

Results. Many respondents were not aware of all the health benefits of breast-feeding (eg, one third of residents and physicians were unaware of the beneficial effect of breast-feeding on gastroenteritis and otitis media). Clinical management knowledge was surprisingly low on advice for mothers who expressed concern about insufficient milk supply and infants with jaundice as well as recommendations regarding formula supplementation and reasons for breast-feeding termination. Given clinical management scenarios, 43% of both residents and physicians responded with incorrect advice regarding insufficient milk supply. Concerning infants with jaundice, 66% of residents and 62% of physicians responded incorrectly. The majority of residents and physicians agreed that their role in breast-feeding promotion activities was important. Respondents with a previous personal breast-feeding experience were three times more likely than those without such an experience to be confident promoters of breast-feeding. They were also more likely to respond correctly to questions about the clinical management scenarios. Approximately 50% of both residents and physicians rated their breast-feeding training in residency as inadequate.

Recommendations for clinical practice. This cross-sectional survey raises concern that family physicians are not adequately trained for their unique role as breast-feeding promoters both pre- and postnatally. Family physicians who provide prenatal care, along with those who see infants, should further educate themselves on the benefits of breast-feeding and the clinical management of breast-feeding mothers. Residency faculty should recognize and address the need for more extensive breast-feeding training and education.

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EFFICACY OF INFLUENZA VACCINE IN THE ELDERLY

TITLE: The efficacy of influenza vaccination in elderly individuals: a randomized double-blind placebo-controlled trial

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Clinical question. Is influenza vaccination efficacious in the elderly?

Background. Influenza vaccination has been shown to have a protective effect among young healthy volunteers, but because the majority of mortality related to influenza occurs in adults 65 years and older, the Advisory Committee on Immunization Practices has recommended vaccination for the elderly since the early 1960s (*Williams WW, Hickson MA, Kane MA, Kendal AP, Spika JS, Hinman AR. Immunization policies and vaccine coverage among adults. The risk for missed opportunities. Ann Intern Med 1988; 108:616-25*). Influenza vaccine has not been well tested in this age group. The most informative study to determine influenza vaccination efficacy would be a randomized, placebo-controlled double-blind study; however, because of human subject protection concerns, it would be difficult to conduct such a study in this country.

Population studied. The study population was taken from 15 family medicine practices in the Netherlands during the winter of 1991-1992. All persons 60 years of age and older who had not yet been vaccinated that season (a total of 9907) were invited to enroll. Of these, 1838 (19%) agreed to participate. Among participants, 238 had received an influenza vaccination in 1989, 1990, or both, and 490 reported a history of cardiac, pulmonary, or metabolic problems. Nonparticipants were queried to determine their reasons for not participating. Reasons given were not related to vaccine efficacy. Randomization after enrollment should have minimized any bias effects.

Study design and validity. Patients were divided into four groups or strata based on their diagnoses (cardiac disease, pulmonary disease, diabetes mellitus or other, and healthy), then randomized within each of these groups to receive either vaccine or placebo. Venous blood samples for serological testing of influenza infection were taken before vaccination, and at 3 weeks and 5 months after vaccination. Participating physicians also noted any study participants who presented with an influenza-like illness, in which case additional serological testing for influenza was performed. As a final indicator of possible influenza infection, patients were sent a questionnaire regarding influenza symptoms at 10 and 23 weeks, and the questionnaires were evaluated using two different criteria to determine the presence of influenza. All researchers were blinded to vaccination status. It should be noted that the vaccine strains and the epidemic strains were a fairly close match during the study year, which may have increased the vaccine's efficacy.

Outcomes measured. The efficacy of the vaccine was reported as the relative risk (RR) of influenza in vaccinated compared with unvaccinated patients. An RR <1.0 is consistent with a protective effect of the vaccine. This

effect is statistically significant if the 95% confidence interval (CI) for the relative risk does not include 1.0. A number of such comparisons were made using different criteria for the definition of influenza among different demographic strata.

Results. Vaccine and placebo groups were similar in age, sex, chronic medical problems, previous influenza immunizations, and influenza serology status before immunization. Depending on the criteria for influenza diagnosis, up to a 50% reduction in influenza was found in those who received the active vaccine. The greatest reduction was among the group whose diagnosis of influenza was based on serology (RR=0.50, 95% CI=0.35 to 0.61). If the analysis was restricted to the 10-week period of the country's influenza epidemic, the RRs were even lower

and the apparent effect of the vaccine greater. Although the vaccine efficacy appeared lower in the over-70 age group, the number of participants in this group was smaller than in other comparison groups.

Recommendations for clinical practice. The results of this study are important as validation of the currently recommended practice, ie, annual influenza immunization of the elderly. Such a study would be ethically difficult to undertake in this country, but the results can be generalized to all patient populations because of the strong study design.

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