

# Pertussis Booster Protects Teens Beyond 5 Years

BY MARY ANN MOON  
Contributing Writer

The acellular pertussis booster vaccine provides immunity that persists beyond 5 years in adolescents, and it likely will do the same in adults, reported Dr. Kati Edelman of Turku (Finland) University Hospital and her associates.

In what they described as the first long-term study that assessed both cell-mediated

and humoral immunity conferred by the pertussis booster, the researchers found that both types of immunity persisted for 5 years or more in subjects who had received the booster at ages 11-13 years.

This indicates that the interval between routine booster immunizations can be extended beyond 5 years, they said (*Clin. Infect. Dis.* 2007;44:1271-7).

In an editorial comment accompanying this report, Dr. James D. Cherry of the

University of California, Los Angeles, wrote that an immunization program of boosters every 10 years for adolescents and adults would curtail the spread of pertussis in the general population, which would in turn spare infants, who are the most vulnerable to the infection.

"It is time for those who care for adults to learn from pediatrics that universal immunization works and, if implemented, would do much to control the spread of pertussis in the United States," he noted.

There are as many as 3.3 million cases of pertussis in adolescents and adults in the United States every year, most of which are not recognized as pertussis and are misdiagnosed as bronchitis or upper respiratory infection.

"It should also be noted," wrote Dr. Cherry, "that the rates of reported pertussis are 40- to 160-fold less common than actual illness rates, and that asymptomatic infections are 4-22 times more common than symptomatic infections" in these age groups.

Symptomatic adolescents and adults are the major source of exposure for infants, he noted (*Clin. Infect. Dis.* 2007; 44:1278-9).

In their study, Dr. Edelman and her associates followed 296 subjects aged 15-18 years who had received a pertussis booster 52-74 months previously, then narrowed the group down to 261 who had received the Tdap (Boostrix, GlaxoSmithKline Biologicals) booster.

All had been immunized against pertussis as babies. For comparison, 38 sub-

jects who had not received the booster also were studied.

A total of 79% of the adolescents who received the booster showed persistent cell-mediated immunity to any of the three pertussis antigens.

The duration of humoral immunity was comparable to that achieved with primary pertussis immunization.

All subjects showed detectable filamentous hemagglutinin IgG, 98% had detectable pertactin IgG, and 76% had detectable pertussis toxin IgG.

IgG antibodies declined somewhat over time but remained significantly elevated, compared with prebooster levels.

It was notable that among subjects who lost pertussis toxin antigen IgG, nearly half had retained cell-mediated immunity to pertussis toxin, which may well have continued to protect them against the infection, Dr. Edelman and her associates said.

Both antibody levels and pertussis-specific cell-mediated immunity levels were higher in subjects who received the booster than in controls.

"Our results correspond with those of the Adult Pertussis Trial conducted in the United States in which pertussis antibody persistence was observed for 18 months after booster vaccination of adolescents and adults with a monovalent acellular pertussis vaccine with the same pertussis components and antigen amounts as the vaccine used in the present study," the researchers added.

GlaxoSmithKline Biologicals provided materials for the study, and two of the researchers have been employed by the company, it was disclosed. ■



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<sup>1</sup> Data on file, Merz Pharmaceuticals, Nov. 2004. <sup>2</sup> Wolters Kluwer Health. Pediatric survey. August 2006.



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