Flu Shot Advice Hits Home With Asthma Patients

Children who receive recommendation from their physician are far more likely to get vaccinated.

BY DENISE NAPOLI

BALTIMORE — Among children with asthma who received a recommendation from their physician to get the influenza vaccine, the rate of subsequent vaccination was 76%, compared with 16% among children who reported not receiving a recommendation from their physician.

The low vaccination rate among the children who did not receive a recommendation, therefore, contributed to a relatively low vaccination rate among the entire cohort (57%), for whom the flu shot is strongly recommended.

The data, presented in a poster at the annual meeting of the Pediatric Academic Societies , should serve as a reminder to physicians treating pediatric asthma patients that their guidance really does have a profound effect, according to study author Dr. Kevin J. Dombkowski.

Dr. Dombkowski is from the Child Health Evaluation and Research Unit in the division of general pediatrics at the University of Michigan, Ann Arbor.

A total of 189 parents of children with asthma were interviewed over the phone between April and June 2008. The children were between ages 5 and 18 years, and were culled from Michigan Medicaid and Title V files. Parents were asked about health care utilization during the prior 2007-2008 influenza season, as well as vaccination during that season.

Overall, 153 patients, or 81%, had seen their physician for asthma management or treatment sometime during the flu season, whether for a regular checkup or after an acute problem.

"Most [patients] have an office visit at which influenza vaccine could be given," wrote the authors, or during which a strong recommendation to receive the shot could be communicated.

The data also revealed a lack of education about influenza vaccine among these high-risk children and their parents. When the 82 parents who reported that their child did not receive a flu vaccine were asked why, some of the top reasons included that no one had told them that a flu shot was needed for their child (15%); they thought that their child did not need one (18%); or were concerned that the influenza vaccine would result in their child getting the flu (10%).

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Although 70% of patients reported receiving a recommendation from their physician in this study, Dr. Dombkowski said in an interview that physicians can do better. He referenced a study he conducted several years ago in a different setting, which showed that only 20% of asthmatic patients had received the flu shot. "Meanwhile, over 60% of these kids [in the study] had been in the office during flu season," he said, revealing the "missed opportunities" for influenza vaccine education, recommendation, and administration.

Dr. Dombkowski disclosed that the study was funded by the Blue Cross Blue Shield of Michigan Foundation. ■

Response to Influenza Vaccine May Be Blunted 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.

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," said 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 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 in the current study had high baseline titer levels, which would make it more difficult to achieve positive seroconversion, acknowledged Dr. Leng. 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%) participants reported signs and symptoms of flu-like illness during the 2007-2008 flu season, although laboratory confirmation of a diagnosis of influenza was not performed. No influenza-related deaths were reported.

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 and they included hypertension (67%), osteoarthritis (45%), and dyslipidemia (38%).

Dr. Leng and associates reported no conflicts of interest. The study was sponsored by the National Institute on Aging and the American Federation for Aging Research. ■

Prior Antibiotic Use Could Increase Resistant UTI Risk

BY MIRIAM E. TUCKER

BALTIMORE — Antibiotic exposure within the previous 30 days increased the risk for an antimicrobial-resistant first-time urinary tract infection nearly fourfold in a retrospective cohort study of 533 healthy children aged 6 months to 6 years.

The finding suggests that clinicians should obtain a recent history of antimicrobial exposure in patients presenting with a new urinary tract infection (UTI) and select a different class of antibiotic for empiric therapy than the one the patient had previously received, Dr. Amanda A. Paschke said at the annual meeting of the Pediatric Academic Societies.

The children in the study had been diagnosed with their first UTI at one of 27 outpatient pediatric practices between July 1, 2001, and May 31, 2006. Most (92%) were female, two-thirds (60%) were white, and two-thirds (61%) were between the ages of 1 and 4 years. One-fifth (21%) had been exposed to antibiotics within the previous 120 days of the UTI, 14% within 60 days, and 8% within 30 days.

Otitis media was the most common indication for the prior antimicrobial prescriptions (51%), followed by sinusitis (11%), pharyngitis (10%), and dysuria (10%). "Many of the prescriptions were for indications that may not benefit from antibiotic treatment," noted Dr. Paschke of Children's Hospital of Philadelphia.

The most common resistant organism was *Escherichia coli* (80%). Nearly half (46%) of the resistant infections were resistant to ampicillin, 17% to trimethoprim-sulfamethoxazole, and 15% to amoxicillin clavulanate, with less than 10% resistant to first- or third-generation cephalosporins.

Exposure to amoxicillin within the previous 0-30 days was associated with a nearly fourfold increased risk for an ampicillin-resistant UTI (adjusted odds ratio, 3.6), as well as for a UTI with resistance to amoxicillin clavulanate (adjusted OR, 3.9). Exposure to amoxicillin within 31-60 days increased the risk for an ampicillin-resistant UTI by 2.8-fold.

The predicted probability of an ampicillin-resistant UTI was 67% within 30 days of exposure to amoxicillin, 62% within 60 days, and 38% beyond 60 days. The predicted probability of amoxicillin clavulanate resistance was 37% within 30 days of exposure and was relatively low (13%-15%) beyond 60 days, Dr. Paschke said.

In addition to avoiding prescribing the same antimicrobial to treat a new infection that a patient recently received for a previous infection, she recommended other strategies to limit antimicrobial resistance: Use a "wait and see" prescription approach for acute otitis media, prescribe the narrowest-spectrum antimicrobials possible, use short-course antimicrobial regimens when appropriate, and avoid antimicrobials altogether for indications such as most upper respiratory infections for which antimicrobials are unlikely to be of benefit, she advised.

Dr. Paschke stated that she had no relevant conflicts of interest. ■