Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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SARS-CoV-2 associated or post partum Guillain Barre syndrome?

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Letter to the editor

With interest we read the article by Tekin et al. about a 34yo female who was tested positive for SARS-CoV-2 in her 37th week of pregnancy [1]. She manifested clinically with mild COVID-19 (coughing) one day before admission and underwent Cesarean section under general anesthesia on hospital day-2 [1]. Eighteen days after clinical onset of COVID-19, the patient developed dysphagia, limb muscle weakness, and urinary hesitancy. Two days later Guillain-Barre syndrome (GBS) subtype acute, motor and sensory axonal neuropathy (AMSAN), was diagnosed and intravenous immunoglobulins (IVIGs) were given with a beneficial effect such that MRC improved from 1 to 3 in the lower limbs and from 4 to 5 in the upper limbs [1]. The study is appealing but raises the following comments and concerns.

The main shortcoming of the study is that a causal relation between SARS-CoV-2 and GBS was postulated (first part of discussion) without providing evidence for such a relation [1]. In the discussion it is already mentioned that pregnancy and more frequently the post-partal period can be complicated by GBS [1,2]. GBS during pregnancy has been shown to resolve rapidly during the post-partial period [3]. Thus, it is conceivable that GBS in the index patient occurred without being causally related to SARS-CoV-2 and would have occurred even without having been infected with SARS-CoV-2. A causal relation could have been supported by more detailed investigations of the cerebro-spinal fluid (CSF). In a recent study on 13 patients with SARS-CoV-2 associated encephalitis it has been shown that cytokines (IL8, IL6, IL1β, TNFα), neuronal and glial markers are particularly elevated [4]. In a study of the CSF in SARS-CoV-2 associated GBS patients it has been found that cells, protein and NfL were elevated in inflammatory neurological disease [5]. To confirm or rule out a causal relation between SARS-CoV-2 and GBS in the index patient it could thus be helpful to more extensively investigate the CSF not only for viral RNA but also for cytokines, neuronal markers, and glial markers.

It would be also interesting to investigate the new-born for cytokines, glial and neuronal markers even if the child was negative for SARS-CoV-2 RNA to see if these markers migrated transplacentarely from the mother to the child during the viral infection. This is crucial in the light of swab tests that can be false negative and patients with pulmonary SARS-CoV-2 infection who tested positive for the virus only in the bronchial secrets during bronchoscopy but not on the naso-pharyngeal swab tests.

We should also be told if shortness of breath in the index patient was attributed to pneumonia or to affection of the respiratory muscles by the GBS. Affection of the respiratory muscles in GBS is conceivable as the patient had dysphagia and facial palsy and thus involvement of the VII, IX, and Xth cranial nerves. Thus the phrenic nerve may have been also affected.

Overall, the study has some limitations which should be addressed before drawing conclusions. Since a causal relation between SARS-CoV-2 and GBS remained unproven, more extensive CSF investigations are warranted.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Statement of ethics

Was in accordance if ethical guidelines.

Conflicts of interest

None.

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Author contribution

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

Informed consent was obtained

The study was approved by the institutional review board.

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