Lymphocytic Choriomeningitis Virus (LCMV)

This sheet talks about exposure to lymphocytic choriomeningitis virus (LCMV) during pregnancy or while breastfeeding. This information should not take the place of medical care and advice from your healthcare provider.

What is lymphocytic choriomeningitis virus (LCMV)? How is it spread?

LCMV is a virus that is carried by rodents and can be passed to humans. Infected rodents shed the virus in their nasal secretions, saliva, milk, semen, urine, and feces. Contact with rodent body fluids through broken skin, eyes, nose or accidental ingestion can lead to an LCMV infection. Wild rodents, pet rodents, and rodents in laboratories can carry LCMV, but the most common host is the house mouse. It is estimated that 5% of house mice throughout the United States carry LCMV. The Centers for Disease Control and Prevention (CDC) estimate that 2% to 5% of adults have had an LCMV infection.

What are the symptoms of LCMV?

Some people with LCMV do not have any symptoms. For others, LCMV causes flu-like symptoms (fever, muscle aches, fatigue, nausea, and vomiting) that start 1-2 weeks after being exposed to the virus. These symptoms can last as long as a week. Some people go on to develop meningitis (swelling of the spinal cord), encephalitis (swelling in the brain), or both. These symptoms can last up to 3 weeks or longer. Symptoms of LCMV infection can be treated, and cases that affect the spine or brain require hospitalization.

How can I lower the chance of getting LCMV?

The chance of LCMV infection is low. However, pregnant women can lower their chance of infection by following the tips below and on the CDC website at https://www.cdc.gov/vhf/lcm/prevention/index.html.

- Avoid direct physical contact with wild or pet rodents.
- If possible, have someone else care for pet rodents and clean their cages.
- If you do come in contact with a rodent or its urine, droppings, or nesting materials, wash hands very well with soap and water afterwards.
- Avoid vacuuming or sweeping rodent urine, droppings, or nesting materials, which can cause the virus to become airborne and increase the chance of breathing in the virus.
- If you have wild rodents in your home, have a professional pest control company remove them.
- Laboratory workers or veterinary workers who work with the virus or handle infected animals can lower their chance of infection by wearing proper protective laboratory gear, and following appropriate safety precautions. See our MotherToBaby fact sheet on working as a vet or vet tech: https://mothertobaby.org/fact-sheets/vet-vettech/pdf/.

Does getting LCMV increase the chance of miscarriage?

Having an LCMV infection during pregnancy can increase the chance for miscarriage, although the exact chance for a miscarriage is not clear. The chance of pregnancy loss is higher with LCMV infections in the first trimester than with infections later in pregnancy.

Does getting LCMV during pregnancy increase the chance of birth defects?

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk. If a woman gets LCMV during pregnancy, the virus can pass to the developing baby. This is called congenital LCMV.

The most common known birth defects from congenital LCMV are fluid in the brain (hydrocephalus), eye
problems that can lead to vision loss (chorioretinitis), and effects on brain development ranging from mild learning disabilities to more severe developmental disability. There have not been enough reported cases of congenital LCMV to know whether these more severe cases are typical. The chance of these brain, eye and developmental effects appears to be higher when a woman gets an LCMV infection in the second or third trimester of pregnancy.

It is not known how likely it is that an LCMV infection in pregnancy will pass to the baby, or what the chance of birth defects is if that happens. This is because many cases of LCMV go undetected (since the symptoms are like the flu), and healthy women and babies are not routinely tested for LCMV. So it is not known how many women have had LCMV during pregnancy and still had healthy babies. Current data suggest that the cases of LCMV infection and congenital LCMV are under-reported.

Having a LCMV infection in the past that has gone away does not increase the chance for congenital LCMV in a current or future pregnancy.

How can I find out if I have LCMV?

If you have had close contact with rodents, rodent droppings or nesting material, and/or have a fever or other symptoms of LCMV, contact your health care provider. A blood test might be available to screen for an LCMV infection.

How can I find out if my baby will be affected by LCMV during my pregnancy?

Ultrasound can detect some of the possible effects of congenital LCMV, such as enlarged areas of the brain, extra fluid in the brain, bleeding around the brain, or buildup of fluid in the baby’s body tissues (hydrops).

Can I breastfeed if I have LCMV?

There is no evidence to suggest that LCMV can be transmitted to a baby through breast milk, but studies are needed to help answer this question. Tell your healthcare provider and your baby’s provider about your infection, rid the home of wild rodents if they are present, and wash your hands well with soap and water before holding your baby. If you suspect your baby has symptoms of LCMV, contact the child’s healthcare provider.

If a man has LCMV does it increase the chance of infertility or birth defects?

LCMV has not been studied for effects on a man’s fertility. In general, exposures that fathers have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures and Pregnancy at https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/

Please click here for references.