the Caribbean coast of Colombia continues to increase, the potential for arenavirus-related disease could become a public health concern.

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References

1. Salazar-Bravo J, Ruedas LA, Yates TL. Mammalian reservoirs of arenaviruses. Curr Top Microbiol Immunol. 2002;262:25–63.
2. Trapido H, San Martín C. Pichindé virus, a new virus of the Tacaribe group from Colombia Am J Trop Med Hyg. 1971;20:631–41.
3. Fulhorst CF, Bowen MD, Salas RA, Duno TL. Mammalian reservoirs of arenaviruses. Curr Top Microbiol Immunol. 2002;262:25–63.
4. Salazar-Bravo J, Ruescas LA, Yates TL. Mammalian reservoirs of arenaviruses. Curr Top Microbiol Immunol. 2002;262:25–63.

LETTERS

High Incidence of Guillain-Barré Syndrome in Children, Bangladesh

To the Editor: Bangladesh has achieved remarkable success in its drive to eliminate poliomyelitis; no case has been reported from that country since 2000. Still, the nonpolio incidence rate of acute flaccid paralysis (AFP) in Bangladesh is 3.25 cases per 100,000 children <15 years of age (1). Guillain–Barré syndrome (GBS), an acute polyradiculoneuropathy, is the most frequent cause of AFP (2). GBS in Bangladesh is frequently preceded by an enteric infection caused by Campylobacter jejuni (3). Frequent exposure to enteric pathogens at an early age may increase the incidence of GBS. We hypothesized that most AFP cases in Bangladesh can be diagnosed as GBS. Our objective was to estimate the crude incidence rate of GBS among children <15 years of age in Bangladesh.

In collaboration with the World Health Organization (WHO), the Government of Bangladesh conducts active AFP surveillance. AFP is defined as acute onset of focal or general flaccid (hypotonic) paralysis and symmetrical weakness (4) in the absence of injury or birth trauma.

Bangladesh is divided into 6 divisions (major administrative regions) comprising 64 districts. Crude incidence data for GBS were calculated per division and per district on the basis of the population <15 years of age reported by WHO and the Government of Bangladesh.

In 2006 and 2007, a total of 1,619 and 1,844 AFP cases, respectively, were reported in children <15 years of age, of which 608 (37%) and 855 (46%) cases, respectively, fulfilled the GBS case definition. The crude incidence rate for GBS in children <15 years of age varied from 1.5 to 1.7 cases per 100,000 population in the 3 northern divisions (Dhaka, Rajshahi, and Sylhet) and from 2.1 to 2.5 per 100,000 in the 3 southern divisions (Khulna, Barisal, and Chittagong) (online Appendix Figure, www.cdc.gov/EID/content/17/7/1317-appF.htm). Overall, the crude incidence rate of GBS in children <15 years of age varied from 1.5 to 2.5 cases per 100,000 population per year in the 6 divisions of Bangladesh. Incidence rates were high (>5.0/100,000) in the Meherpur and Barisal districts in southern Bangladesh. We found a seasonal fluctuation in the frequency of patients with GBS; the most cases occurred in May (n = 159) and the lowest in February (n = 84). GBS occurred predominantly among boys (59%).

Most incidence studies reported in the literature originate from Europe and North America (5). A recent review reported that the best estimate of the global incidence of GBS in children <15 years of age is 13. doi:10.1086/429270

Data on the number of reported AFP cases in Bangladesh during 2006 and 2007 were obtained. On the basis of clinical and other information routinely collected through the surveillance system, we defined a GBS case as presence of an acute flaccid (hypotonic) paralysis and symmetrical weakness (4) in the absence of injury or birth trauma.

Bangladesh is divided into 6 divisions (major administrative regions) comprising 64 districts. Crude incidence data for GBS were calculated per division and per district on the basis of the population <15 years of age reported by WHO and the Government of Bangladesh.

In 2006 and 2007, a total of 1,619 and 1,844 AFP cases, respectively, were reported in children <15 years of age, of which 608 (37%) and 855 (46%) cases, respectively, fulfilled the GBS case definition. The crude incidence rate for GBS in children <15 years of age varied from 1.5 to 1.7 cases per 100,000 population in the 3 northern divisions (Dhaka, Rajshahi, and Sylhet) and from 2.1 to 2.5 per 100,000 in the 3 southern divisions (Khulna, Barisal, and Chittagong) (online Appendix Figure, www.cdc.gov/EID/content/17/7/1317-appF.htm). Overall, the crude incidence rate of GBS in children <15 years of age varied from 1.5 to 2.5 cases per 100,000 population per year in the 6 divisions of Bangladesh. Incidence rates were high (>5.0/100,000) in the Meherpur and Barisal districts in southern Bangladesh. We found a seasonal fluctuation in the frequency of patients with GBS; the most cases occurred in May (n = 159) and the lowest in February (n = 84). GBS occurred predominantly among boys (59%).

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1. Bennett SG, Milazzo ML, Webb JP Jr, Fulhorst CF. Arenavirus antibody in rodents indigenous to coastal southern California. Am J Trop Med Hyg. 2000;62:626–30.
that the effect of GBS in Bangladesh is substantial and suggests that data obtained through the ongoing global AFP surveillance program can be used to obtain crude incidence data on GBS worldwide.

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References

1. World Health Organization. EPI surveillance bulletin, vol. 11, no. 6. 2008 [cited 2010 Dec 1]. http://www.searo.who.int/vaccine
2. van Doorn PA, Ruts L, Jacobs BC. Clinical features, pathogenesis, and treatment of Guillain-Barré syndrome. Lancet Neurol. 2008;7:939–50. doi:10.1016/S1474-4422(08)70215-1
3. Islam Z, Jacobs BC, van Belkum A, Mohammad QD, Islam MB, Herbrink P, et al. Endemic axonal variant of Guillain-Barré syndrome frequently associated with Campylobacter infections in Bangladesh. Neurology. 2010;74:581–7. doi:10.1212/WNL.0b013e3181e7f33
4. Landaverde JM, Danovaro-Holliday MC, Trumbo SP, Pacis-Tirso CL, Ruiz-Matus C. Guillain-Barré syndrome in children aged <15 years in Latin America and the Caribbean: baseline rates in the context of the influenza (H1N1) pandemic. J Infect Dis. 2010;201:746–50.
5. McGrogan A, Madde GC, Seaman HE, de Vries CS. The epidemiology of Guillain-Barré syndrome worldwide: a systematic literature review. Neuroepidemiology. 2009;32:150–63. doi:10.1159/000184748
6. Rasul CH, Das PL, Alam S, Ahmed S, Ahmed M. Clinical profile of acute flaccid paralysis. Med J Malaysia. 2002;57:61–5.
7. Ashbury AK, Cornblath DR. Assessment of current diagnostic criteria for Guillain-Barré syndrome. Ann Neurol. 1990;27:821–4. doi:10.1002/ana.410270707
8. Evans D, Cauchemez S, Hayden FG. Preparademic immunization for novel influenza viruses, “swine flu” vaccine, Guillain-Barré syndrome, and the detection of rare severe adverse events. J Infect Dis. 2009;200:321–8. doi:10.1086/603560

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