Data Suggest RotaTeq May Not Raise The Risk of Intussusception in Infants

ATLANTA — The rotavirus vaccine RotaTeq is not associated with an increased risk of intussusception in infants during either the 1- to 7-day period after vaccination or the 1- to 21-day period, according to data from the U.S. Vaccine Adverse Event Reporting System and the Vaccine Safety Datalink.

However, ongoing monitoring will be needed to fully assess the safety profile of the human-bovine reassortant rotavirus vaccine, researchers said at the June meeting of the Advisory Committee on Immunization Practices of the Centers for Disease Control and Prevention. The findings were reported in part in the June issue of Pediatrics (2008;121:1206-12).

The safety of the vaccine has been under scrutiny because a previous rotavirus vaccine, Rotashield, was associated with intussusception. It was pulled from the market in 1999 after reports from the U.S. Vaccine Adverse Event Reporting System (VAERS) found it had a 37-fold elevated risk for intussusception in the 3-7 days after the first dose.

Dr. Penina Haber of the Immunization Safety Office at the CDC presented the VAERS data for RotaTeq, including sensitivity analysis to compensate for incomplete reporting to the passive system and to estimate the number of doses administered. Between RotaTeq’s licensure on Feb. 1, 2006, through March 31, 2008, VAERS received 2,460 reports of adverse events associated with the vaccine; of which 26% were serious. The most frequently reported events were diarrhea and vomiting, and 44% of all events involved the first of the three vaccine doses. During that time period, Merck & Co. distributed a total of 14,274,551 doses of RotaTeq.

The reports included 267 confirmed cases of intussusception, of which 91 were reported 1-21 days after receipt of the vaccine; and 48 of those 91 (53%) were reported within 1-7 days. There was one death 16 days after receipt of dose two, said Dr. Haber.

In sensitivity analyses, it was estimated that if VAERS reports were complete and 100% of the vaccine had been administered, the observed rates of intussusception after any dose were lower than expected for both the 1- to 21-day period post vaccination (92 vs. 242) and the 1- to 7-day period (49 vs. 81). But if reporting and administration were at 50%, it seemed there would be a statistically significant association between administration and intussusception for the 1- to 7-day period, with relative risks of 2.25 after any dose and 4.14 after dose one.

However, VAERS is not designed to test hypotheses, said Dr. Haber. That is done by Vaccine Safety Datalink (VSD), a system designed to test hypotheses generated by VAERS by linking vaccination data from several HMOs to patients’ medical outcomes.

Dr. James Baggs, also with the CDC’s Immunization Safety Office, presented the VSD data. The system’s Rapid Cycle Analysis method is an alternative analysis of data from the prospective Vaccine Safety Datalink and several HMOs.

The researchers are also starting a Rapid Cycle Analysis of GlaxoSmithKline’s RotaShield. Mary Ellen Schneider, New York Bureau, contributed to this report.

Rotavirus Season Is Later, Less Severe Than Past 15

ATLANTA — Rotavirus activity in the ongoing 2007-2008 season in the United States seems to have been delayed in onset by 2-4 months and to have diminished in magnitude by more than 50%, compared with the previous 15 seasons, coinciding with increasing rotavirus vaccine coverage.

The good news, from an interim analysis of data from the National Respiratory and Enteric Virus Surveillance System (NREVSS), was reported at a meeting of the Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices by Cathy Panozzo of the epidemiology branch of the CDC’s Division of Viral Diseases. The findings were reported on the same day in an early release of the CDC’s Morbidity and Mortality Weekly Report (2008;57:977-979).

Before the 2007-2008 season, rotavirus disease followed a winter-spring pattern, with a median start in mid-February, median peak in mid-March, and median end in mid-May.

In 2008, the onset of rotavirus activity occurred in late February, peaked at the end of April, and continues to decline. The proportion of acute gastroenteritis patients aged younger than 3 years who had fecal specimens that were positive for rotavirus declined from a median of 41% for the previous 15 seasons: In 2008, 13.5% of tests were positive at week 12 of the season, and 17.8% were positive at the season’s peak in April, said the MMWR.

The number of rotavirus tests done from Jan. 1 to May 3 in 2008, was 37% lower than that of the seven previous seasons, and the number of tests that were positive for rotavirus was lower by a median 78.5%.

Similarly, in a separate analysis of data from the prospective New Vaccine Surveillance Network of children aged younger than 3 years with acute gastroenteritis, 405 children were enrolled in the January-April 2006 period, and 481 in the same period of 2007, compared with 283 in 2008. Of those, the proportions with positive rotavirus tests were 51%, 54% and 6%, respectively. Ms. Panozzo said that the MMWR data, from eight sentinel U.S. sites suggest a mean 56% of infants aged 3 months received one dose of RotaTeq, and a mean of 33.7% infants aged 13 months received three doses. But because most children aged 2 years and older would have been too old to start the series when the vaccine was licensed in February 2006, the changes in rotavirus activity seem more pronounced than would be expected from the described indirect effects of the vaccine alone. Thus, vaccinating some of the population may be conferring indirect protection on unvaccinated children thereby reducing transmission to unvaccinated children, the CDC said.