Neonatal varicella

By definition, neonatal varicella develops during the first month of life and it is strictly linked to the onset of maternal chickenpox during the last 3 weeks of pregnancy or during the first week after giving birth. The infection may be acquired in utero, during birth (by exposure to VZV in the birth canal) and postnatally. In utero transmission normally takes place transplacentally (during maternal viraemia) or via the ascending route. Post-natal transmission occurs via respiratory droplets and contact routes. The incubation period for neonatal infection acquired in utero is normally 10-12 days from the onset of maternal disease, but may be shorter. Neonatal varicella also develops if the newborn baby is exposed to non-maternal chickenpox or shingles during the first week of life. The incubation period of neonatal varicella acquired postnatally (from maternal and non-maternal source) is 14 days (range 10-21 days). The incubation periods may be delayed when the infants receive post-exposure prophylaxis with VZIG.

1 Infants are exposed in utero when maternal varicella develops between day 21 before giving birth and day 2 after giving birth.

- a. Infants, born to mothers who develop varicella between day 21 and day 7 before giving birth, are not at risk, unless born at a gestational age < 28 weeks. They may develop varicella (50% acquire the infection, 25% of whom develop the disease), but this is usually a mild form of the disease, normally occurring during the first 4 days of life. Varicella is mild in these cases as infants acquire transplacentally protective levels (> 150 mIU/ml) of maternal antibodies. PEP with VZIG is not needed
- b. Infants, whose mothers develop chickenpox between day 7 prior to day 2 after giving birth, are at high risk of complicated neonatal varicella. About 60% of the exposed infants acquire the infection, 50% of whom develop chickenpox. The highest risk period for complicated neonatal varicella (multiorgan involvement with DIC) is when onset of maternal varicella occurs between day 5 before and day 2 after giving birth. These infants normally develop varicella between day 5 and 12 of life. The mortality rate is 30% in the absence of treatment (birth occurs before transplacental transmission of maternal antibodies can take place). PEP with VZIG should be promptly administered to these infants.

2 Infants exposed postnatally during the 1st week of life:

- a. <u>Onset of maternal varicella occurring between 3 to 7 days after giving birth</u>. Infants' disease develops between day 13 and day 28 of life; <u>the administration of VZIG at birth</u> <u>reduces the risk of complicated varicella</u>.
- b. Infants are exposed to non-maternal varicella or shingles when their mothers are VZV seronegative. Neonatal chickenpox in this group may develop between day 10 and 28 of life. PEP with VZIG at birth is recommended.

Maternal varicella

Delivery during the viraemic period may complicate varicella in the pregnant woman (risks of bleeding, thrombocytopenia, DIC and hepatitis). IV Acyclovir treatment is warranted. Where possible, delivery should be delayed until 5 days after the onset of maternal varicella. This will also allow some transplacental transfer of maternal antibodies to the fetus. Delivery may be required to facilitate assisted ventilation in cases complicated by varicella pneumonia and respiratory failure.

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NEWBORN INFANT EXPOSED TO MATERNAL CHICKENPOX (VARICELLA)

The severity of varicella in a newborn is determined by the timing of the mother's illness in relation to childbirth.

-21	Day	-7	Day	-5 I			iy () Delivery)	Day	+2	Da
ONSET OF MATE	RNA	L CHIC	KENPOX	IN RE	LATION	ΤΟ ΤΙΜ	E OF DE		RY	
 Disease generally mild, as neonates are protected from severe infection by the transfer of protective levels of maternal IgG across the placenta. No need for VZIG Routine postnatal care Inform carers that infant may develop chickenpox and that indisease is expected to be mild. The neonate should be medicat assessed. Treatment with oral ACV may be considered. 	he Ily	 Infants do not acquire protective levels of maternal antibodies when the onset of maternal varicella occurs between 7 days before and 7 days after delivery. Infection acquired in this period has high risk of severe complications (disseminated infection with extensive cutaneous and visceral involvement resulting in 30% mortality with no treatment. Mortality is reduced to about 7% with ACV treatment; it is critical to initiate treatment as soon as possible after onset. Give VZIG to the neonate at birth irrespective of gestational age and even if VZIG had been administered to the mother prior to delivery. VZIG may prevent disease and normally reduces disease severity when chickenpox develops. However, it is worth noticing that severe complications have been described, despite VZIG Discharge home if infant for 24 hours Discharge home if infant is well Inform carers that it is likely the infant will develop varicella, despite prophylaxis with VZIG. The incubation period may increase after the administration of VZIG. 								
 Management would be different in case of infants born < 28 we gestation or with birth weight < 1,000g, as these neonates had not received protective levels of maternal IgG. VZIG prophylaxis should be considered in these situations. 	ve 📗	 A clear develop If chick 	managemen ing chickenp enpox devel	plan shou ox should ops in the or at least	uld be docu be promptly neonate, c seven day ts born in th	mented in th / referred to lespite VZIC /s should be is period (or	hospital for r 6, high dose	eview ar intraver soon as	y and in the letter to nd treatment. nous aciclovir treatr possible to prevent	nent (20mg/kg
 Additional information <u>Maternal shingles</u> around the time of delivery is not an indicated prophylaxis with VZIG unless the infant is < 28 week gestation 1,000g. It is safe for mothers with chickenpox or shingles to <u>breastfeed</u> covered by VZIG or ACV. If there are active chickenpox lesions they should express breast milk from the affected breast until the 	or with if their close to	birth weigh babies are the nipple,		 after of seven se	delivery) ha re neona <u>ional</u> IV AC (day) for 7 t of materna	ve the high tal varice V prophylax days startin al varicella m basis (Publice)	est risk fo	3 er dered		
over. The expressed breast milk may be fed to the baby who is receiving treatment with VZIG and/or ACV.							i VZIG prophylaxis should be also administered to newborns of seronegative mot hers exposed to VZV (shingles or chickenpox of non maternal source) during the 1 st 7 days of life			