



Measles-Mumps-Rubella-Varicella Vaccine

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Drug Levels and Effects

Summary of Use during Lactation

The Centers for Disease Control and Prevention and several health professional organizations state that vaccines given to a nursing mother do not affect the safety of breastfeeding for mothers or infants and that breastfeeding is not a contraindication to measles, mumps, rubella and varicella virus vaccine. Breastfed infants should be vaccinated according to the routine recommended schedules. Although rubella vaccine virus might be excreted into milk, the virus usually does not infect the infant. If an infection does occur, it is well tolerated because the viruses are attenuated.[1-3] No clear evidence exists of live attenuated measles or mumps vaccine virus excretion into breastmilk.[4] Lack of exclusive breast feeding until 5 months of age is a risk factor for an infant's poor response to measles vaccination.[5]

Drug Levels

Maternal Levels. No studies have evaluated the effects of the combined measles, mumps, rubella and varicella (MMRV) vaccine during breastfeeding. A study of mothers vaccinated with the Cendehill strain of live, attenuated rubella virus found no transmission of the live virus to their breastfed infants.[6] However, rubella vaccine virus can appear in breastmilk and result in infections in some infants.[7-10] See "Reported Side Effects In Breastfed Infants" below.

In a prospective study, 169 mothers with low titers of either measles or rubella were given MR vaccine (Schwarz FF-8 strain/TO-336 strain; Takeda Pharmaceutical Co. Ltd, Osaka, Japan) at their 1-month postnatal checkup. Mothers provided 5 mL of breastmilk 2 weeks later. Rubella virus antigen was not detected in the breastmilk of any mothers. Measles virus RNA was isolated from the breastmilk of 2 vaccinated mothers.[11]

Infant Levels. Relevant published information was not found as of the revision date. Two postpartum women immunized with varicella vaccine provided preimmunization and serial postimmunization breastmilk samples (number not specified). One sample of colostrum contained detectable viral DNA and B-actin by polymerase chain reaction, but all other samples were negative for these species. No varicella gene sequences were found in any of the samples.[12]

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One study of 12 women vaccinated with live, attenuated varicella vaccine found no evidence of varicella virus excretion into breastmilk.[13]

Infant Levels. Relevant published information was not found as of the revision date.

Effects in Breastfed Infants

Limited data indicate that breastfeeding can enhance the response of the infant to certain vaccine antigens. [2,3,14]

One 12-day-old breastfed infant developed a rubella infection 11 days after maternal vaccination with live rubella vaccine.[15] However, it is questionable if maternal vaccination was the cause of the infant's infection. [16]

Another breastfed infant had live rubella vaccine virus isolated from a throat swab after maternal immunization. The infant did not demonstrate seroconversion or adverse reactions.[7]

Some breastfed infants acquire passive immunity to rubella after maternal vaccination as do infants of mothers with natural rubella immunity. However, neither group of infants had a decreased response to rubella vaccine administered to the infant at 15 to 18 months of age.[8]

After immunization of their mothers with rubella vaccine, 25% of breastfed infants in one study showed transient seroconversion to rubella virus but without any clinical disease.[8]

A 25-day-old otherwise healthy infant developed a rash that was found to be caused by the varicella vaccine strain. The baby's mother received the varicella vaccine (Varivax, Merck & Co) on day 3 postpartum, when the infant was present in the room. Neither the mother nor any known contact had a rash prior to the infant's rash. No other known contact had been vaccinated in the 90 days prior to the infant's presentation at the clinic. The infant was primarily formula-fed, but received expressed breastmilk 4 times a day. The authors considered transmission via breastmilk, saliva or respiratory spread unlikely, but possible. The most likely exposure was thought to be via aerosolization at the time of vaccine administration.[17]

In a prospective study of mothers given MR vaccine (Schwarz FF-8 strain/TO-336 strain; Takeda Pharmaceutical Co. Ltd, Osaka, Japan) at their 1-month postnatal checkup, measles virus RNA was isolated from the breastmilk of 2 vaccinated mothers. Neither of their breastfed infants had any clinical disease.[11]

Effects on Lactation and Breastmilk

Relevant published information was not found as of the revision date.

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Substance Identification

Substance Name

Measles-Mumps-Rubella-Varicella Vaccine

Drug Class

Breast Feeding

Lactation

Milk, Human

Vaccines