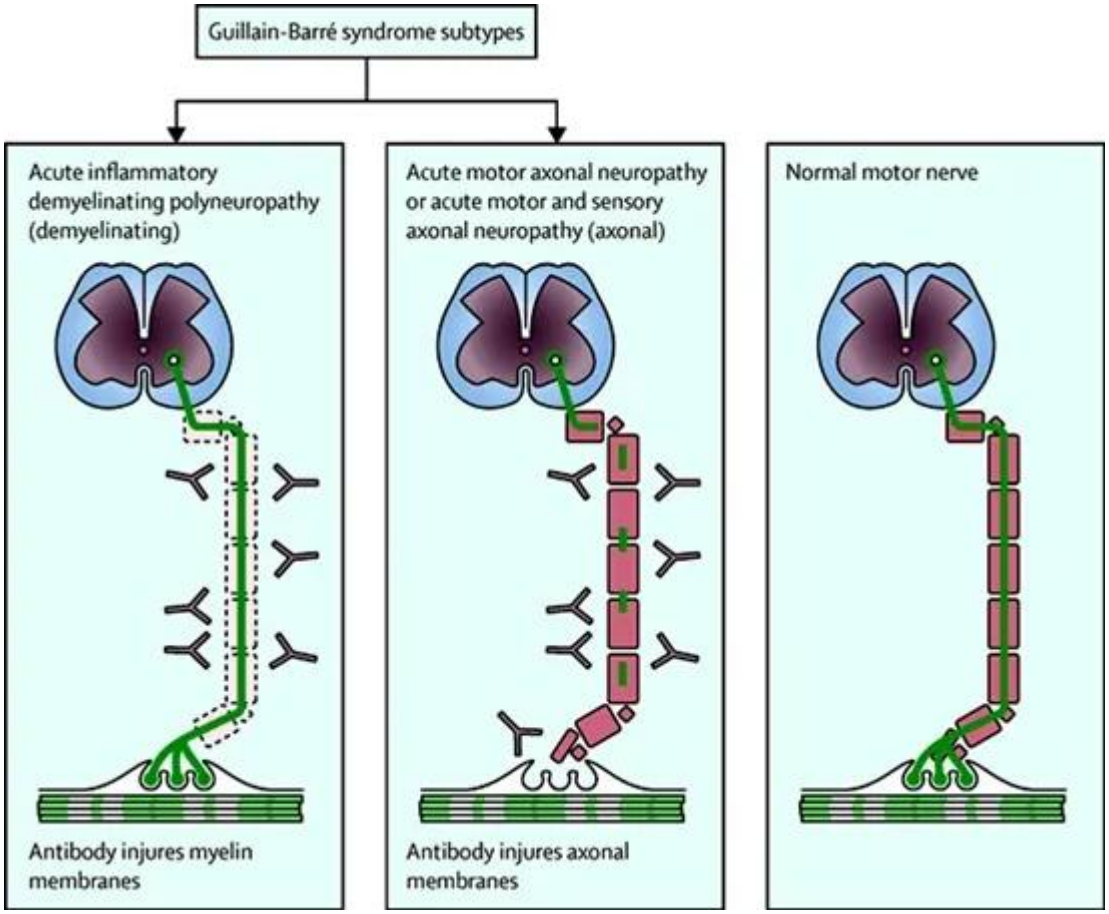
Guillain-Barré Syndrome (GBS) is a rare but serious autoimmune disease characterized by rapidly progressive, symmetrical limb weakness, areflexia, sensory abnormalities, and cytoalbuminologic dissociation in the cerebrospinal fluid. The Maharashtra (India) state Health Department reports an increase in Guillain-Barré Syndrome, with 180 GBS cases, including 132 confirmed cases, and six deaths. The state Health Department also reports that 55 patients are in the Intensive Care Unit (ICU), 21 are on ventilators, and 72 have been treated and discharged.

Under the umbrella term of GBS are several recognizable variants with distinct clinical and pathological features. Demyelinating and axonal forms of the syndrome occur in varying proportions across different geographical regions. The acute progression of limb weakness, often with sensory and cranial nerve involvement 1–2 weeks after immune stimulation, proceeds to its peak clinical deficit in 2–4 weeks. The severe, generalized manifestation of GBS with respiratory failure affects 20–30% of cases. Treatment with intravenous immunoglobulin or plasma exchange is the optimal management approach.



The figure from Willison, Hugh J et al. Guillain-Barré syndrome. The Lancet, 2016; Volume 388, Issue 10045, 717 – 727.

Understanding of the infectious triggers and immunological and pathological mechanisms has advanced substantially in the past 10 years. Molecular mimicry, antiganglioside antibodies, and likely complement activation are involved in the pathogenesis of GBS. GBS is usually preceded by infection or other immune stimulation that induces an aberrant autoimmune response targeting peripheral nerves and their spinal roots. The most frequently identified precipitant of GBS is *Campylobacter jejuni* infection, which is usually associated with the acute motor axonal neuropathy form of GBS. Molecular mimicry between microbial and nerve antigens is a major driving force behind the development of the disorder, at least in the case of *Campylobacter jejuni* infection. However, the interplay between microbial and host factors that dictate if and how the immune response is shifted towards unwanted autoreactivity remains not fully understood. (Willison, Hugh J et al. Guillain-Barré syndrome. The Lancet, 2016; Volume 388, Issue 10045, 717 – 727).

https://www.thelancet.com/article/S0140-6736%2816%2900339-1/fulltext

Most affected patients in Maharashtra are from Pune city, while the remaining cases are from nearby areas and other parts of the state. Importantly, Mumbai also reported the first case of GBS in a 64-year-old woman, who was hospitalized with a history of fever and diarrhea, followed by ascending paralysis. She is currently being treated in the ICU.

According to the Director General of the Indian Council of Medical Research Dr. Rajiv Bahl, they are still investigating the cause behind the sudden spike in GBS cases in Maharashtra. He said: “Lots of samples have been collected and are being tested at the National Institute of Virology to find out the common link or say what infection the people had suffered from two to six weeks prior to being tested with GBS”. He also said that the cause of GBS was found in 40% of cases. The six types of infections, which generally precede GBS, have not been identified. *Campylobacter jejuni* was found in 4 stool samples from 21 GBS patients in Pune. In addition, Norovirus was found in some patients.

The Public Health Laboratory has received 3,868 water samples from different parts of the city for chemical and biological analysis. Of these, 37 were found to be contaminated, prompting authorities to increase health awareness campaigns. Medical practitioners have

been urged to report any GBS cases to the public health authorities.

In 2023, the National Center for Epidemiology, Prevention, and Disease Control of Peru issued an epidemiological alert due to a surge in GBS infections in several parts of the country. They reported 191 cases of GBS, including 77 confirmed cases, and four deaths. Based on clinical and epidemiological features, it was determined that the *Campylobacter jejuni* genotype 2993, previously connected to GBS outbreaks in China, was responsible for another GBS outbreak in Peru in 2019.
https://discovermednews.com/outbreak-of-guillain-barre-syndrome-in-peru/

Source

https://www.newindianexpress.com/nation/2025/Jan/29/investigations-still-on-to-identify-cause-behind-guillain-barre-syndrome-spurt-icmr-chief