously reported, the most frequent subtype was acute, inflammatory, demyelinating polyneuropathy (AIDP, $n = 118$), but patients with acute, motor, axonal neuropathy (AMAN, $n = 13$), acute, motor, and sensory, axonal neuropathy (AMSAN, $n = 11$), Miller-Fisher syndrome (MFS, $n = 7$), polyneuritis cranialis (PNC, $n = 2$), and the pharyngo-cervico-brachial (PCB, n = 1) variant had also been reported (Finsterer and Scorza, 2021). Contrary to the present review, 89% in that cohort had received IVIG (Finsterer and Scorza, 2021). The outcome was reported in 168 patients and was assessed as complete recovery (22%), partial recovery ($n = 71\%$), or as fatal (7%) (Finsterer and Scorza, 2021).

Interestingly, the authors did not report any fatalities. Death may not only result from COVID-19 but also from GBS and related complications. Thus, it is conceivable that among 94 patients at least some had a fatal outcome as in the aforesaid study of 220 SC2-GBS patients (Finsterer and Scorza, 2021). The question arises if only patients who survived were included.

Ptosis is an uncommon manifestation of most GBS subtypes, except in MFS where it occurs in about 10% of the cases (Oono et al., 2015). Thus, we should be told whether the 2 patients of the present study who presented with ptosis were among those 11 patients with MFS. In case they did not belong to the MFS cohort, it should be made coherent if they had PNC (Sheikh et al., 2021). Ptosis could be explained by affection of cranial nerve III or by affection of sympathetic autonomic fibers innervating Muller's muscles, as dysautonomic GBS cases (including dysautonomic MFS variant) have been reported in recent literature (Biswas et al., 2021).

The statement in Table 4 "CSF WBC count normal", in two thirds of the cases, suggests that one third of the 94 included patients had pleocytosis in the cerebro-spinal fluid (CSF) (Sheikh et al., 2021). CSF pleocytosis, however, does not comply with the validated Brighton criteria for diagnosing GBS. This discrepancy should be clarified.

Overall, the review has several limitations which challenge the results and their interpretation. In should be discussed why only a limited number of patients were included, how overlapping clinical manifestations were attributed to either COVID-19 or GBS, if the two patients with ptosis had MFS or PNC, why patients with CSF pleocytosis were included, and why there were no fatalities.

Statement of ethics

It was in accordance if ethical guidelines.

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Author contribution

JF helped with the design, literature search, discussion, first draft, critical comments, and final approval, RG: literature search, discussion, critical comments, final approval.

Informed consent

The study was approved by the institutional review board.

Declaration of Competing Interest

None.

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