PCV-7 Linked to Rise in Serotype 19A Strains

VITALS

Major Finding: Sixteen percent of those in the 2 + 1 dose group tested positive for new serotype 19A acquisition, which was significantly higher than the 9% rate in the control group; 13% of children in the 2-dose group did so, but this was not significantly higher than in the control group.

Data Source: A post hoc analysis of data from a randomized controlled trial of vaccination in 948 children in the western Netherlands.

Disclosures: This study was supported by the Dutch Ministry of Health. Dr. van Gils' associates reported ties to GlaxoSmithKline, Wyeth/Pfizer, Baxter, and Novartis.

BY MARY ANN MOON

FROM JAMA

Introducing the heptavalent pneumococcal conjugant vaccine into routine infant immunization programs appears to raise the rate of nasopharyngeal acquisition of pneumococcal serotype 19A strains in the first 2 years of life, according to a report in the Sept. 8 issue of JAMA.

Researchers had noted a rapid increase in the presence of serotype 19A strains, which are often multidrug resistant, soon after the widespread implementation of heptavalent pneumococcal conjugant vaccine (PCV-7) immunization in several countries.

However, they were unsure of a definite link between the vaccine and the emergence of 19A strains because those strains have also increased in some countries without the PCV-7 vaccine.

"We now have demonstrated, to our knowledge for the first time, the facilitating role of PCV-7 in nasopharyngeal acquisition of serotype 19A," said Dr. Elske J. M. van Gils of Wilhelmina Children's Hospital, University Medical Center Utrecht, the Netherlands, and her associates.

"In view of the proven disease potential of serotype 19A for otitis media and invasive pneumococcal disease and its observed association with antibiotic resistance, vaccines of broader coverage including protection against serotype 19A may further aid pneumococcal disease prevention," said Dr. van Gils and her associates.

The researchers performed a post hoc analysis of data from a randomized controlled trial in the western Netherlands when PCV-7 vaccines were first introduced.

The 948 study subjects had been randomly assigned to receive PCV-7 at ages 2 and 4 months (the 2-dose group), or PCV-7 at ages 2, 4, and 11 months (the 2 + 1–dose group), or no PCV-7 (the unvaccinated control group).

Nasopharyngeal swabs were then obtained at ages 6 weeks and 6, 12, 18, and 24 months to test for the presence of *S. pneumoniae* and its susceptibility to antibiotics.

The cumulative proportion of children with serotype 19A was significantly higher at the age of 12 and 18 months in both the 2-dose and 2 + 1–dose groups than in the unvaccinated group, but not at 6 months, Dr. van Gils and her colleagues reported (JAMA 2010;304:1099-106).

Sixteen percent of those in the 2 + 1–dose group tested positive for new serotype 19A acquisition, which was significantly higher than the 9% rate in the control group; 13% of children in the 2-dose group did so, but this was not significantly higher than in the control group.

This included the diffuse proliferation of several serotype 19A strains as well as the appearance of new strains.

"Antibiotic resistance or antibiotic consumption could not account for the observed increase," as both resistance and use of antibiotics were extremely low in this population, Dr. van Gils and her colleagues noted.

One possible explanation is that the reduction in colonization of covered serotypes after vaccination "creates a vacant nasopharyngeal niche where other nonvaccine serotypes, in particular certain 19A clones, may expand," they proposed. ■

Pages 20a—20b