Challenges and Opportunities with the Clinical–Electrophysiological Prediction of Recovery in Childhood Guillain–Barré Syndrome

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Guillain–Barré syndrome (GBS) is one of the most common causes of acute flaccid paralysis requiring hospital admission. In this issue of the Journal, Agarwal and colleagues tried to answer an important clinical query on clinical and electrophysiological factors which can predict prolonged recovery in children [1]. They studied 57 children and observed the presence of acute motor axonal neuropathy variant, asymmetric involvement and prolonged ulnar F-wave latencies associated with delayed walking. A prospective study design, stringent diagnostic criteria, study period over a year and a reasonable length of follow-up are strengths of the study. However, the study's main limitations were the small sample size and attrition among the initial cohort. Overall, the study provides crucial insights on predicting variables of outcome in childhood GBS.

The main challenges with studies measuring clinical–electrophysiological prediction of GBS outcomes are heterogeneity in terms of age at onset, severity, treatment lag, underlying etiology, applied diagnostic criteria, standard of care, and used treatment regimens. These majorly affect the external validity of the study findings. The possible parainfectious etiologies of GBS also differ with different seasons, patient age, and geographical regions. *Mycoplasma pneumonia* and *Campylobacter jejuni* as antecedent etiological factors were previously reported from India [2, 3]. Etiology is crucial as it affects electrophysiological phenotype. Another issue of lack of robust biomarkers to monitor treatment response is also a significant challenge in GBS trials and studies. Interestingly, a recent paper highlighted that prognosis, as well as the short-term outcome of childhood GBS, was correlated with the rate of response to IVIG [4]. Furthermore, meaningful clinical outcomes, e.g., duration of mechanical ventilation

and intensive care requirement of pediatric GBS, need to be addressed [5].

There is a need for multicenter studies with sufficient sample size and follow-up to determine the best prediction model. Future studies should also apply the machine learning model to develop a better prediction model. As a large number of children with GBS are being managed at children's hospitals in India, pediatric neurologists, neurophysiologists and intensivists should seize the opportunity to conduct a high-quality study on this topic and generate evidence for an efficient prediction model.

Declarations

Conflict of Interest None.

References

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