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Letter to the Editor

Before the SARS-CoV-2 Vaccine is Blamed for Guillain-Barre Syndrome, Alternative Causes Must Be Considered and Ruled Out

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We were interested to read the article by Zhu *et al*. on a 58-year-old man with Guillain-Barre syndrome (GBS) due to SARS-CoV-2 vaccination (SC2V) 55 days earlier [1]. The study is excellent, but a few points should be discussed.

The first point is that the causal link between SC2V and GBS has not been proven. Firstly, the latency period between SC2V and the onset of GBS is 55 days, and secondly, alternative triggers of GBS were not sufficiently excluded.

The second point refers to the earlier radiculitis 40 years ago [1]. We should know whether the clinical manifestations of the previous radiculitis have completely resolved or whether there were residual symptoms and whether the nerve conduction studies (NCS) have completely normalized after the first radiculitis. Is it conceivable that abnormal NCSs in the second radiculitis were at least partially residual abnormalities from the previous radiculitis?

The third point refers to the NCS values given in Table 1C [1]. The nerve conduction velocities (NCVs) given in this table are not compatible with demyelination. According to our own reference values and the values available in the literature, most if not all NCVs given there are in the normal range, but definitely above 28m/s. Therefore, GBS should not be classified as acute inflammatory demyelinating polyneuropathy (AIDP).

The fourth point is that no information was provided as to whether or not a viral panel was performed from the cerebrospinal fluid (CSF). Since viral meningitis/encephalitis is a differential diagnosis that must be ruled out, CSF testing for viral infections is essential. The CSF cell count may be normal in viral or immune meningitis or encephalitis, which is why CSF tests must be carried out repeatedly. In this context, the exclusion of SARS-CoV-2 in the CSF is also mandatory. A negative swab from the throat does not rule out the presence of SARS-CoV-2 in the CSF.

The fifth point is the statement that "motor conduction velocity disappeared" [1]. Do the authors mean that no responses could be elicited by electrical stimulation, or do they mean that the conduction velocity was no longer measurable?

The sixth point refers to treatment with methyl-prednisolone [1]. It is not clear why the patient received methyl-prednisolone in addition to plasma exchange and intravenous immunoglobulins (IVIG). It can therefore not be ruled out that methyl-prednisolone did more harm than good, which is supported by the fact that the patient suffered from a gastric ulcer with bleeding during the glucocorticoid therapy.

The seventh point refers to the dilated, non-reactive pupils [1]. Was this due to an overactivity of the sympathetic nervous system or an underactivity of the parasympathetic nervous system In this context, we should know whether the autonomic nervous system (ANS) was involved in GBS. GBS, especially the AMSAN subtype, is known to involve the ANS [2], and there are even GBS cases with pure dysautonomia [3]. It should also be discussed whether the cardiac arrest on the first day of hospitalization was due to ANS involvement or other causes. It should also be considered that the cardiac arrest is due to stress cardiomyopathy, also known as Takotsubo syndrome (TTS). It is known that TTS can be complicated by heart failure, thromboembolism, or malignant ventricular arrhythmias [4].

The eighth point is that causes other than SC2V have not been sufficiently ruled out as an explanation for GBS. The most common causes of GBS are protozoal, bacterial, or viral infections [5]. Gastrointestinal or pulmonary infections in particular have been shown to precede GBS. The most common triggers of GBS are Campylobacter jejuni, Haemophilus influenza and Mycoplasma pneumoniae.

In summary, this interesting study has limitations that put the results and their interpretation into perspective. Addressing these limitations could strengthen the conclusions and support the message of the study. Before blaming the SARS-CoV-2 vaccine for GBS, alternative etiologies need to be considered and ruled out.

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