



## Guillain–Barré Syndrome Associated with SARS-CoV-2 Infection

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*To the Editor:* Paucity of reports of Guillain–Barré syndrome (GBS) in association with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection from low-middle income countries (LMIC) is intriguing [1]. A causal relationship awaits definitive evidence [2]. We report a 7-y-old boy presenting with bilateral, symmetrical, lower-limb weakness and paresthesia for 8 d, with no antecedent viral illness. He had areflexia, poor gag reflex, and a single breath count of 8, requiring mechanical ventilation. Nerve conduction study revealed severely reduced amplitude and velocity in both motor and sensory nerves suggestive of the inexcitable variant of GBS. Cerebrospinal fluid analysis showed 3 lymphocytes, protein of 310 mg/dL and sugar 63 mg/dL. He fulfilled level 1 of the Brighton criteria. Intravenous immunoglobulin (IVIG) was administered. He was extubated after 3 d. GBS disability score at discharge was 3. Polymerase chain reaction (PCR) for SARS-CoV-2 was negative; IgM and IgG antibodies were positive.

Increasing incidence of GBS in the SARS-CoV-2 pandemic lead to suspicion of causation [1]. Suspected mechanisms include neurotropism and post-infectious aberrant immune response. A recent systematic review reported 61 cases; majority had the classical sensorimotor presentation [1]. Acute inflammatory demyelinating polyneuropathy (AIDP) was the commonest variant (75%), followed by acute motor axonal neuropathy (AMAN) in 11.3% and acute motor and sensory neuronal axonopathy (AMSAN) in 9.4% [1]. Most received IVIG and recovered well. Like the index patient, 10% had a negative PCR but were positive for serology. Despite large numbers of infected populations in LMIC, reports of GBS

have been strikingly scarce [1]. This has been attributed to under-reporting and nonavailability of serology testing, despite widespread availability of PCR.

Four children have been reported so far [1, 3]. The first series from India reported four adults; to our knowledge, this is the first child to be reported [4]. Systematic testing and reporting are essential to investigate a causal relationship between SARS-CoV-2 and GBS.

### Declarations

**Conflict of Interest** None.

### References

1. Hasan I, Saif-Ur-Rahman KM, Hayat S, et al. Guillain-Barré syndrome associated with SARS-CoV-2 infection: a systematic review and individual participant data meta-analysis. *J Peripher Nerv Syst.* 2020;25:335–43.
2. Keddie S, Pakpoor J, Mausele C, et al. Epidemiological and cohort study finds no association between COVID-19 and Guillain-Barré syndrome. *Brain.* 2020. <https://doi.org/10.1093/brain/awaa433>.
3. Nanda S, Handa R, Prasad A, et al. Covid-19 associated Guillain-Barre syndrome: contrasting tale of four patients from a tertiary care Centre in India. *Am J Emerg Med.* 2021;39:125–8.
4. Curtis M, Bhumbra S, Felker MV, et al. Guillain-Barré syndrome in a child with COVID-19 infection. *Pediatrics.* 2020. <https://doi.org/10.1542/peds.2020-015115>.

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