Flu Vaccine May Not Be Effective in the Elderly

BY PATRICE WENDLING

CHICAGO — Trivalent inactivated influenza vaccine may not elicit a clinically adequate antibody response in elderly adults, pilot data suggest.

Based on blood assays taken before and 4 weeks after administration of the Fluarix 2007/2008 formula, 88% of 71 community-dwelling older adults (mean age 85 years) failed to mount a fourfold antibody response to any of the three virus strains present in the trivalent influenza vaccine (TIV).

Only two patients had a fourfold antibody response to both influenza A types, H1N1 and H3N2, and none had such a response to all three strains—H1NI, H3N2, and influenza B, Dr. Sean X. Leng said at the annual meeting of the American Geriatrics Society. A fourfold or higher vaccine antibody titer increase, also called positive seroconversion, is the criterion for a clinically adequate antibody response.

The data from the pilot study 'point out the importance of the need for comprehensive evaluation of [the influenza] vaccine in older and frail populations.'

In contrast, he noted that the vaccine insert reports that 444 (60%) of 745 persons, aged 18-64 years, had a fourfold antibody response to the H1N1 strain, 461 (62%) had such a response to H3N2, and 575 (77%) did so to the influenza B strain.

"Obviously this is pilot data, but [it does] point out the importance of the need for comprehensive evaluation of this vaccine in older and frail populations," commented Dr. Leng, of the division of geriatric medicine and gerontology at Johns Hopkins University in Baltimore.

The audience questioned whether immunity would be a more accurate measure of vaccine protection than antibody response in the elderly since they are more likely than the young to have been vaccinated before and thus would have higher baseline antibody levels.

Of note, researchers at Stanford (Calif.) University recently reported that even the type of vaccine—TIV or live attenuated influenza vaccine—received in prior years affects both serum antibody and B-cell responses to subsequent vaccination (PLoS ONE 2008;8:e2975).

Most patients involved in the current study had high baseline titer levels, which would make it more difficult to achieve positive seroconversion, Dr. Leng acknowledged.

Patients had received flu vaccine for an average of 7 years prior to study entry, although this was based on self-report and subject to memory bias.

Still, 25 (3.4%) of the participants reported having signs and symptoms of flulike illness during the 2007-2008 flu season, although laboratory confirmation of a diagnosis of influenza was not performed.

There were no reported influenza-related deaths.

Influenza is the fourth-leading cause of death in older Americans, with the elderly bearing more than 90% of influenza-related mortality.

Dr. Leng noted that those aged 75 years and older make up a small percentage of vaccine trial cohorts, despite being the fastest-growing segment of the population. In one vaccine trial, only 11% of patients were at least 75 years old (JAMA 1994;272:1661-5).

The one-size-fits-all approach to influenza vaccine needs to be reexamined, as is being done with cancer screening in elderly and other high-risk groups, he suggested.

Patients in the study ranged in age from 72 to 95 years, 79% were women, and 93% were white. The average number of diagnoses was 3.7; these included hypertension (67%), osteoarthritis (45%), and dyslipidemia (38%).

Dr. Leng and his associates reported no conflicts of interest.

The study was sponsored by the National Institute on Aging and the American Federation for Aging Research. ■