Clinical Digest

Infectious Disease

Can a Children's Vaccine Help Adults with HIV?

Beginning in 2000, a pneumococcal conjugate vaccine containing seven serotypes was recommended for routine use in infants. Invasive pneumococcal disease (IPD) among young children declined steeply as a result. Widespread use of the vaccine was also associated with reduced disease in adults—a "herd effect" presumably due to the reduced transmission from children. Until recently, however, the trend of IPD in HIV-infected adults over this period had not been studied.

Now, led by a CDC researcher, investigators have completed a laboratory-based surveillance through seven Active Bacterial Core surveillance areas of the Emerging Infections Program network that identifies all cases of IPD in HIV-infected adults aged 18 to 64 between 1998 and 2003.

Within the surveillance population of 10.8 million, 8,582 adults developed IPD. Of these, 2,013 had HIV infection or AIDS. From the baseline period of 1998 to 1999, researchers calculated an annual incidence of 13 IPD cases per 100,000 among adults without HIV. By 2003, the rate dropped by 30%, to nine cases per 100,000.

Among adults with AIDS, by 2002, the incidence dropped 18%, from 441 to 360 cases per 100,000. In 2003, the incidence was 384 per 100,000, a reduction of 13% from baseline. The ratio of IPD in HIV-infected adults to the number of adults living with AIDS also fell 19%—from 1,127 to 919 per 100,000 AIDS population in 2003.

The observed reductions in IPD cases among the adults with HIV were limited to the serotypes included in the conjugate vaccine. These decreased by 62% from baseline, while the ratio of cases caused by vaccine-related serotypes and nonvaccine serotypes increased by 45% and 44%, respectively.

The researchers found that IPD caused by nonvaccine serotype pneumococci increased significantly among black men with HIV, and IPD caused by vaccine-related serotypes increased significantly among black women with HIV. For white men with HIV, however, there were no such increases. Based on results of a previous study, which found that close contact with children was more common among black populations than white, researchers in the current study suggest different exposures to children among these groups may have influenced this pattern.

Although HIV-infected adults from all surveillance sites seem to have benefited from reduced transmission of vaccine serotype pneumococci, which the researchers attribute to the use of conjugate vaccine in children, they say adults in close contact with children may have been exposed more to circulating nonvaccine type strains.

Source: *Ann Intern Med.* 2006;144:1–9.

Geriatrics

BMI and Cognitive Impairment

Being overweight may improve cognitive function for older adults, say researchers from Harvard Medical School, Hebrew Rehabilitation Center for Aged, and the VA Boston Healthcare System, all in Boston, MA; National Taiwan University Hospital, Taipei; New England Research Institutes, Inc., Watertown, MA; and Uniformed Services University of Health Sciences, Silver Spring, MD. They came to this conclusion after studying a cross-sectional sample of adult participants aged 65 to 94 from the Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE) trial.

The ACTIVE trial evaluated the effects of three cognitive training interventions on mental ability in older adults. Researchers in the current study excluded underweight adults and those whose body mass index (BMI) was not available, resulting in a final sample of 2,684 adults.

After multivariate adjustment for age, sex, race, years of education, intervention group, study site, and cardiovascular risk factors, adults with a BMI of 25 kg/m^2 or greater performed better on reasoning and visuospatial speed of processing tests compared to those with a BMI of 18.5 to 24.9 kg/m^2. These findings support data from another recent study, which found that adults with a BMI greater than 23 kg/m^2 had a lower risk of developing cognitive impairment after five years of follow-up. Obese patients (BMI of 30 to 34.9 kg/m^2) also did better on the visuospatial tests than the normal-weight adults, but didn't demonstrate "compelling cognitive superiority" on memory and reasoning tests.

By way of explanation, the researchers point out that, in older people, BMI is a strong predictor of skeletal muscle mass, which seems positively related to cognitive abilities. Furthermore, greater BMI is associated with better cardiac output and stroke volume and may improve cerebral blood flow and cognition.

Based on their findings, the researchers say there is some evidence to suggest that "even normal BMI may not represent a desirable state for cognition in older adults."

Source: *J Am Geriatr Soc.* 2006;54:97–103.