SARS-CoV-2 Vaccination Safety in Guillain-Barré Syndrome, Chronic Inflammatory Demyelinating Polyneuropathy, and Multifocal Motor Neuropathy

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Study Question
Is SARS-CoV-2 vaccination associated with an increased risk for recurrence or worsening of disease course in patients with Guillain-Barré syndrome (GBS), chronic inflammatory demyelinating polyneuropathy (CIDP), or multifocal motor neuropathy (MMN)?

What Is Known and What This Paper Adds
Because an eight-fold increased incidence rate of GBS was reported during a H1N1 influenza vaccination campaign in 1976, there are concerns about safety of vaccinations in patients with immune-mediated neuropathies. Individuals with a prior diagnosis of GBS and those receiving IVIg or systemic corticosteroids were excluded from SARS-CoV-2 vaccination phase III trials. This study’s results did not find an increased risk for recurrence of GBS or severe disease exacerbations in patients with CIDP and MMN post–SARS-CoV-2 vaccination.

Methods
This observational study enrolled 674 individuals with a prior diagnosis of GBS, CIDP, or MMN, known in 1 of 3 University Medical Centers or to the Dutch Patient Association for neuromuscular diseases who consented to participate in the analysis. For this analysis, we excluded 153 individuals for having received a SARS-CoV-2 vaccination or testing positive for SARS-CoV-2 infection before study baseline. Participants completed questionnaires at up to 4 different time points: at study baseline, within 48 hours prior of each SARS-CoV-2 vaccine dose, and 6 weeks after the last SARS-CoV-2 vaccination. Of the 521 participants included in the analyses, 403 (77%) completed and returned the last subset. The primary outcome in this study is any self-reported recurrence of GBS or any worsening of CIDP or MMN post–SARS-CoV-2 vaccination. This was verified by additional phone interviews and by evaluating data supplied by treating physicians.

Results and Study Limitations
Among the 403 participants completing follow-up at 6 weeks after the last SARS-CoV-2 vaccination, 162 had GBS, 188 had CIDP, and 53 had MMN. None of the participants with a history of GBS had a recurrence. Ten (5%) participants with CIDP reported a worsening of symptoms during follow-up. In 5 of these participants, maintenance treatment was modified because of some increase of muscle weakness and/or sensory symptoms. These 5 participants had a fluctuating disease course because of SARS-CoV-2 vaccination. Symptoms normalized within 4 weeks in 6 participants (60%), persisted for over 4 weeks in 3 participants (30%), and in 1 participant, it is unknown whether the symptoms resolved. Two of 53 participants with MMN (4%) reported a worsening of symptoms, and treatment modification was reported by 1 participant. This participant reported deterioration of muscle strength ongoing from before vaccination. We did not find evidence for recurrence of GBS or severe disease exacerbations in patients with CIDP and MMN post–SARS-CoV-2 vaccination. The study had several limitations. The impact of SARS-CoV-2 vaccination on the disease course might be overestimated because of a possible overrepresentation of patients with either residual symptoms or active, unstable disease. On the other hand, participants may have underreported symptoms that had already resolved or which they considered unrelated. Finally, this study is mainly based only on patient-reported data, which we verified by additional phone interviews and requesting medical records (Figure).

Registration, Study Funding, and Competing Interests
This study did not receive targeted funding. The authors do not report competing interests. Go to Neurology.org/N for full disclosures.
Figure Study Population, Response Rate to Questionnaires, and Disease Course After SARS-CoV-2 Vaccination

CIDP = chronic inflammatory demyelinating polyneuropathy; GBS = Guillain-Barré syndrome; MMN = multifocal motor neuropathy.