Rotavirus vaccine greatly reduced gastroenteritis hospitalizations in children

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Vaccination against rotavirus, a major cause of severe acute gastroenteritis in children, dramatically decreased hospitalization rates for the infection among infants in three U.S. counties, according to a new study published in *Clinical Infectious Diseases*.

From 2006 to 2009, researchers examined the impact of the vaccine among children hospitalized for diarrhea and/or vomiting in the Cincinnati, Ohio; Nashville, Tenn.; and Rochester, N.Y., areas. In 2008, rotavirus hospitalizations among vaccine-eligible children decreased 87 to 96 percent.

Routine rotavirus vaccination of U.S. infants began in 2006, and children between the ages of 6 months and 24 months are eligible for the vaccine. During the pre-rotavirus vaccine era, rotavirus gastroenteritis was responsible for 4 to 5 percent of all U.S. pediatric hospitalizations and accounted for about 50 percent of acute gastroenteritis hospitalizations during the winter months.

According to study author Daniel C. Payne, MSPH, PhD, of the Centers for Disease Control and Prevention in Atlanta, "Our data confirm that the introduction of rotavirus vaccination among U.S. children has dramatically decreased rotavirus hospitalization rates. The reductions observed in 2008 far exceeded what was expected on the basis of vaccine coverage and effectiveness."

Even older children who were too old to have been immunized with

rotavirus vaccine appeared to benefit. The hospitalization rate decreased 92 percent among these older, unvaccinated children and is believed to have been due to the indirect protective benefits conferred by reduced rotavirus transmission from younger, vaccinated children in the household and community. However, Dr. Payne noted, "The indirect protective benefits seen in older, unvaccinated children were not observed during the following year, 2009, when rotavirus rates increased disproportionately among this age group. These findings suggest that indirect protective benefits may have provided unvaccinated, older children a single-year deferral of exposure and illness.

"Continued surveillance is needed to further assess the role of rotavirus vaccination coverage, indirect protective benefits, immunity over time, and serotypic variation upon rotavirus activity in the United States," Dr. Payne said.

More information: Direct and Indirect Effects of Rotavirus Vaccination Upon Childhood Hospitalizations in 3 U.S. Counties, www.oxfordjournals.org/our_jou … nals/cid/prpaper.pdf

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