

Article

Timely Versus Delayed Early Childhood Vaccination and Seizures

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ABSTRACT

BACKGROUND: Little is known regarding the timing of childhood vaccination and postvaccination seizures.

METHODS: In a cohort of 323 247 US children from the Vaccine Safety Datalink born from 2004 to 2008, we analyzed the association between the timing of childhood vaccination and the first occurrence of seizure with a self-controlled case series analysis of the first doses of individual vaccines received in the first 2 years of life.

RESULTS: In infants, there was no association between the timing of infant vaccination and postvaccination seizures. In the second year of life, the incident rate ratio (IRR) for seizures after receipt of the first measles-mumps-rubella vaccine (MMR) dose at 12 to 15 months was 2.65 (95% confidence interval [CI] 1.99–3.55); the IRR after an MMR dose at 16 to 23 months was 6.53 (95% CI 3.15–13.53). The IRR for seizures after receipt of the first measles-mumps-rubella-varicella vaccine (MMRV) dose at 12 to 15 months was 4.95 (95% CI 3.68–6.66); the IRR after an MMRV dose at 16 to 23 months was 9.80 (95% CI 4.35–22.06).

CONCLUSIONS: There is no increased risk of postvaccination seizure in infants regardless of timing of vaccination. In year 2, delaying MMR vaccine past 15 months of age results in a higher risk of seizures. The strength of the association is doubled with MMRV vaccine. These findings suggest that on-time vaccination is as safe with regard to seizures as delayed vaccination in the first year of life, and that delayed vaccination in the second year of life is associated with more postvaccination seizures than on-time vaccination.

Key Words:

vaccine safety immunization vaccine seizures vaccine delay

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