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Q / Is it safe to vaccinate children against varicella while they're in close contact with a pregnant woman?

EVIDENCE-BASED ANSWER

A / YES. All healthy children without evidence of immunity to varicella who are living in a household with a susceptible pregnant woman should be vaccinated (strength of recommendation [SOR]: C, expert opinion).

The risk of transmission of vaccine virus to household contacts is very low

(SOR: B, observational studies). Transmission is higher, but still rare, among contacts of immunocompromised vaccinees (SOR: B, observational studies).

Varicella infection has not been reported in unborn babies of women who had contact with a recently vaccinated person.

Evidence summary

Pregnant women without immunity to varicella are at risk of developing chickenpox, which can cause congenital varicella syndrome. An estimated 44 cases of congenital varicella occurred each year in the prevaccine era.¹

Varicella vaccine contains live attenuated virus. Approximately 2% to 3% of vaccinees develop either a localized rash around the injection site or a generalized rash.¹ The vaccine virus can, theoretically, spread from vaccinees who develop a rash to other people. Nevertheless, the probability of contracting varicella after contact with a healthy vaccinee is very low.

Minimal transmission, no infection from contact with healthy vaccinees

A prospective vaccine efficacy study found that 3 of 446 (0.67%) contacts of healthy vaccinees seroconverted, but had no clinical evidence of varicella.² In a smaller study, 30 immunocompromised siblings of 37 healthy

children who received varicella vaccine showed no clinical or serological evidence of the virus.³

Five case reports document varicella infection in people who had contact with healthy vaccinees.¹ One of these was a pregnant woman who chose to terminate the pregnancy, but subsequent tests showed no virus in the fetus.⁴ We couldn't find any reports of congenital varicella attributable to infection of the mother from a recent vaccinee.

Transmission by immunocompromised vaccinees is slightly higher

The risk of contracting vaccine-associated varicella from contact with an immunocompromised vaccinee is slightly higher than for a healthy vaccinee. The National Institute of Allergy and Infectious Diseases Varicella Vaccine Collaborative Study evaluated transmission and infectivity of the varicella vaccine virus in the close contacts of 482 vaccinated children with leukemia.⁵ One hundred fifty-six vaccinees developed a rash approxi-

mately one month after vaccination. Among 88 healthy susceptible siblings in close contact with the 156 vaccinees, 15 (17%) showed evidence of virus transmission. Of the 15, 4 had subclinical infection and the other 11 had a mild rash.

Recommendations

The American Academy of Pediatrics, Advisory Committee on Immunization Practices, and Centers for Disease Control and Prevention say that no precautions are necessary after varicella vaccination of family members in households with pregnant women. If a vaccinee develops a rash, precautions such as separating the vaccinee and the pregnant woman until the rash resolves are advisable. Giving *Varicella zoster* immune globulin to pregnant women without immunity who are exposed to varicella should be considered. Varicella vaccines are contraindicated in people with malignancies, immunodeficiencies (congenital or acquired), and immunosuppression caused by medications.^{1,3,6,7} **JFP**

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