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Letter to the Editor

SARS-CoV-2 vaccination associated GBS is no fiction and underreported

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We eagerly read the systematic review by Abolmaali *et al*. about patients with SARS-CoV-2 vaccination associated Guillain Barre syndrome (GBS, SC2VaG) published between January 2020 and November 2021 [1]. Altogether, 88 patients with SC2VaG, reported in 41 articles, were included [1]. The AstraZeneca vaccine (AZV) was applied to 59%, the Biontech Pfizer vaccine (BPV) to 23%, the Johnson & Johnson vaccine (JJV) to 6,25%, the Sputnik-V vaccine (SPV) to 5.7%, the Sinopharm vaccine (SPV) to 3.4%, the Moderna vaccine (MOV) to 2.3%, and the Sinovac vaccine (SVV) to 1.1% of patients [1]. Acute inflammatory demyelinating polyneuropathy (AIDP) was diagnosed in 43%, AMSAN in 10%, and acute, motor, axonal neuropathy (AMAN) in 4.5% [1]. The overall outcome was favourable in the majority of cases [1]. The study is attractive but carries limitations that raise concerns and should be extensively discussed.

It was concluded that the incidence of GBS slightly increased since introduction of anti-SARS-CoV-2 vaccines [1]. However, the design of the study (review) and the provided data are inappropriate to draw such a conclusion [1]. Furthermore, the term "incidence" was wrongly used in several instances [1]. Incidence is the number of patients diagnosed per 100000 per year. The statement "Incidence of bulbar weakness and ophthalmoplegia was 11.4%" refers to the rate of patients with bulbar weakness in relation to the 88 GBS patients included in the review.

There is a strong discrepancy between the index study, which collected articles published between January 2020 and November 2021 [1] and a recent review about published cases with SARS-CoV-2 vaccination associated GBS which collected articles published between January 2020 and the end of September 2021 [2]. In the later study 23 articles detailing individual data from 52 GBS patients and 5 articles reporting pooled data from 337 SC2VaG patients were included [1]. The discrepancy in the number of SC2VaG during a similar observational period should be explained.

In the later study, which statistically evaluated 52 patients, age ranged between 7-90y, 58% were male, and latency between vaccination and onset of SC2VaG ranged between 3h and 39d [2]. AZV was applied to 78% of patients, BPV to 18%, and JJV to 4% [2]. SC2VaG developed after the first injection in 92% of patients [2]. Intravenous immunoglobulins (IVIG) were given to 82% of patients, steroids to 12%, and plasma exchange to 9%. Eight patients required mechanical ventilation [2]. None of the patients died but complete recovery could be achieved in only four patients. Partial recovery was reported in 23 patients [2].

GBS commonly manifests with autonomic disturbance [3]. Readers should know in how many of the 88 GBS patients included autonomic abnormalities, such as hypersensitivity to light, sicca syndrome, decreased heart rate variability, sphincter dysfunction, hypogonadism, hyper- or hypohidrosis, or orthostatic dysfunction, were detected.

The term "favourable outcome", which was achieved in almost two thirds of cases, is undefined [1]. Readers should know if these patients recovered completely or if it means independent ambulation but not complete recovery. Furthermore, the latency between onset and last follow-up should be provided.

Overall, the interesting study has some limitations that challenge the results and the conclusions. Clarifying these shortcomings would strengthen the conclusions and make the study more compelling. To assess the frequency of SC2VaG, self-reporting platforms and pharmacovigilance databases should be included. Not each case of SC2VaG is published.

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