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Letter to the Editor

Guillain-Barre syndrome after SARS-CoV-2 vaccinations is not infrequent

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We read with interest the article by Su *et al*. about the first reported patient from Taiwan with Guillain-Barre syndrome (GBS) as a complication of a SARS-CoV-2 vaccine [1]. The patient was a 39 years-old female with a previous history of arterial hypertension and hepatitis-B who developed progressive sensory disturbances of all four limbs 10 days after the first dose of the Astra Zeneca anti-SARS-CoV-2 vaccine [1]. Four days later the patient developed involvement of the motor nerves including those innervating the respiratory muscles requiring intubation and mechanical ventilation [1]. Luckily, she profited from plasmapheresis and made a full recovery until discharge [1]. The study is appealing but raises concerns that need to be discussed.

The patient obviously did not only present with involvement of the facial nerve, but also with involvement of the IXth and Xth cranial nerve as dysphagia has been described [1]. We should be told if only these three cranial nerves were affected or if there was involvement of other cranial nerves as well. Cranial nerve involvement in SARS-CoV-2 vaccination associated GBS is not infrequent and has been previously been reported [2, 3]. Interestingly, the facial nerves showed contrast enhancement bilaterally [1]. Was there any contrast enhancement also detected within the IXth and Xth cranial nerve?

GBS is frequently associated with autonomic dysfunction [3]. We should be told if the patient ever developed autonomic disturbances or if clinical neurologic exam or instrumental investigations revealed an indication for dysautonomia.

At least in patients with SARS-CoV-2 associated GBS it has been shown that cytokines, such as interleukin (IL)-6, IL-8, IL-1b, or tumour necrosis factor (TNF) alpha, chemokines, or glial factors can be elevated in the cerebrospinal fluid (CSF) of these patients [4]. We should be told if cytokine levels were measured in the CSF and if they were normal or not.

We also should be informed about the rationale for starting with plasmapheresis and not with intravenous immunoglobulins (IVIGs). Were IVIGs not available? Is plasmapheresis the first line treatment for GBS in Taiwan?

We do not agree that there was demyelinating neuropathy. Compound muscle action potential amplitudes were low in all investigated nerves except for the sural nerve. It should be discussed if the electrophysiological findings are compatible rather with acute, motor and sensory, axonal neuropathy (AMSAN) with cranial nerve involvement and secondary demyelination than with acute, inflammatory demyelinating polyneuropathy (AIDP). Degeneration particularly of the large axons may result in electrophysiological features similar to those of primary demyelination.

Neurological side effects from SARS-CoV-2 vaccinations not only include GBS, facial palsy, seizures, transverse myelitis, acute disseminated encephalomyelitis (ADEM) and venous sinus thrombosis (VST) as mentioned in the discussion [1], but a much broader spectrum of neurological adverse reaction including autoimmune encephalitis, reversible, cerebral vasoconstriction syndrome (RCVS), ischemic stroke, intracerebral bleeding, multiple sclerosis, neuromyelitis optica, Tolosa-Hunt syndrome, hypophysitis, pituitary apoplexy, and small fiber neuropathy [5].

Overall, the interesting study has some limitations which challenge the results and their interpretation. GBS is an established complication of SARS-CoV-2 vaccines with about 400 cases so far reported.

Declarations

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Code availability: Not applicable.

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References

1. Su SC, Lyu RK, Chang CW, Tseng WJ. The First Guillain-Barr? Syndrome After SARS-CoV-2 Vaccination in Taiwan. Acta Neurol Taiwan. 2022; 31(1):46-51.
2. Finsterer J, Scorza FA, Scorza CA, Fiorini AC. Consider differentials before diagnosing COVID-19 associated polyradiculitis. Eur J Transl Myol, 2022. Doi: 10.4081/ejtm.2022.10111.
3. Kakumoto T, Kobayashi S, Yuuki H, Kainaga M, Shirota Y, Hamada M, *et al*. Cranial Nerve Involvement and Dysautonomia in Post-COVID-19 Guillain-Barré Syndrome. Intern Med. 2021; 60(21):3477-3480. Doi: 10.2169/internalmedicine.7355-21.
4. Gigli GL, Vogrig A, Nilo A, Fabris M, Biasotto A, Curcio F, *et al*. HLA and immunological features of SARS-CoV-2-induced Guillain-Barré syndrome. Neurol Sci. 2020; 41(12):3391-3394. Doi: 10.1007/s10072-020-04787-7.
5. Finsterer J. Neurological side effects of SARS-CoV-2 vaccinations. Acta Neurol Scand. 2022; 145(1):5-9. Doi: 10.1111/ane.13550.