



CONGENITAL ZIKA SYNDROME

Nursing

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ABSTRACT

Zika virus is a mosquito-borne flavivirus that is the focus of an ongoing pandemic and public health emergency. Previously limited to sporadic cases in Africa and Asia, the emergence of Zika virus in Brazil in 2015 heralded rapid spread throughout the Americas. Although most Zika virus infections are characterized by subclinical or mild influenza-like illness, severe manifestations have been described, including Guillain-Barre syndrome in adults and microcephaly in babies born to infected mothers. About 1 in 10 pregnant women (10 percent) with Zika infection in the United States and the District of Columbia has a baby with birth defects. A birth defect is a health condition that is present at birth. Birth defects change the shape or function of one or more parts of the body. They can cause problems in overall health, in how the body develops or in how the body works.²

KEYWORDS

INTRODUCTION:

Zika virus (ZIKV) was discovered in Uganda in 1947 and was originally isolated only in Africa and Asia. After a spike of microcephaly cases in Brazil, research has closely focused on different aspects of congenital ZIKV infection. Contracted through the bite of an infected mosquito or through sexual or other modes of transmission, Zika virus (ZIKV) infection can be prenatally passed from mother to fetus.³ The virus was first identified in the region of the Americas in early 2015, when local transmission was reported in Brazil. Six months later, a notable increase in the number of infants with congenital microcephaly was observed in northeast Brazil. Clinical, epidemiologic, and laboratory evidence led investigators to conclude that intrauterine ZIKV infection was a cause of microcephaly and serious brain anomalies. However, as with other newly recognized teratogens, these features likely represent a portion of a broader spectrum.⁴

Congenital Zika Syndrome

Congenital Zika syndrome is a group of birth defects associated with Zika infection during pregnancy. Zika is a virus. If you get infected with Zika during pregnancy, the virus can pass through the placenta to your baby. The placenta grows in your uterus (womb) and supplies your baby with food and oxygen through the umbilical cord. Being infected with Zika before birth increases a baby's risk for these conditions, but not all babies infected have these conditions.⁵

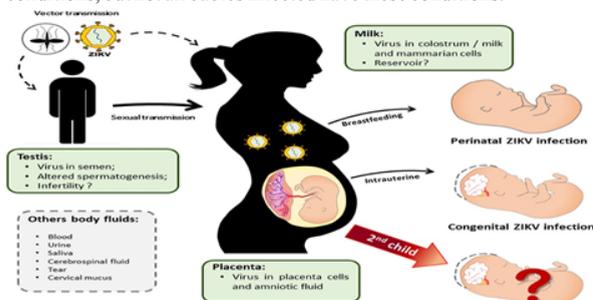


Figure 1: Transmission of ZIKA Virus in pregnant women and fetus.⁶

Congenital Zika Syndrome Includes These Five Birth Defects:

1. Severe microcephaly with a partly collapsed skull. Microcephaly is a birth defect in which a baby's head is smaller than expected, compared to babies of the same sex and age. Babies with mild microcephaly often don't have problems other than small head size. A baby with severe microcephaly has a head that's much smaller than expected and may have more serious health problems than a baby with mild microcephaly. A baby can develop microcephaly after birth if her head growth slows or doesn't develop. We don't know if a newborn who's infected with Zika around the time of birth will develop microcephaly after birth.

2. Less brain tissue than normal, with a specific pattern of brain

damage that includes calcium deposits in the deep tissues of the brain. This calcium can build up and affect the way a baby's brain works.

3. Damage to the back of the eye, including macular scarring. The retina is the nerve tissue that lines the back of the eye. It senses light and sends images to your brain. The center of the retina is called the macula. The macula gives the sharp, central vision you need for reading, driving and seeing fine detail. Macular scarring happens when scar tissue forms on the macula.

4. Problems with limbs or joints, including birth defects like arthrogryposis, clubfoot and congenital hip dysplasia. A joint is a part of the body where two or more bones come together, like the knee, hip, elbow or shoulder. A baby with arthrogryposis is born with joint problems that make it hard for her to move her hands or legs. Her joints may not move the right way or they may get stuck in one position. If a baby has clubfoot, one foot or both feet point down and turn in. Babies with clubfoot also may have abnormal foot bones, ankle joints and muscles. Babies born with hip dysplasia have an abnormal hip joint where the top of a hip bone doesn't stay firmly in the hip socket.

5. Hypertonia that limits a baby's movement after birth. Hypertonia is when your baby has too much muscle tone, so his hands or legs may be stiff and hard to move. If the Zika virus reaches your baby's brain, it can slow brain growth and kill brain cells, and some parts of the brain may not develop.

Problems In The Brain That Are Linked To Congenital Zika Virus Infection Include:

- Brain atrophy.** This is a loss of brain cells that can make the brain shrink. Sometimes all of the brain shrinks; other times only a small part of the brain shrinks.
- Brain structures that are missing or don't develop properly.** For example, some babies that may have been exposed to Zika during pregnancy have hypoplasia of the cerebellum. The cerebellum is the part of your brain that helps control your balance and how your body moves. Hypoplasia of the cerebellum is when the cerebellum is smaller than usual or it's not fully developed.
- Neural tube defects** (also called NTDs). An NTD is a birth defect in a baby's neural tube. The neural tube is part of a developing baby that becomes the brain and spine. Examples of NTDs are spina bifida and anencephaly.
- Fetal brain disruption sequence.** Babies with this condition may have severe microcephaly, problems with the skull (including collapsed skull or skull bones that overlap), extra skin on the scalp and problems with the nervous system. Your baby's nervous system is made up of the brain, spinal cord and nerves. The nervous system helps your baby move, think and feel.
- Smooth brain.** A healthy brain has many folds and grooves in it. For some babies, the brain may be smooth with no folds or few folds. Some babies with smooth brain don't have serious health problems, but others stop developing after 3 to 5 months and many die before they're 2 years old.
- Thin cerebral cortex with enlarged ventricles and**

hydrocephalus. The cerebral cortex is the thin layer of cells that covers the brain. It helps the brain process information. Ventricles are spaces in the brain that fill with fluid. When fluid builds up, it causes pressure on the brain. This is called hydrocephalus.

Other Health Conditions Linked To Congenital Zika Infection Include:

- **Cerebral Palsy.** This is a group of conditions that affects the parts of the brain that control muscles. This can cause problems with movement, posture (standing up straight) and balance.
- **Low birthweight.** This is when a baby is born weighing less than 5 pounds, 8 ounces.
- **Growth and development problems,** including trouble swallowing (also called dysphagia), problems with balance and movement, trouble sitting up and intellectual and developmental disabilities. These are problems with how the brain works that can cause a person to have trouble or delays in physical development, learning, communicating, taking care of himself or getting along with others.
- **Hearing loss and other hearing problems.** Hearing loss is when your baby can't hear sound in one or both ears.
- **Nervous system problems,** including epilepsy, hypotonia, hyperreflexia, severe fussiness and tremors (also called body shakes). Epilepsy is a seizure disorder that affects how the nerve cells in your brain work. A seizure is when the whole body or parts of the body move without control. Hypotonia is when your baby has too little muscle tone, so he may seem floppy and have poor head control (his head falls forward, backward or to the side). Hyperreflexia is when you baby has overactive reflexes.

Sleeping problems

- **Vision problems, including cataracts, coloboma and congenital glaucoma.** A cataract is a film or cloud that covers the eye's lens and affects a baby's vision. Coloboma is when there are missing pieces of tissues in the structures that form the eye. Congenital glaucoma is a group of diseases that damage the eye's optic nerve. The optic nerve connects the retina to the brain. Glaucoma can lead to vision loss and blindness.²

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