Study Estimates H1N1 Vaccine Efficacy at 72%

The results of this study should be interpreted with caution because of the 2009-2010 pandemic context.

BY ROBERT FINN

FROM PLOS MEDICINE AND THE CENTERS FOR DISEASE CONTROL AND PREVENTION

The vaccine for pandemic 2009 H1N1 influenza was about 72% effective across seven European countries, according to findings from a case-control study.

"The results of this study provide early estimates of the pandemic influenza vaccine effectiveness suggesting that the monovalent pandemic vaccines have been effective. The findings also give an indication of the vaccine effectiveness" for the influenza A(H1N1) 2009 strain included in the 2010-2011 seasonal vaccines, although specific vaccine effectiveness studies will have to be conducted to verify if similar rates of effectiveness are observed with 2010-2011 trivalent vaccines, Marta Valenciano, a veterinarian and epidemiologist at EpiConcept, Paris, and colleagues wrote in an accompanying summary of the study.

The study involved 2,902 patients with influenzalike illnesses (ILI) from France, Hungary, Ireland, Italy, Portugal, Romania, and Spain during the 2009-2010 season. All had throat swabs fewer than 8 days after the onset of symptoms. Among those patients, roughly 32% tested positive for pandemic H1N1.

Investigators compared these confirmed H1N1 cases to patients with ILI who tested negative for any influenza virus.

Overall, 7% of all the patients – ranging from 0% in Italy to 29% in Hungary – had received at least one dose of the H1N1 vaccine more than 14 days before symptom onset.

In other influenza-related reports, the U.K. Department of Health has warned physicians to watch for bacterial coinfections in patients with influenza.

The investigators adjusted their effectiveness results for confounding factors, including age; sex; presence and severity of chronic conditions; pregnancy; obesity; smoking history; number of practitioner visits in the preceding 12 months; use of influenza antivirals; and seasonal influenza vaccination during the previous two seasons.

As expected, vaccines that were delivered fewer than 8 days before the onset of ILI symptoms showed a relatively low adjusted effectiveness rate (19%), compared with 67% among those who were vaccinated more than 14 days before symptom onset.

The investigators also found that the 2009-2010 seasonal influenza vaccine was only 9.9% effective against H1N1 (PLoS Med. 2011 Jan. 11 [doi:10.1371/journal.pmed.1000388]).

The results of this study should be interpreted with caution because of limitations in the pandemic context (such as late timing of the studies, low incidence, and low vaccine coverage leading to imprecise estimates) and potential biases because of the study design, confounding factors, and missing values. The researchers recommended that, in the future, the sample size per country be enlarged in order to allow for precise pooled and stratified analyses.

Other influenza-related reports included the following:

► The U.K. Department of Health has warned physicians to watch for bacterial coinfections in patients with influenza. According to a report in Pulse, an online newsletter for general practitioners, a "number of data sources suggest recent increases in some bacterial infections, particularly invasive Group A streptococcal infection and meningococcal disease." The report urged physicians to start antiviral and antibiotic treatment as soon as possible, when appropriate.

► According to a U.S. Centers for Disease Control and Prevention report, as of Jan. 1, ILI activity was high in Alabama, Georgia, Illinois, Louisiana, Mississippi, Oklahoma, and New York City; moderate in Nevada and New Jersey; and minimal to low in the rest of the country.

► Of 4,911 specimens from people with ILI, 20.3% tested positive for influenza, according to a CDC weekly report.

Among those, 34.1% proved to be influenza B, and 65.9% were influenza A. No subtyping was performed in 52.3% of the influenza A samples, 41% were subtype A(H3), and 6.7% were A(2009 H1N1).

Among the 19 authors of the European study, several disclosed relationships with various pharmaceutical companies and European government agencies. The European Centre for Disease Prevention and Control funded the study. ■

Day Care: Infections Up in Short Term, Down Long Term

BY MARY ANN MOON

FROM ARCHIVES OF PEDIATRICS AND ADOLESCENT MEDICINE

Children who attend large day-care programs before age 2 1/2 years show a short-term increase in the number of infections they acquire but are protected against infections during the elementary school years, according to a report.

"This study provides reassuring evidence for parents that their choices regarding child care (group size and age at enrollment) should not have a major effect on the health of their children from a long-term perspective, at least regarding respiratory tract infections, gastrointestinal tract infections, and ear infections," said Sylvana M. Côté, Ph.D., of the department of social and preventive medicine, Ste-Justine Hospital, Montreal, and her associates.

"Physicians may reassure parents whose children initiate large group child care early that their child's experiencing infections is temporary and is likely to provide them with greater immunity during the elementary school years," they noted.

Dr. Côté and her colleagues performed what they described as the first prospective, population-based study to examine the associations between different day-care experiences and three types of infections from early preschool age through mid-elementary school age. They used data from the Quebec Longitudinal Study of Child Development to follow a representative sample of 1,238 study subjects every year from 5 months of age in 1998 through 8 years of age in 2006.

'Physicians may reassure parents whose children initate large group child care early that their child's experiencing infections is temporary and is likely to provide them with greater immunity during the elementary school years.'

The researchers statistically controlled for potentially confounding variables such as maternal education level, maternal health status, low birth weight, breast-feeding status, ethnicity, and family size.

In all, 244 children (approximately 20%) were cared for at home and did not attend day care of any size before enrolling in school. An additional 402 children (32%) attended a small, home-based day-care program for three to eight children younger than age 2 1/2, while 249 (20%) attended a large day-care program (up to 10 groups of 8-12 children per "class") before age 2 1/2. The remaining children attended either small or large day-care programs after age 2 1/2.

Compared with home-cared children, those who started large day-care programs early in their preschool years had higher rates of respiratory and ear infections around the time they enrolled. However, they did not have higher rates of respiratory and ear infections at ages 3-4. More important, they had lower rates of such infections during the elementary school years, a time "when absenteeism carries more important consequences," the investigators said (Arch. Pediatr. Adolesc. Med. 2010;164:1132-7).

Children who started large day-care programs later in their preschool years had higher rates of respiratory and ear infections at that time, but did not differ from home-cared children at any other time.

Children who started small day-care programs in either their early preschool years or late preschool years did not differ from home-cared children at any time. It thus appears that large day-care programs protect against future infections while small programs do not, perhaps because the large programs "provide exposure to a larger number of serotypes (and infectious agents) and … this wider exposure is necessary for preschoolers to-acquire immunity," they said.

Day care was not associated with gastrointestinal infections at any developmental period.

When the data were analyzed across the entire study period up to age 8 years, there was no difference in the overall number of infections between children who attended only home care before elementary school and children who attended either type of day care before elementary school. ■

VITALS

Major Finding: Children who attended large day-care programs before age 2 1/2 years had higher rates of respiratory and ear infections only around the time of enrollment, compared with those who were cared for at home or who attended small day-care programs. However, they had fewer respiratory and ear infections once in elementary school, so that the overall number of infections was similar among the three groups.

Data Source: Secondary analysis of data on 1,238 children participating in the Quebec Longitudinal Study of Child Development in 1998-2006.

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