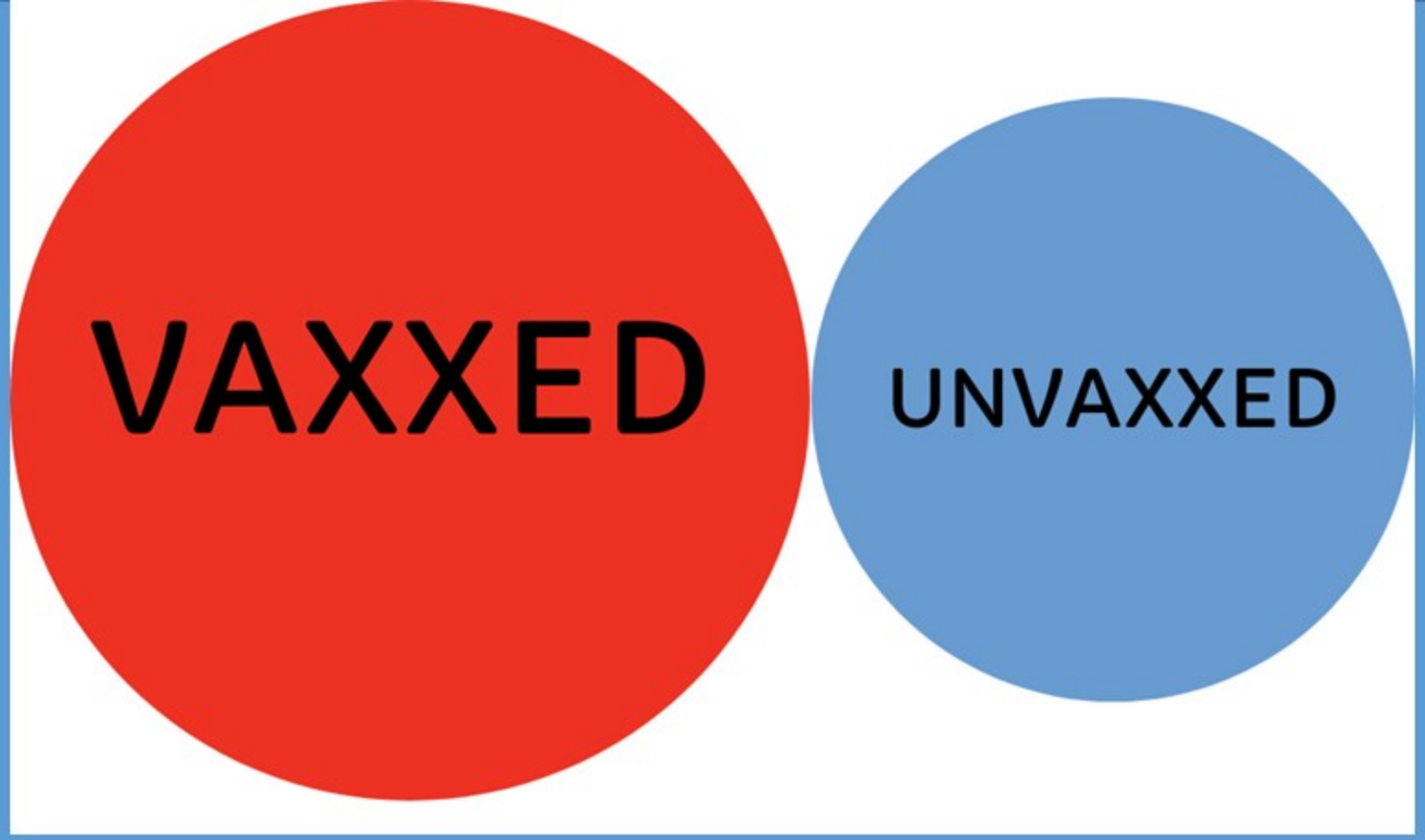


The Science (Part 4)

Children's Health Defense

H1N1 Influenza Vaccine (Pandemrix) Increases Rate of Narcolepsy in Swedish Children by 25X

NCBI Resources How To

PubMed.gov US National Library of Medicine National Institutes of Health — PubMed — Advanced

Format: Abstract — Send to

Neurology. 2013 Apr 2;80(14):1315-21. doi: 10.1212/WNL.0b013e31828ab26f. Epub 2013 Mar 13.

Increased childhood incidence of narcolepsy in western Sweden after H1N1 influenza vaccination.

Szakács A[1], Darin N, Hallböök T.

Author information

Abstract

OBJECTIVES: To assess the incidence of narcolepsy between January 2000 and December 2010 in children in western Sweden and its relationship to the Pandemrix vaccination, and to compare the clinical and laboratory features of these children.

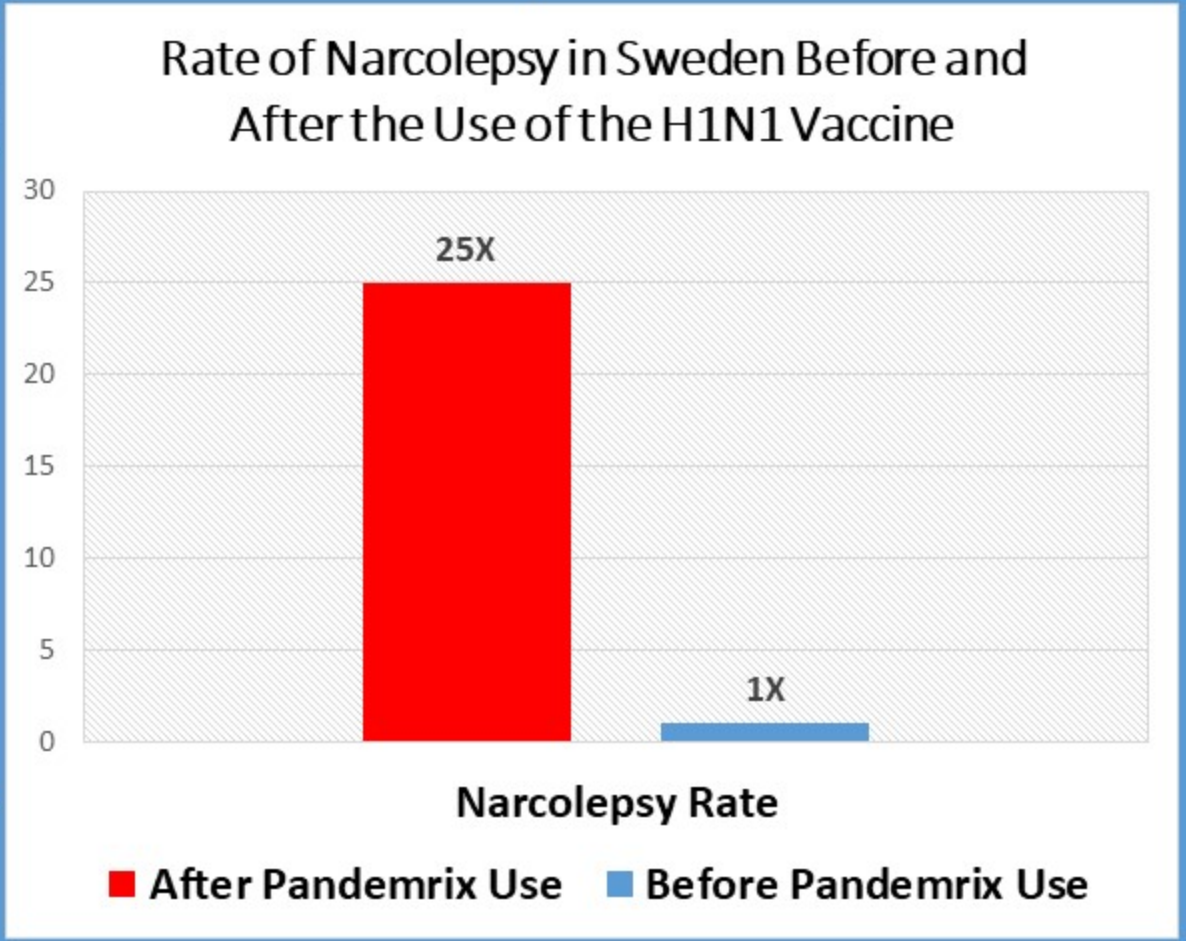
METHODS: The children were identified from all local and regional pediatric hospitals, child rehabilitation centers, outpatient pediatric clinics, and regional departments of neurophysiology. Data collection was performed with the aid of a standardized data collection form, from medical records and telephone interviews with patients and parents. The laboratory and investigational data were carefully scrutinized.

RESULTS: We identified 37 children with narcolepsy. Nine of them had onset of symptoms before the H1N1 vaccination and 28 had onset of symptoms in relationship to the vaccination. The median age at onset was 10 years. All patients in the postvaccination group were positive for human leukocyte antigen (HLA)-DQB1*0602. Nineteen patients in the postvaccination group, compared with one in the prevaccination group, had a clinical onset that could be dated within 12 weeks.

CONCLUSION: Pandemrix vaccination is a precipitating factor for narcolepsy, especially in combination with HLA-DQB1*0602. The incidence of narcolepsy was 25 times higher after the vaccination compared with the time period before. The children in the postvaccination group had a lower age at onset and a more sudden onset than that generally seen.

Comment in

Association between H1N1 vaccination and narcolepsy-cataplexy: flu to sleep. [Neurology. 2013]



"The incidence of narcolepsy was 25 times higher after the vaccination compared with the time period before. The children in the postvaccination group had a lower age at onset and a more sudden onset than that generally seen."

Children's Health Defense

Risk of Chorioamnionitis in Pregnant Women Vaccinated with Tdap Versus Pregnant Women Not Vaccinated with Tdap

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed | Advanced

Format: Abstract | Send to

JAMA. 2014 Nov 12;312(18):1897-904. doi: 10.1001/jama.2014.14825.

Evaluation of the association of maternal pertussis vaccination with obstetric events and birth outcomes.

Kharbanda EO[1], Vazquez-Benitez G[1], Lipkind HS[2], Klein NP[3], Cheetham TC[4], Naleway A[5], Omer SB[6], Hambidge SJ[7], Lee GM[8], Jackson ML[9], McCarthy NL[10], DeStefano F[10], Nordin JD[1].

Author information

Abstract

IMPORTANCE: In 2010, due to a pertussis outbreak and neonatal deaths, the California Department of Health recommended that the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine (Tdap) be administered during pregnancy. Tdap is now recommended by the Advisory Committee on Immunization Practices for all pregnant women, preferably between 27 and 36 weeks' gestation. Limited data exist on Tdap safety during pregnancy.

OBJECTIVE: To evaluate whether maternal Tdap vaccination during pregnancy is associated with increased risks of adverse obstetric events or adverse birth outcomes.

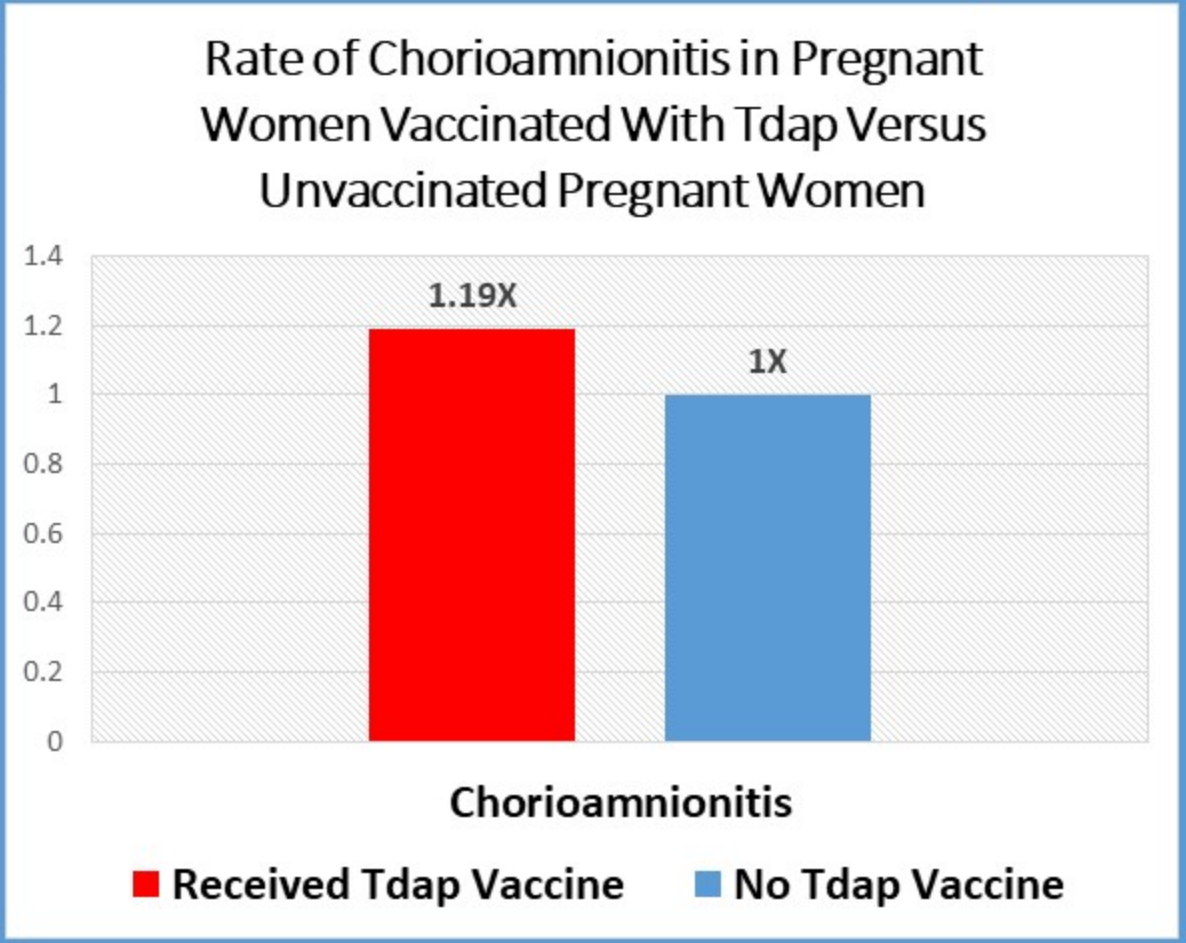
DESIGN AND SETTING: Retrospective, observational cohort study using administrative health care databases from 2 California Vaccine Safety Datalink sites.

PARTICIPANTS AND EXPOSURES: Of 123,494 women with singleton pregnancies ending in a live birth between January 1, 2010, and November 15, 2012, 26,229 (21%) received Tdap during pregnancy and 97,265 did not.

MAIN OUTCOMES AND MEASURES: Risks of small-for-gestational-age (SGA) births (<10th percentile), chorioamnionitis, preterm birth (<37 weeks' gestation), and hypertensive disorders of pregnancy were evaluated. Relative risk (RR) estimates were adjusted for site, receipt of another vaccine during pregnancy, and propensity to receive Tdap during pregnancy. Cox regression was used for preterm delivery, and Poisson regression for other outcomes.

RESULTS: Vaccination was not associated with increased risks of adverse birth outcomes: crude estimates for preterm delivery were 6.3% of vaccinated and 7.8% of unvaccinated women (adjusted RR, 1.03; 95% CI, 0.97-1.09); 8.4% of vaccinated and 8.3% of unvaccinated had an SGA birth (adjusted RR, 1.00; 95% CI, 0.96-1.06). Receipt of Tdap before 20 weeks was not associated with hypertensive disorder of pregnancy (adjusted RR, 1.09; 95% CI, 0.99-1.20); chorioamnionitis was diagnosed in 6.1% of vaccinated and 5.5% of unvaccinated women (adjusted RR, 1.19; 95% CI, 1.13-1.26).

CONCLUSIONS AND RELEVANCE: In this cohort of women with singleton pregnancies that ended in live birth, receipt of Tdap during pregnancy was not associated with increased risk of hypertensive disorders of pregnancy or preterm or SGA birth, although a small but statistically significant increased risk of chorioamnionitis diagnosis was observed.



"Among women who received Tdap at anytime during pregnancy, 6.1% were diagnosed with chorioamnionitis compared with 5.5% of unexposed women. After adjusting for site, receipt of 1 or more other vaccines in pregnancy and the propensity score, the adjusted relative risk (RR) was 1.19 (95% CI, 1.13–1.26)."

Children's Health Defense

First Dose of Rotavirus Vaccine (Rotarix) Increases Intussusception Odds by 5.8X

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed | Advanced

Format: Abstract | Send to

N Engl J Med. 2011 Jun 16;364(24):2283-92. doi: 10.1056/NEJMoa1012952.

Intussusception risk and health benefits of rotavirus vaccination in Mexico and Brazil.

Patel MM[1], López-Collada VR, Bulhões MM, De Oliveira LH, Bautista Márquez A, Flannery B, Esparza-Aguilar M, Montenegro Renoiner EI, Luna-Cruz ME, Sato HK, Hernández-Hernández Ldel C, Toledo-Cortina G, Cerón-Rodríguez M, Osnaya-Romero N, Martínez-Alcazar M, Aguinaga-Villasenor RG, Plascencia-Hernández A, Fojaco-González F, Hernández-Peredo Rezk G, Gutierrez-Ramírez SF, Dorame-Castillo R, Tinajero-Pizano R, Mercado-Villegas B, Barbosa MR, Maluf EM, Ferreira LB, de Carvalho FM, dos Santos AR, Cesar ED, de Oliveira ME, Silva CL, de Los Angeles Cortes M, Ruiz Matus C, Tate J, Gargiullo P, Parashar UD.

Author information

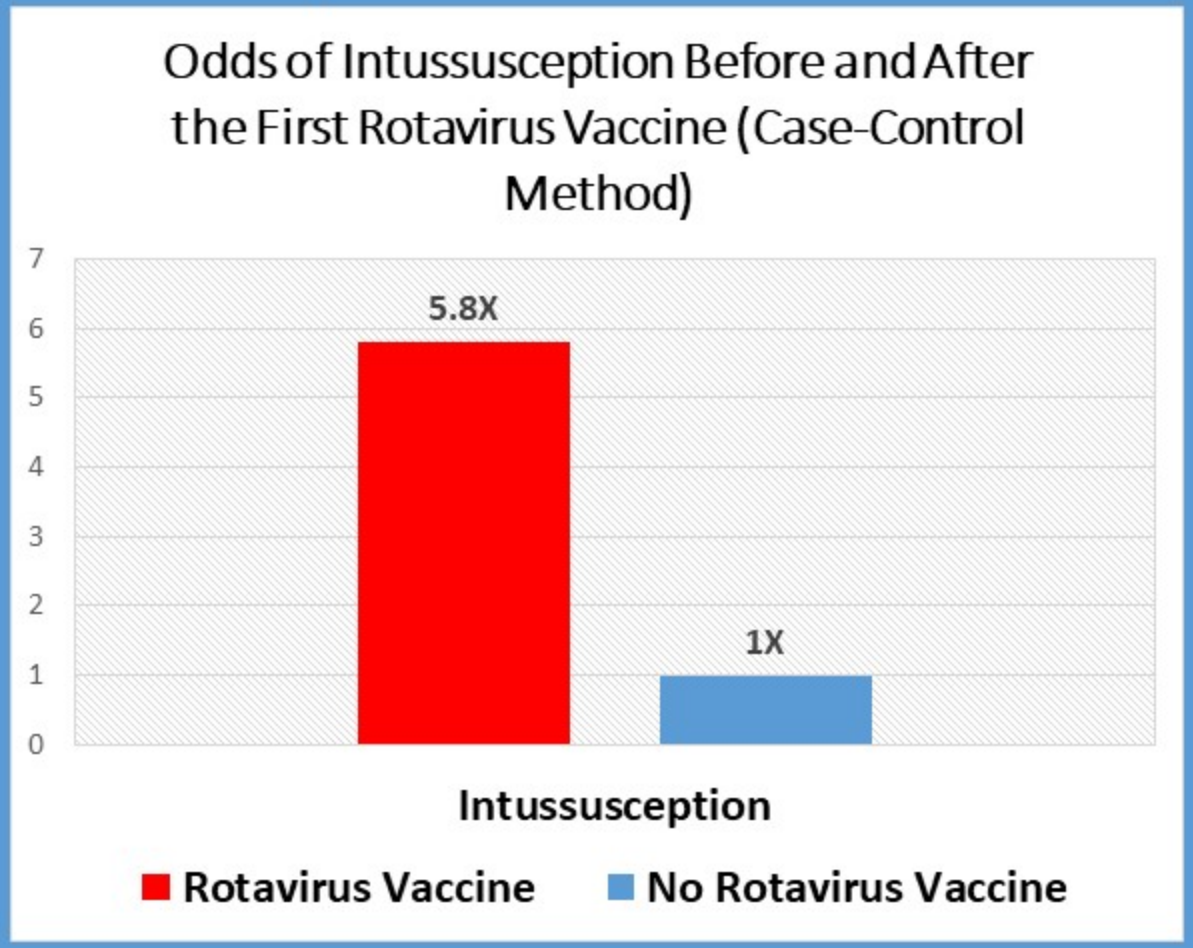
Abstract

BACKGROUND: Because postlicensure surveillance determined that a previous rotavirus vaccine, RotaShield, caused intussusception in 1 of every 10,000 recipients, we assessed the association of the new monovalent rotavirus vaccine (RV1) with intussusception after routine immunization of infants in Mexico and Brazil.

METHODS: We used case-series and case-control methods to assess the association between RV1 and intussusception. Infants with intussusception were identified through active surveillance at 69 hospitals (16 in Mexico and 53 in Brazil), and age-matched infants from the same neighborhood were enrolled as controls. Vaccination dates were verified by a review of vaccination cards or clinic records.

RESULTS: We enrolled 615 case patients (285 in Mexico and 330 in Brazil) and 2050 controls. An increased risk of intussusception 1 to 7 days after the first dose of RV1 was identified among infants in Mexico with the use of both the case-series method (incidence ratio, 5.3; 95% confidence interval [CI], 3.0 to 9.3) and the case-control method (odds ratio, 5.8; 95% CI, 2.6 to 13.0). No significant risk was found after the first dose among infants in Brazil, but an increased risk, albeit smaller than that seen after the first dose in Mexico--an increase by a factor of 1.9 to 2.6 - was seen 1 to 7 days after the second dose. A combined annual excess of 96 cases of intussusception in Mexico (approximately 1 per 51,000 infants) and in Brazil (approximately 1 per 68,000 infants) and of 5 deaths due to intussusception was attributable to RV1. However, RV1 prevented approximately 80,000 hospitalizations and 1300 deaths from diarrhea each year in these two countries.

CONCLUSIONS: RV1 was associated with a short-term risk of intussusception in approximately 1 of every 51,000 to 68,000 vaccinated infants. The absolute number of deaths and hospitalizations averted because of vaccination far exceeded the number of intussusception cases that may have been associated with vaccination. (Funded in part by the GAVI Alliance and the U.S. Department of Health and Human Services.).



"An increased risk of intussusception 1 to 7 days after the first dose of RV1 was identified among infants in Mexico with the use of both the case-series method (incidence ratio, 5.3; 95% confidence interval [CI], 3.0 to 9.3) and the case-control method (odds ratio, 5.8; 95% CI, 2.6 to 13.0)."

Children's Health Defense

Measles Vaccination Versus Measles Infection Increases the Odds of Atopy (Allergy) by 2.8X

NCBI Resources How To

PubMed.gov US National Library of Medicine National Institutes of Health

PubMed | Shaheen Lancet Aaby Measles Atopy 1996

Create RSS Create alert Advanced

Format: Abstract Send to

Lancet. 1996 Jun 29;347(9018):1792-6.

Measles and atopy in Guinea-Bissau.

Shaheen SO[1], Aaby P, Hall AJ, Barker DJ, Heyes CB, Shiell AW, Goudiaby A.

Author information

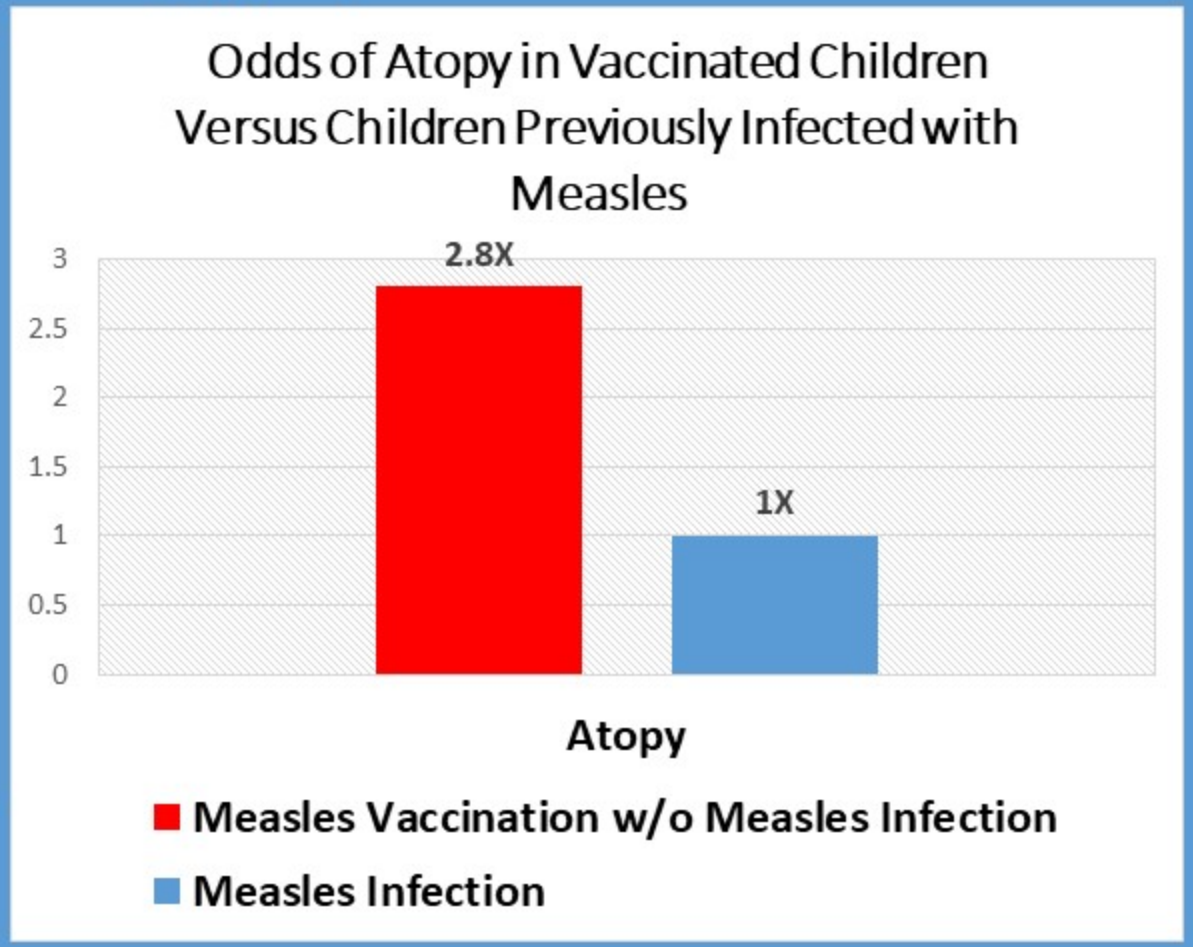
Abstract

BACKGROUND: Epidemiological studies have led to speculation that infections in early childhood may prevent allergic sensitisation but evidence to support this hypothesis is lacking. We investigated whether measles infection protects against the development of atopy in children of Guinea-Bissau, West Africa.

METHODS: We conducted a historical cohort study in Bandim, a semi-rural district of Bissau, the capital of Guinea-Bissau. 395 young adults, first surveyed in 1978-80 aged 0-6 years, were followed up in 1994. Our analyses were restricted to 262 individuals still living in Bandim for whom a measles history, documented in childhood, was judged to be reliable. We defined atopy as skin-prick test positivity (> or = 3 mm weal) to one or more of seven allergens.

FINDINGS: 17 (12.8 percent) of 133 participants who had had measles infection were atopic compared with 33 (25.6 percent) of 129 of those who had been vaccinated and not had measles (odds ratio, adjusted for potential confounding variables 0.36 [95 percent CI 0.17-0.78], p=O.O1). Participants who had been breastfed for more than a year were less likely to have a positive skin test to housedust mite. After adjustment for breastfeeding and other variables, measles infection was associated with a large reduction in the risk of skin-prick test positivity to housedust mite (odds ratio for Dermatophagoides pteronyssinus 0.20 [0.05-0.81], p=0.02; D farinae 0.20 [0.06-0.71], p=0.01).

INTERPRETATION: Measles infection may prevent the development of atopy in African children.



"17 (12.8%) of 133 participants who had had measles infection were atopic compared with 33 (25.6%) of 129 of those who had been vaccinated and not had measles"

Children's Health Defense

Higher Exposure to Thimerosal from Infant Vaccines Increases the Odds of Motor Tics (2.19X) and Phonic Tics (2.44X) in Boys

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed | thompson price 2007 thimerosal

Create RSS Create alert Advanced

Format: Abstract Send to

N Engl J Med. 2007 Sep 27;357(13):1281-92.

Early thimerosal exposure and neuropsychological outcomes at 7 to 10 years.

Thompson WW[1], Price C, Goodson B, Shay DK, Benson P, Hinrichsen VL, Lewis E, Eriksen E, Ray P, Marcy SM, Dunn J, Jackson LA, Lieu TA, Black S, Stewart G, Weintraub ES, Davis RL, DeStefano F; Vaccine Safety Datalink Team.

Author information

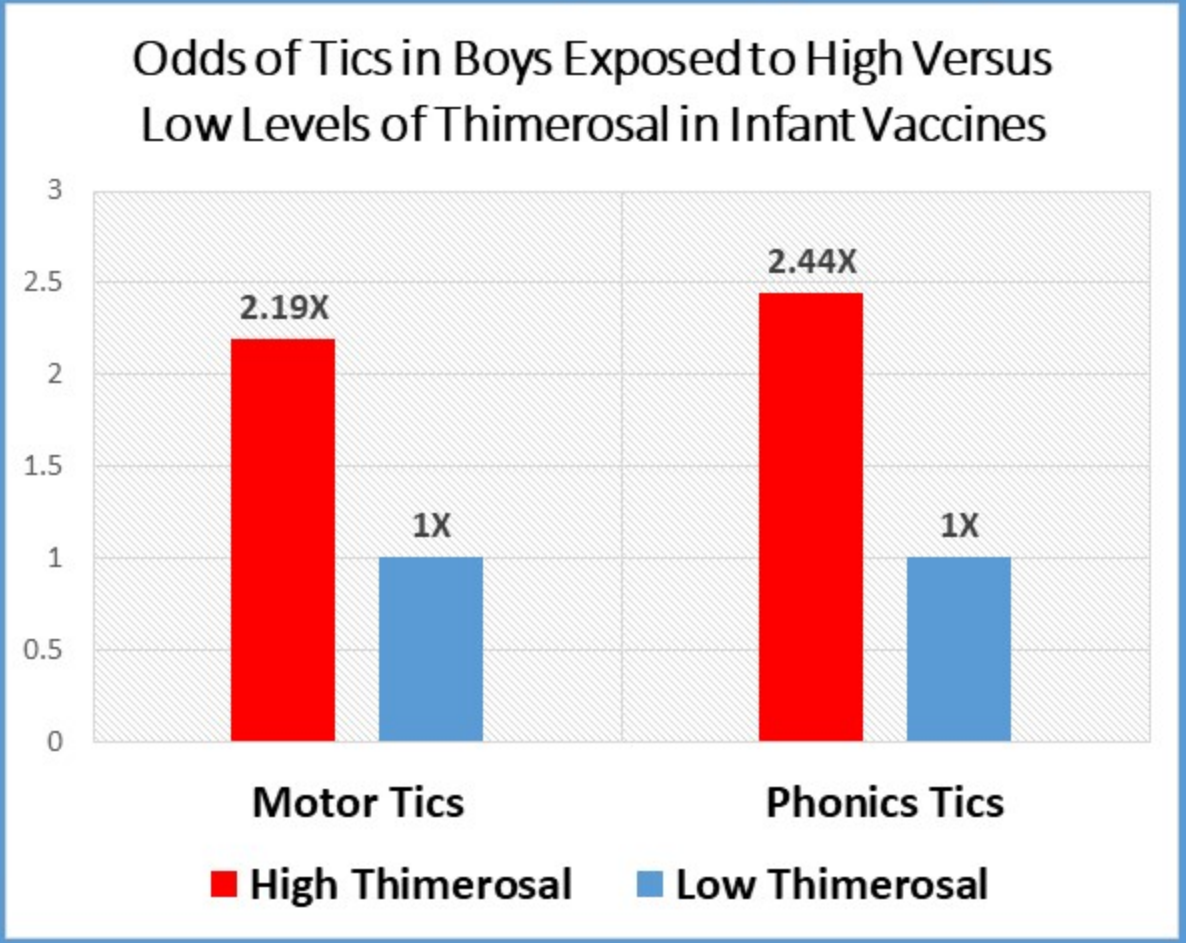
Abstract

BACKGROUND: It has been hypothesized that early exposure to thimerosal, a mercury-containing preservative used in vaccines and immune globulin preparations, is associated with neuropsychological deficits in children.

METHODS: We enrolled 1047 children between the ages of 7 and 10 years and administered standardized tests assessing 42 neuropsychological outcomes. (We did not assess autism-spectrum disorders.) Exposure to mercury from thimerosal was determined from computerized immunization records, medical records, personal immunization records, and parent interviews. Information on potential confounding factors was obtained from the interviews and medical charts. We assessed the association between current neuropsychological performance and exposure to mercury during the prenatal period, the neonatal period (birth to 28 days), and the first 7 months of life.

RESULTS: Among the 42 neuropsychological outcomes, we detected only a few significant associations with exposure to mercury from thimerosal. The detected associations were small and almost equally divided between positive and negative effects. Higher prenatal mercury exposure was associated with better performance on one measure of language and poorer performance on one measure of attention and executive functioning. Increasing levels of mercury exposure from birth to 7 months were associated with better performance on one measure of fine motor coordination and on one measure of attention and executive functioning. Increasing mercury exposure from birth to 28 days was associated with poorer performance on one measure of speech articulation and better performance on one measure of fine motor coordination.

CONCLUSIONS: Our study does not support a causal association between early exposure to mercury from thimerosal-containing vaccines and immune globulins and deficits in neuropsychological functioning at the age of 7 to 10 years.



"Among boys, higher exposure to mercury from birth to 7 months was associated with … a higher likelihood of motor and phonic tics, as reported by the children's evaluators."

Children's Health Defense

Delaying the First Three DPT Vaccine Doses Reduces Asthma Risk by 61%

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed | McDonald Huq 2008 pertussis asthma

Create RSS Create alert Advanced

Format: Abstract Send to

J Allergy Clin Immunol. 2008 Mar;121(3):626-31. doi: 10.1016/j.jaci.2007.11.034. Epub 2008 Jan 18.

Delay in diphtheria, pertussis, tetanus vaccination is associated with a reduced risk of childhood asthma.

McDonald KL[1], Huq SI, Lix LM, Becker AB, Kozyrskyj AL.

Author information

Abstract

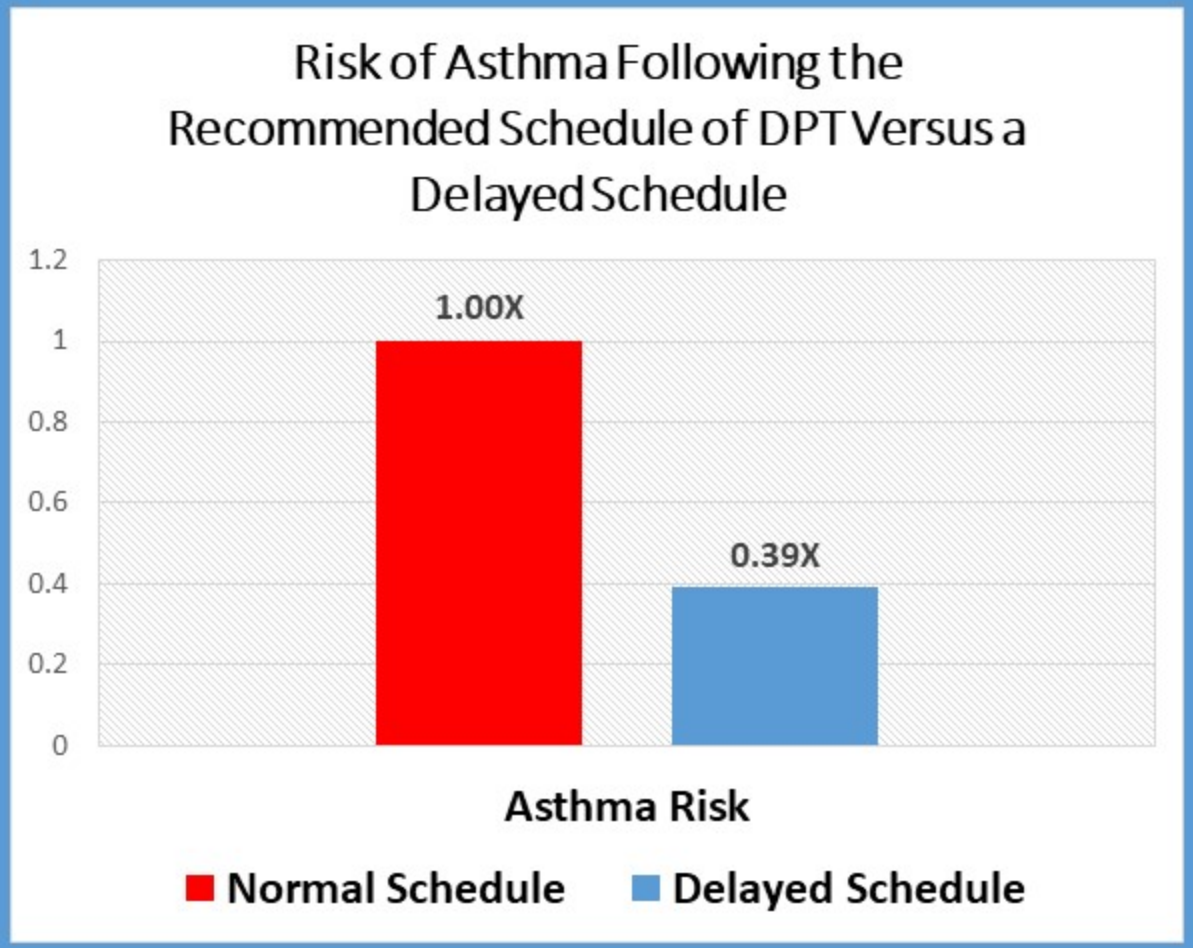
BACKGROUND: Early childhood immunizations have been viewed as promoters of asthma development by stimulating a T(H)2-type immune response or decreasing microbial pressure, which shifts the balance between T(H)1 and T(H)2 immunity.

OBJECTIVE: Differing time schedules for childhood immunizations may explain the discrepant findings of an association with asthma reported in observational studies. This research was undertaken to determine whether timing of diphtheria, pertussis, tetanus (DPT) immunization has an effect on the development of childhood asthma by age 7 years.

METHODS: This was a retrospective longitudinal study of a cohort of children born in Manitoba in 1995. The complete immunization and health care records of cohort children from birth until age 7 years were available for analysis. The adjusted odds ratio for asthma at age 7 years according to timing of DPT immunization was computed from multivariable logistic regression.

RESULTS: Among 11, 531 children who received at least 4 doses of DPT, the risk of asthma was reduced to (1/2) in children whose first dose of DPT was delayed by more than 2 months. The likelihood of asthma in children with delays in all 3 doses was 0.39 (95% CI, 0.18-0.86).

CONCLUSION: We found a negative association between delay in administration of the first dose of whole-cell DPT immunization in childhood and the development of asthma; the association was greater with delays in all of the first 3 doses. The mechanism for this phenomenon requires further research.



"Among 11,531 children who received at least 4 doses of DPT, the risk of asthma was reduced to (1/2) in children whose first dose of DPT was delayed by more than 2 months. The likelihood of asthma in children with delays in all 3 doses was 0.39 (95% CI, 0.18-0.86)."

Children's Health Defense

Exposure to Higher Levels of Thimerosal in Infant Vaccines Before 13 Months of Age Increases the Rate of Premature Puberty by 6.45X

Indian J Med Res 131, April 2010, pp 500-507

Thimerosal exposure & increasing trends of premature puberty in the vaccine safety datalink

David A. Geier[a,c], Heather A. Young[a] & Mark R. Geier[b]

[a]*The Institute of Chronic Illnesses, Inc., Silver Spring, MD,* [c]*CoMeD, Inc., Silver Spring, MD,* [b]*The George Washington University School of Public Health & Health Services, Department of Epidemiology & Biostatistics, Washington, DC &* [b]*ASD Centers, LLC, USA*

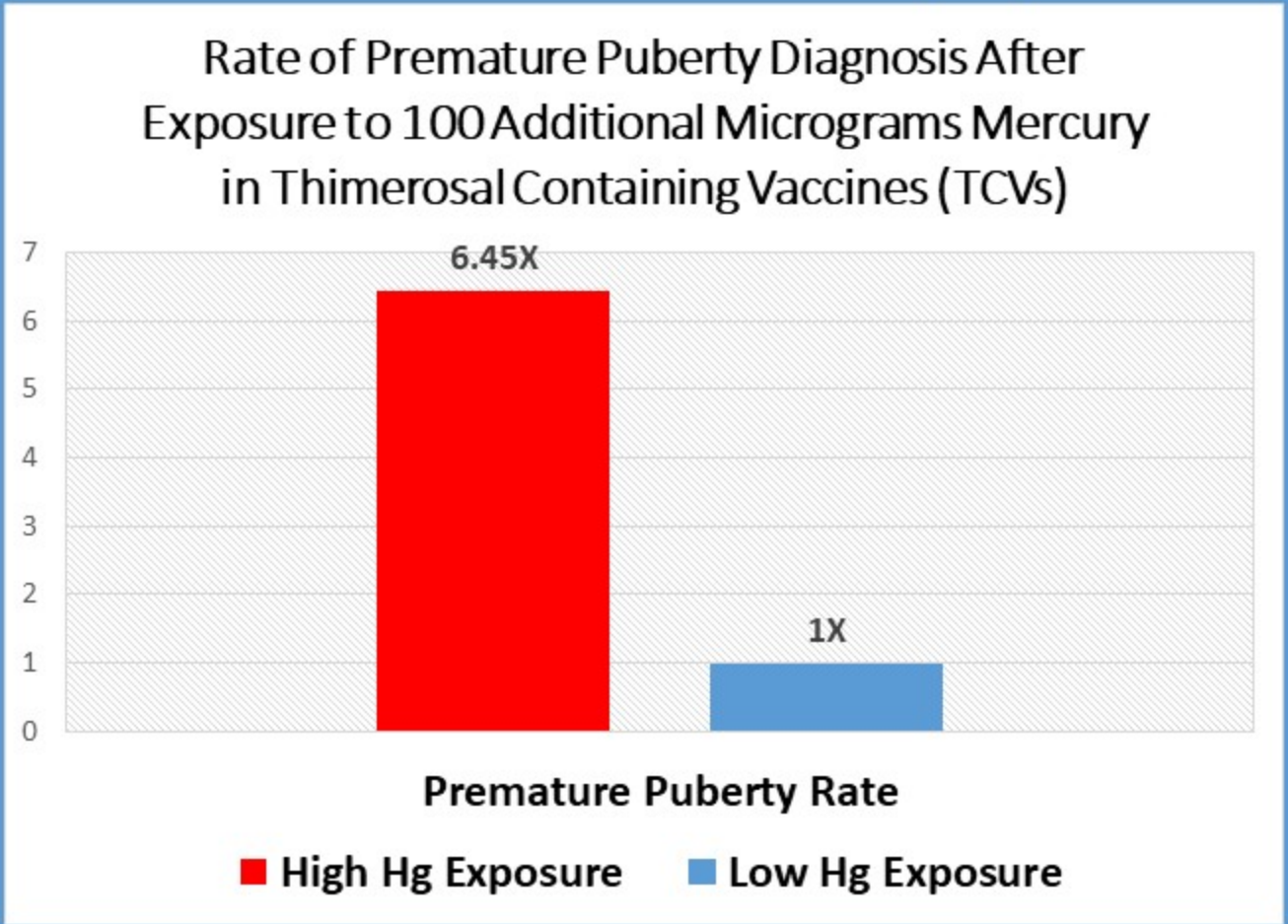
Received December 12, 2008

***Background & objectives*: The US Agency for Toxic Substances and Disease Registry (ATSDR) reports that mercury (Hg) is a known endocrine disruptor and it adversely affects the steroid synthesis pathway in animals and humans, and may interact to enhance the risk for a child developing premature puberty. An association between premature puberty and exposure to Hg from thimerosal-containing vaccines (TCVs) was evaluated in computerized medical records within the Vaccine Safety Datalink (VSD).**

***Methods*: A total of 278,624 subjects were identified in birth cohorts from 1990-1996. The birth cohort prevalence rates of medically diagnosed International Classification of Disease, 9th revision (ICD-9) premature puberty and control outcomes were calculated. Exposures to Hg from TCVs were calculated by birth cohort for specific exposure windows from birth-7 months and birth-13 months of age. Poisson regression analysis was used to model the association between the prevalence of outcomes and Hg doses from TCVs.**

***Results*: Significantly increased (P<0.0001) rate ratios were observed for premature puberty for a 100 µg difference in Hg exposure from TCVs in the birth-7 months (rate ratio=5.58) and birth-13 months (rate ratio=6.45) of age exposure windows. By contrast, none of the control outcomes had significantly increased rate ratios with Hg exposure from TCVs.**

***Interpretation & conclusions*: Routine childhood vaccination should be continued to help reduce the morbidity and mortality associated with infectious diseases, but efforts should be undertaken to remove Hg from vaccines. Additional studies should be done to evaluate the relationship between Hg exposure and premature puberty.**



"Significantly increased (P<0.0001) rate ratios were observed for premature puberty for a 100 µg difference in Hg exposure from TCVs in the birth-7 months (rate ratio=5.58) and birth-13 months (rate ratio=6.45) of age exposure windows. By contrast, none of the control outcomes had significantly increased rate ratios with Hg exposure from TCVs."

Children's Health Defense