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No. 240-Cytomegalovirus Infection in Pregnancy

This guideline was reviewed by the Maternal Fetal Medicine Committee and approved by the Executive and Council of The Society of Obstetricians and Gynaecologists of Canada.

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Key Words: Congenital infection, cytomegalovirus (CMV), prenatal diagnosis, intrauterine growth restriction (IUGR), microcephaly

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Abstract

Objectives: To review the principles of prenatal diagnosis of congenital cytomegalovirus (CMV) infection and to describe the outcomes of the affected pregnancies.

Outcomes: Effective management of fetal infection following primary and secondary maternal CMV infection during pregnancy. Neonatal signs include intrauterine growth restriction (IUGR), microcephaly, hepatosplenomegaly, petechiae, jaundice, chorioretinitis, thrombocytopenia and anemia, and long-term sequelae consist of sensorineural hearing loss, mental retardation, delay of psychomotor development, and visual impairment. These guidelines provide a framework for diagnosis and management of suspected CMV infections.

Evidence: Medline was searched for articles published in English from 1966 to 2009, using appropriate controlled vocabulary (congenital CMV infection) and key words (intrauterine growth restriction, microcephaly). Results were restricted to systematic reviews, randomized controlled trials/controlled clinical trials, and observational studies. Searches were updated on a regular basis and incorporated into the guideline. Grey (unpublished) literature was identified through searching the websites of health technology assessment and health technology assessment-related agencies, clinical practice guideline collections, clinical trial registries, and national and international medical specialty societies.

Recommendations: The quality of evidence reported in this document has been assessed using the evaluation of evidence criteria in the Report of the Canadian Task Force on Preventive Health Care (Table 1).

1. Diagnosis of primary maternal cytomegalovirus (CMV) infection in pregnancy should be based on de-novo appearance of virus-specific IgG in the serum of a pregnant woman who was previously seronegative, or on detection of specific IgM antibody associated with low IgG avidity (II-2A).

2. In case of primary maternal infection, parents should be informed about a 30% to 40% risk for intrauterine transmission and fetal infection, and a risk of 20% to 25% for development of sequelae postnatally if the fetus is infected (II-2A).
3. The prenatal diagnosis of fetal CMV infection should be based on amniocentesis, which should be done at least 7 weeks after presumed time of maternal infection and after 21 weeks of gestation. This interval is important because it takes 5 to 7 weeks following fetal infection and subsequent replication of the virus in the kidney for a detectable quantity of the virus to be secreted to the amniotic fluid (II-2A).
4. The diagnosis of secondary infection should be based on a significant rise of IgG antibody titre with or without the presence of IgM and high IgG avidity. In cases of proven secondary infection, amniocentesis may be considered, but the risk–benefit ratio is different because of the low transmission rate (III-C).
5. Following a diagnosis of fetal CMV infection, serial ultrasound examinations should be performed every 2 to 4 weeks to detect sonographic abnormalities, which may aid in determining the prognosis of the fetus, although it is important to be aware that the absence of sonographic findings does not guarantee a normal outcome (II-2B).
6. Quantitative determination of CMV DNA in the amniotic fluid may assist in predicting the fetal outcome (II-3B).
7. Routine screening of pregnant women for CMV by serology testing is currently not recommended (III-B).
8. Serologic testing for CMV may be considered for women who develop influenza-like illness during pregnancy or following detection of sonographic findings suggestive of CMV infection (III-B).
9. Seronegative health care and child care workers may be offered serologic monitoring during pregnancy. Monitoring may also be considered for seronegative pregnant women who have a young child in day care (III-B).