

Public Health Education Information Sheet

Childhood Illnesses In Pregnancy:

Chicken Pox and Fifth Disease

Certain childhood illnesses, including chicken pox and fifth disease, can sometimes pose a risk to the fetus if the mother contracts them during pregnancy. For this reason, it is very important that a pregnant woman consult her doctor or health care provider if she may have been exposed to either of these illnesses.

Here's what a pregnant woman should know about these and other childhood illnesses in order to help protect herself and her unborn child.

What is chicken pox?

Chicken pox (varicella) is usually a mild, but highly contagious, infection caused by a virus. It is characterized mainly by an itchy rash.

Most pregnant women need not worry about chicken pox, since 85 to 95 percent are immune because they had the disease in childhood. However, one to five women in 10,000 will come down with chicken pox during pregnancy.

What risks does chicken pox pose for the fetus?

Infection in the first 20 weeks of pregnancy occasionally results in one or more features of congenital varicella syndrome, a pattern of birth defects that includes scars, defects of muscle and bone, malformed and paralyzed limbs, a smaller-than-normal head, blindness, seizures and mental retardation. Fewer than 5 percent of babies of infected mothers develop any of these birth defects. After the first 20 weeks of pregnancy, chicken pox rarely results in birth defects. Chicken pox also may increase the risk of miscarriage and premature labor.

What are the risks to the newborn from maternal chicken pox around the time of delivery?

When the mother develops the rash from five days before to two days after delivery, her

newborn can develop an especially severe, sometimes fatal, chicken pox infection. Without treatment, up to 50 percent of newborns become infected, and up to 30 percent of them die from complications of the illness. A baby infected during this period will develop a rash between 5 and 10 days after birth.

When maternal infection occurs around the time of birth, infection in the newborn can often be prevented or the severity of infection lessened if the baby is treated promptly with an injection of a special kind of gamma globulin called VZIG, which contains antibodies against the virus. When the baby develops symptoms in spite of treatment with VZIG, new antiviral drugs also can help reduce the severity of infection.

If the pregnant woman develops chicken pox between six and 21 days before delivery, her newborn also faces some risk of infection. However, the risk is less and serious consequences from the disease are rare, as the mother's body has enough time to produce antibodies to the virus and pass these protective substances along to the fetus.

What should a pregnant woman do if she has been exposed to chicken pox?

Pregnant women who know they have had chicken pox in the past have no cause for concern. A woman who is not certain that she has had chicken pox, however, should check with her doctor or health care provider immediately, if she believes she has been exposed to the disease. A blood test can usually determine if a person is susceptible.

Can chicken pox be prevented in susceptible women?

Experts recommend that a susceptible pregnant woman who has been closely exposed to chicken pox receive VZIG. When given within 96 hours after exposure, VZIG helps prevent infection or lessens its severity. This is very

important for the health of the pregnant woman as complications of chicken pox, such as pneumonia, may be more severe in pregnancy. It is not yet known, however, whether VZIG helps to protect the fetus from infection. VZIG is available to doctors through regional distribution centers of the American Red Cross.

What can a pregnant woman who may be susceptible to chicken pox do to avoid exposure?

Chicken pox is highly contagious, partly because the virus can be spread through the air. A susceptible pregnant woman should avoid contact with any susceptible child who has been exposed to chicken pox, for example, when someone in the child's class has the disease. Chicken pox can be transmitted by an infected person even before the rash develops, and that person will remain contagious until the rash stops spreading and is covered by scabs. If a susceptible pregnant woman is exposed to an infected household member, her risk of contracting chicken pox is up to 90 percent, and she should consult her doctor or health care provider immediately.

What is fifth disease?

Fifth disease (erythema infectiosum) is a common childhood illness characterized by a mild fever and rash. This illness, caused by a virus, got its name many years ago when it appeared fifth in a list of what were then considered the common causes of rash and fever in childhood. In addition to rash and fever, infected adults also may experience joint pain and swelling. Outbreaks commonly begin in late winter or in spring at elementary and junior high schools.

What risk does fifth disease pose in pregnancy?

To date, fifth disease in pregnancy has not been proven to cause birth defects, although doctors are still exploring this possibility. Fifth disease can, however, disrupt the fetus's ability to produce red blood cells. Sometimes this leads to a dangerous form of anemia, heart failure, abnormal pooling of fluid (referred to as fetal hydrops), and fetal death. Fortunately, fewer than one-third of pregnant women's infections result in their fetuses becoming infected. And most infected fetuses quickly resume red blood cell production and avoid anemia. These babies are born healthy, with no apparent problems resulting from infection.

According to the American Academy of Pediatrics, the risk of fetal death from fifth disease appears to be highest when a pregnant woman is infected during the first 20 weeks of pregnancy. Studies suggest, however, that only 3 to 9 percent of cases of maternal infection in the first 20 weeks of pregnancy result in fetal death. March of Dimes grantee Stanley J. Naides, M.D., of the University of Iowa, is seeking to clarify the risks to the fetus after the mother is infected.

What should a pregnant woman do if she has been exposed to fifth disease?

A pregnant woman who has been exposed to fifth disease should consult her doctor or health care provider promptly. If it is likely that she was exposed during the contagious stage of the illness (generally before the rash develops), the doctor may suggest a blood test. This test can determine whether she had fifth disease in the past -- and is presumably immune -- or whether she has been mildly infected. (Studies suggest that 50 percent of adults have had the infection in childhood, often without knowing it, and are therefore immune.) Though this blood test is not yet widely available, doctors can arrange testing through state health departments. Testing also is available through the department of pathology at the University of Iowa.

How is fifth disease in pregnancy treated?

There is no vaccine to prevent fifth disease or drug to cure it. If a pregnant woman becomes infected, her doctor or health care provider can monitor the pregnancy carefully for signs of fetal problems. Studies suggest that weekly maternal blood tests (up to about 23 weeks of pregnancy) to look for rising levels of a substance called alpha fetoprotein may help determine whether or not a fetus has developed complications caused by fifth disease. More severe problems, such as fetal hydrops, can be detected through ultrasound examination. When necessary, a sample of fetal blood can be tested directly to confirm the infection and help determine how severely affected the fetus may be.

Doctors, including Dr. Naides, have in a few cases successfully treated severely affected fetuses with intrauterine blood transfusions. While still considered experimental, this treatment may prove lifesaving for babies with hydrops caused by fifth disease.

Do measles and mumps pose a risk in pregnancy?

Neither of these childhood illnesses has been associated with birth defects. However, when a pregnant woman contracts them in the first trimester, she may be at increased risk of miscarriage. Later in pregnancy, either disease may trigger premature labor. If a pregnant woman develops measles near the time of delivery, her newborn may contract the disease, which could be especially severe if the baby is premature.

Measles and mumps are rare in pregnancy as most pregnant women are immune, either because they had the diseases in childhood or were vaccinated. Neither vaccine is recommended during pregnancy.

References:

- Russell, L.K. Management of varicella-zoster virus infection during pregnancy and the peripartum. *Journal of Nurse-Midwifery*, volume 31, number 1, January/February 1992, p.17-24.
- Baker, D.A. Dangers of varicella-zoster virus infection. *Contemporary Ob/Gyn*, April 1990, p. 51-57.
- Fox, G.N., Strangarity, J.W. Varicella-zoster virus infections in pregnancy. *American Family Physician*, volume 39, number 2, February 1989, p. 89-98.
- American Academy of Pediatrics Committee on Infectious Disease. Parvovirus, erythema infectiosum, and pregnancy. *Pediatrics*, volume 85, number 1, January 1990, p. 131-133.
- Mead, P.B. Parvovirus B19 infection and pregnancy. *Contemporary Ob/Gyn*, September 1989, p. 56-70.
- Schneider, A.P., Naides, S.J. Human parvovirus infection. *American Family Physician*, volume 39, number 1, January 1989, p. 165-169.

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