

Guillain-Barré Syndrome and Influenza Vaccine

- The annual incidence of Guillain-Barré syndrome (GBS) in the United States is 10-20 cases per 1 million adults.
- Substantial evidence exists that GBS is associated with many infectious diseases, including most notably, *Campylobacter jejuni* gastrointestinal infections and upper respiratory tract infections.
- A recent study published in *Clinical Infectious Disease* (2009;48:48-56) identified serologically confirmed influenza virus infection as a trigger of GBS with time from onset of influenza illness to GBS of 3 to 30 days. The estimated frequency of influenza-related GBS was four to seven times higher than the frequency that has been estimated for influenza-vaccine-associated GBS.
- The 1976 swine influenza vaccine was associated with an increased frequency of GBS, exceeding the background rate by less than one case per 100,000 vaccinations. This means an estimated one additional case of GBS occurred per 100,000 persons vaccinated.
- Studies conducted using influenza vaccines other than the 1976 swine influenza vaccine prepared from other virus strains have not demonstrated a substantial increase in GBS associated with influenza vaccines.
- In fact, some studies have found influenza vaccine to be associated with a decreased risk for GBS, although whether this was associated with protection against influenza or confounding because of a "healthy vaccinee" (e.g., healthier persons might be more likely to be vaccinated and also be at lower risk for GBS) is unclear.
- The estimated risk for GBS (on the basis of the few studies that have demonstrated an association between vaccination and GBS) is low (i.e., approximately one additional case per 1 million persons vaccinated).
- The potential benefits of influenza vaccination in preventing serious illness, hospitalization, and death substantially outweigh these estimates of risk for vaccine-associated GBS.
- Even if GBS were a true adverse reaction in subsequent years, the estimated risk for GBS was much lower than one per 100,000. Further, the risk is substantially less than that for severe influenza or its complications, which could be prevented by vaccination, especially for persons aged 65 years or older and those with a medical indication for influenza vaccine.
- Although the incidence of GBS in the general population is very low, persons with a history of GBS have a substantially greater likelihood of subsequently developing GBS than do persons without such a history, irrespective of vaccination.
- As a result, the likelihood of coincidentally developing GBS after influenza vaccination is expected to be greater among persons with a history of GBS than among persons with no history of GBS.
- Whether influenza vaccination might be causally associated with this risk for recurrence is not known.
- However, as a precaution, persons who are not at high risk for severe influenza complications and who are known to have experienced GBS within 6 weeks of a previous influenza vaccination generally should not be vaccinated.
- As an alternative, physicians might consider using influenza antiviral chemoprophylaxis for these persons. For most persons with a history of GBS who are at high risk for severe complications from influenza, the established benefits of influenza vaccination justify yearly vaccination.

Sources:

Centers for Disease Control and Prevention. *Epidemiology and Prevention of Vaccine-Preventable Diseases*. Atkinson W, Wolfe S, Hamborsky J, McIntyre L, eds. 11th ed. Washington D.C. Public Health Foundation, 2009.

Centers for Disease Control and Prevention. *Prevention and Control of Seasonal Influenza with Vaccines Recommendations of the Advisory Committee on Immunization Practices (ACIP)*, 2009. *MMWR*;58 (No. RR-8): 17.