Guillain-Barré Syndrome Incidence Based on Hospital Discharge Data

To the Editor—Buzby et al. [1] used the National Center for Health Statistics’ National Hospital Discharge Survey data to estimate Guillain-Barré Syndrome (GBS) annual incidence and calculate the costs of caring for these patients. As part of a study looking at GBS (unpublished data), we were able to assess the value of hospital discharge data in estimating GBS incidence. As a result, we believe that the data used by Buzby et al. [1] would appear to overestimate the incidence by approximately a factor of two.

Hospital discharge summary databases from four states were used to identify GBS patients discharged during 1 September 1992 to 29 February 1993 and during 1 September 1993 to 29 February 1994 with ICD-9 code 357.0. The charts were abstracted using a standardized data collection form based on the chart abstraction criteria of Safranek et al. [2], the clinical criteria for GBS of Asbury and Cornblath [3], and the previous work by Koobatian et al. [4]. All patients were classified as definite, probable, possible, or non-GBS cases.

In total, 1109 hospital charts were reviewed. Of these, 62 were for patients who were not state residents, 153 were for patients who had their GBS disease onset outside our study period, and 288 referred to multiple admissions for the same patients. Of the remaining 606 patients, 298 were classified as true GBS cases (87 definite, 211 probable), 123 were classified as possible cases, and 185 were non-GBS cases.

From these data, one may conclude that only 49.2% (298/606) of patients with GBS on their discharge summaries truly have GBS. However, for the purposes of determining an upper estimate for GBS annual incidence, it may be appropriate to include the 123 possible cases. This would result in 69.5% (421/606) of patients having GBS. Taking into account the 288 charts that were multiple admissions for the same patients, the percentage of hospital charts that reflect true GBS cases might range from 9.7% (87/894) to 47.1% (421/894) discharges. Koobatian et al. [4] found 40.5% (45/111) of charts to be confirmed cases of GBS in the Vermont hospital discharge database in 1980–1985. The hospital discharge data used by Buzby et al. [1] to estimate the incidence of GBS would appear to overestimate the incidence by approximately a factor of two or more.

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Reply

To the Editor—Our estimates [1] of the economic costs of Campylobacter-associated Guillain-Barré syndrome (GBS) were based on an estimated annual incidence of GBS ranging from 1 to 3.6 per 100,000 population. Ballesteros et al. [2] correctly point out that the upper end of this range, published in the National Center for Health Statistics’ Hospital Discharge Survey data [3], may have been overestimated. Studies worldwide have shown that the incidence of GBS is 1 to 2 per 100,000 population [4, 5]. Using this more conservative estimate of GBS incidence, we calculate the total annual costs of Campylobacter-associated GBS in the United States to be $247.3 to $989.2 million (1995 US dollars). Adhering to these estimates of GBS incidence in future epidemiologic studies or cost analyses is likely to produce the most scientifically sound results. We appreciate the important observations made by our colleagues and thank them for their letter. We also affirm our original conclusion that Campylobacter-associated GBS produces immense economic and societal costs.

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References

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