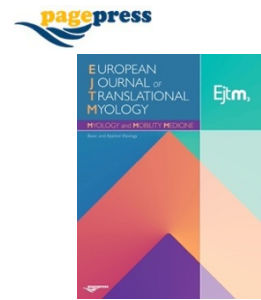


# Outcome of GBS after rehabilitation

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## **The outcome of severe GBS after robotic or conventional rehabilitation also depends on the triggering agent and the electrophysiological subtype**

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**Key words:** Guillain-Barré syndrome, axonal neuropathy, robotic rehabilitation, outcome, nerve conduction studies.

Dear Editor,

We read with interest the article by Tramonti *et al.* about a 54-year-old man with severe Guillain-Barré Syndrome (GBS) following a flu-like infection in April 2022, which required long-term intubation and mechanical ventilation.<sup>1</sup> Despite immediate treatment with steroids, Intravenous Immunoglobulins (IVIg), and Plasma Exchange (PE), the patient was discharged to a rehabilitation facility after 9 months with severe quadraparesis and weakness of the axial, respiratory, and pharyngeal muscles.<sup>1</sup> After intensive rehabilitation with conventional and robot-assisted approaches, the patient's condition improved significantly after another two months.<sup>1</sup> The study is noteworthy, but some points require discussion.

The first point is that no results of Nerve Conduction Studies (NCS) and needle Electromyography (EMG) were reported.<sup>1</sup> We should know which type of GBS was diagnosed at disease onset in April 2022, as the disease course depends heavily on whether the patient was diagnosed with an axonal [acute motor (sensory) axonal neuropathy (AMAN, AMSAN)] or demyelinating form (acute inflammatory demyelinating polyneuropathy) of GBS. It should also be clarified whether the patient had cranial nerve involvement, as bulbar muscles were apparently also involved in GBS. Was there evidence of affection of the trigeminal, facial, glossopharyngeal, vagus, accessory, and hypoglossal nerves?

The second point is that the trigger for GBS was not reported.<sup>1</sup> Since the patient was admitted in April 2022, it is conceivable that the flu-like symptoms prior to the onset of GBS were actually a mild SARS-CoV-2 infection. Was the patient SARS-CoV-2 negative upon admission? SARS-CoV-2 is known to cause GBS. Several cases of GBS due to SARS-CoV-2 infection have been reported,<sup>2</sup>

and until this trigger is definitively ruled out, it is the most plausible one. If the patient was SARS-CoV-2 negative, all other possible triggers that commonly cause GBS should be considered.<sup>3</sup>

The third point is that the patient was diagnosed with axonal Polyneuropathy (PNP) in addition to GBS.<sup>1</sup> What was the cause of the axonal PNP? Did the patient have risk factors for PNP, such as diabetes, renal failure, vitamin deficiency, or a history of positive immunological disorders, cancer, or chemotherapy? We also need to know how long the patient was in the intensive care unit, how long they required mechanical ventilation, and whether he had a critically ill neuropathy/myopathy in addition to GBS. It should also be clarified whether the axonal polyneuropathy was actually the GBS or not.

Fourth, it is unclear why the patient received steroids in addition to IVIG and PE.<sup>1</sup> Steroids are known to have no beneficial effect in GBS.<sup>4</sup> Steroids may cause more side effects than benefits. Did the patient show a positive effect from steroids?

Fifth, the clinical improvement with rehabilitation was not documented by NCS. Since the patient was diagnosed with GBS or axonal PNP, clinical improvement should be confirmed by an improvement in electrophysiological parameters.

Finally, the description of the clinical picture on admission is missing.<sup>1</sup> To assess the benefit of treatment and rehabilitation, the degree of motor impairment and impairment of daily activities should be reported upon admission to the intensive care unit (ICU).

In summary, the effect of rehabilitation in severe GBS depends on the causative agent and the electrophysiological subtype. GBS subtypes should be specified to guide treatment in the ICU and during rehabilitation.

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Not applicable.

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### **Availability of data and material**

All data are available from the corresponding author.

### **Conflict of interest**

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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