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An International Perspective on Preceding Infections in Guillain-Barré Syndrome

The IGOS-1000 Cohort

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Abstract

Background and Objectives Infections play a key role in the development of Guillain-Barré syndrome (GBS) and have been associated with specific clinical features and disease severity. The clinical variation of GBS across geographical regions has been suggested to be related to differences in the distribution of preceding infections, but this has not been studied on a large scale.

Methods We analyzed the first 1,000 patients included in the International GBS Outcome Study with available biosamples (n = 768) for the presence of a recent infection with *Campylobacter jejuni*, hepatitis E virus, *Mycoplasma pneumoniae*, cytomegalovirus, and Epstein-Barr virus.

Results Serologic evidence of a recent infection with *C. jejuni* was found in 228 (30%), *M. pneumoniae* in 77 (10%), hepatitis E virus in 23 (3%), cytomegalovirus in 30 (4%), and Epstein-Barr virus in 7 (1%) patients. Evidence of more than 1 recent infection was found in 49 (6%) of these patients. Symptoms of antecedent infections were reported in 556 patients (72%), and this proportion did not significantly differ between those testing positive or negative for a recent infection. The proportions of infections were similar across continents. The sensorimotor variant and the demyelinating electrophysiologic subtype were most frequent across all infection groups, although proportions were significantly higher in patients with a cytomegalovirus and significantly lower in those with a *C. jejuni* infection. *C. jejuni*–positive patients were more severely affected, indicated by a lower Medical Research Council sum score at nadir ($p = 0.004$) and a longer time to regain the ability to walk independently ($p = 0.005$). The pure motor variant and axonal electrophysiologic subtype were more frequent in Asian compared with American or European *C. jejuni*–positive patients ($p < 0.001$, resp. $p = 0.001$). Time to nadir was longer in the cytomegalovirus-positive patients ($p = 0.004$).

Discussion Across geographical regions, the distribution of infections was similar, but the association between infection and clinical phenotype differed. A mismatch between symptom reporting and serologic results and the high frequency of coinfections demonstrate the importance of broad serologic testing in identifying the most likely infectious trigger. The association between infections and outcome indicates their value for future prognostic models.

Glossary

CLIA = chemiluminescent immunoassay; **CMV** = cytomegalovirus; **EBV** = Epstein-Barr virus; **EBNA** = EBV nuclear antigen; **GBS** = Guillain-Barré syndrome; **HEV** = hepatitis E virus; **ICU** = intensive care unit; **Ig** = immunoglobulin; **IGOS** = International GBS Outcome Study; **IQR** = interquartile range; **IVIg** = IV immunoglobulin; **MRC** = Medical Research Council; **VCA** = viral capsid antigen

Footnotes

Go to Neurology.org/N for full disclosures. Funding information and disclosures deemed relevant by the authors, if any, are provided at the end of the article.

IGOS Consortium coinvestigators are listed at links.lww.com/WNL/C233.

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Reader Response: An International Perspective on Preceding Infections in Guillain-Barre Syndrome: The IGOS-1000 Cohort

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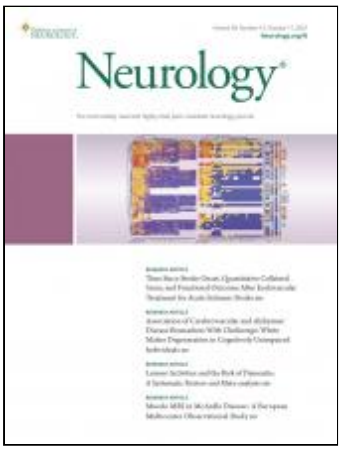

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