

CMV



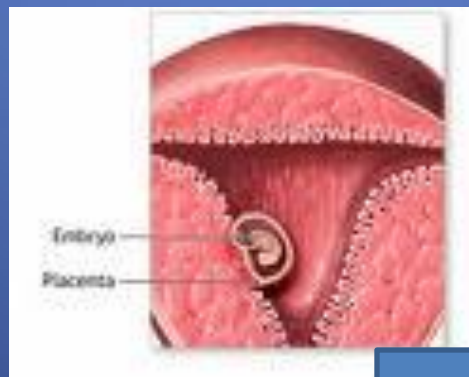
Cyto-Megalo-Virus

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CMV (Target age)

- Newborn (congenital /perinatal)
- Child (most common)
- Adolescence (pregnancy)
- Adult (pregnancy)

Incidence of primary maternal CMV infection in pregnant women in the United States varies from **0.7% to 4**. CMV is the **most common** cause of congenital viral infection in the United States. The transmission rate to the fetus is between **24-75%** .



CMV (Risk)

- I work in NICU, what are my risk?
- I had CMV as a child, am I immune?

Seronegative + Seroconversion
= Seropositive

CMV (Phases)

- Latent (IgG)
- Primary (IgM)
- Re-activation (IgG & IgM)

CMV (Case discussion)

Birth Hx: 27 wk, BW 1220 gm, ventilated since birth

At ~ 4 wks/1 month, w/u done for persistent thrombocytopenia. Urine sent for CMV reported positive

CMV (Source)

- Congenital (transplacental)
- Cervical secretions (vertical)
- Blood transfusion (horizontal)
- Breast milk / sibling (horizontal)

CMV (Diagnosis)

Diagnostic work-up for CMV:

Urine CMV Cx (shell vial-**fast**; viral Cx-**slow**)

Body fluids: PCR- CMV (**fast**)

Blood Serology: IgG, IgM, Rising titers (4-fold)

Blood Antigen test : pp65 antigens (? **rutinely**)

CMV (Cytomegalovirus) Infection

Labs in the infant:

- **Urine** CMV shell vial Cx- positive
- Urine viral tube Cx- pending
- **Peritoneal fluid** PCR- CMV DNA detected
- **Serum:** CMV- IgM 1.78
(Ref values < 0.9-neg, 0.9-1.10- equivocal, > 1.10-positive)
- **Breast milk**- negative PCR

CMV (Cytomegalovirus) Infection

The infant has CMV infection.

Is it Congenital or Perinatal?

CMV (Cytomegalovirus) Infection

Congenital

- Transplacental
- Manifest at birth (IUGR, low platelet, retinitis, microcephaly, IV calcification) **OR** *asymptomatic (mostly)*
- Clues: Maternal CMV status
- Check: CUS, LFTs, TORCH, Eyes
- Rx: Ganciclovir
- FU : Hearing, vision, development

Perinatal

- Cervical secretions/breast milk/blood transfusion
- Clinical presentation (low platelet, retinitis, microcephaly, IV calcification)
- Clues: CMV Cx positive > 3 weeks
- Check: CUS, LFTs, TORCH, Eyes
- Rx: Ganciclovir
- FU : Hearing, vision, development

CMV (Cytomegalovirus) Infection

So, is it Congenital or Perinatal?

- Maternal CMV status- **not known**
- Dx > 3 wks (**breast milk is CMV negative**)
- Transfusion related? (**assume CMV negative**)
- Horizontal transmission- nosocomial? **??????**

CMV (Cytomegalovirus) Infection

Possibly Perinatal.

Source???????????

CMV (Treatment)

- The drug of choice for treatment of cytomegalovirus (CMV) disease is ganciclovir.
- Ganciclovir is a nucleoside analogue that inhibits DNA synthesis in the same manner as acyclovir. The major difference is that CMV does not contain a thymidine kinase.

CMV (Prevention)

Congenital: CMV screening in mom

Perinatal: CS ?, CMV-negative blood,

Frozen milk (caution: CMV

positive milk can be used as it has

CMV-Ab, if mom is seropositive)

Horizontal : Hand hygiene, Hand hygiene, Hand hygiene, Hand hygiene, Hand hygiene, Hand hygiene, Hand hygiene.....

Prevention advise for female NICU staff

- Pregnant women can be infected with CMV through sexual contact, blood transfusions, and non-sexual, close contact with infected persons, especially young children.
- Practice good personal hygiene, especially hand washing with soap and water after contact with diapers or saliva (particularly with a child who is in day care). Wash well for 15 to 20 seconds.
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- Do not kiss children under the age of 6 on the mouth or cheek. Instead, kiss them on the head or give them a hug.
- Do not share food, drinks, or utensils (spoons or forks) with young children.
- If you are pregnant and work in a day care center, reduce your risk of getting CMV by working with children who are older than 2 ½ years of age, especially if you have never been infected with CMV or are unsure if you have been infected.

<http://www.cdc.gov/cmvpregnancy.htm>

Resources

A national CMV registry provides education and support for families affected by congenital CMV infection. Contact the National [Congenital CMV Disease Registry at Feigin Center](#), Suite 1150, 1102 Bates Street, MC 3-2371, Houston, TX, 77030-2399, (832) 824-4387, or visit the Web site at <http://www.bcm.tmc.edu/pedi/infect/cm>

Better education of the risks of CMV infection for young women is a must. The [CDC](#) (<http://www.cdc.gov/cm>) is also an excellent educational resource.

Other foundations provide education and resources for parents interested in learning more about congenital CMV, including the [CMV Foundation](#) (<http://www.cmvfoundation.org>).

CMV- Bibliography

1. Red Book

2. http://www.marchofdimes.com/professionals/14332_1195.asp

3. <http://www.americanpregnancy.org/pregnancycomplications/cytomegalovirusinfection.html>

4. <http://www.cdc.gov/cmvpregnancy.htm>

5. <http://www.emedicine.com/MED/topic504.htm>

6. <http://pedclerk.bsd.uchicago.edu/breastfeeding.html>

7. <http://www.merck.com/mmhe/sec17/ch198/ch198h.html>

8. <http://emedicine.medscape.com/article/963090-overview>