Diagnosis of Fetal CMV Infection
Algorithm for diagnosis of congenital CMV infection

Suspected fetal risk of congenital CMV including:
1) Positive maternal serology c/w primary maternal infection
2) Referral for abnormal US suggestive of CMV 
   (Ventriculomegally, IUGR, intracranial calcifications, hydrops, 
   echogenic bowel, ascites)^
3) Targeted MFM Ultrasound; amniocentesis for CMV PCR after 20-22 weeks gestational age and ≥6 weeks from maternal exposure, or at time of finding of fetal abnormality* 1,7

Positive amniotic fluid CMV PCR

Diagnosis of congenital infection
PPV 100%, Spec 100%^

Offer CMV HIG, expectant management, TOP if gestational age appropriate
Antenatal testing

CMV HIG protocol

Negative amniotic fluid CMV PCR

Unlikely congenital CMV, evaluate other etiologies for US findings, low risk fetal infection if negative amnio after positive maternal serum screen
NPV of congenital infection—94.2% 8 if done between 20-22 weeks EGA and ≥6-8 weeks after primary maternal infection 8

CMV IgG positive

Avidity < 60%
Can not exclude congenital CMV; offer amnio or empiric HIG

Avidity > 60%
Congenital CMV rare

CMV IgG negative

Unlikely congenital CMV, evaluate other etiologies for US findings

If not done, offer maternal serology; CMV IgG, avidity

Declines amniocentesis

CMV definitions:
1) Maternal seroconversion, primary infection – with or without maternal s/s – appearance of IgG positive CMV antibodies with prior negative IgG, IgG low avidity (< 60% consistent with infection 4-6 month, < 30% infection < 3 months)
2) Congenital infection – amniotic fluid or neonatal urine positive for CMV DNA by PCR or CMV culture
3) CMV disease - symptomatic neonatal CMV infection

* Diagnostic testing (amniocentesis) recommended for a) primary maternal infection in first ½ of pregnancy or b) US findings consistent with infection (above).
Timing of amniocentesis for best sens/specificity 8 is 20-22 weeks EGA and > 6-8 weeks after primary maternal infection, or at time of US finding as
1) 6-9 weeks required from time of maternal infection to time for virus to be eliminated from the fetal urine and detected in AF,
2) maternal infection in first 12-16 weeks carries highest risk of severe disease,
3) higher false negative rate due to reduced fetal diuresis earlier than 20 week EGA 8
Notification to Users

These algorithms are designed to assist the primary care provider in the clinical management of a variety of problems that occur during pregnancy. They should not be interpreted as a standard of care, but instead represent guidelines for management. Variation in practices should take into account such factors as characteristics of the individual patient, health resources, and regional experience with diagnostic and therapeutic modalities.

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