

CMV • 1/2

In-utero transmission of CMV can occur during primary maternal infection, reactivation, or reinfection of seropositive mothers

MATERNAL TESTS

CMV serology (IgG and IgM) and viral loads

- Both IgG and IgM negative: unlikely to be CMV infection
- IgG positive, IgM negative: past maternal infection
- IgG positive, IgM positive: check CMV IgG avidity
- if low likely to be acute maternal CMV infection
- high CMV viral load in maternal blood indicative of acute maternal CMV infection

Antenatal ultrasound

Features include:

- IUGR
- Intracranial ventriculomegaly/calcification, microcephaly
- Ascites, hydrops fetalis
- Pleural or pericardial effusions
- Oligo- or polyhydramnios
- Hepatomegaly
- Abdominal calcification
- Pseudomeconium ileus
- Thickened placenta

NEONATAL FEATURES

Main clinical signs

- Small for gestational age
- Petechiae/purpura
- Hepatosplenomegaly
- Jaundice
- Pneumonia
- Cataract
- Failed hearing screen

Investigation results

- CMV IgM positive
- CMV PCR urine positive
- CMV PCR mouth swab
- soak in saliva send in viral transport medium to regional laboratory
- if negative and high risk CMV also send urine

Other congenital infection screen depending on features (not exclusive):

- Toxoplasma (hydrocephalus, microcephaly, convulsions, generalised infection)
- Syphilis (rash, rhinitis, hepatosplenomegaly, jaundice, thrombocytopenia)
- Rubella (cataract, deafness, microcephaly)
- Zika (maternal/paternal travel, microcephaly)
- Haemolytic anaemia
- Thrombocytopenia
- Conjugated hyperbilirubinaemia
- Raised liver enzymes
- HIV antibody test

CMV POSITIVE

Further investigations

- Blood and urine CMV viral load
- Ophthalmology: chorioretinitis
- Audiology: formal hearing test [not only screening auditory brainstem response (ABR)] sensorineural hearing loss
- Head ultrasound: hydrocephalus, cysts (if normal CT)
- MRI head
- imaging studies of the head may show hydrocephalus, cysts, intracranial calcification, ventriculomegaly, cerebral atrophy

TREATMENT

Not indicated

- Asymptomatic
- Mildly symptomatic with no CNS disease (discuss with paediatric infectious disease specialist, together with parental preference)
- isolated IUGR
- hepatomegaly with normal liver enzymes
- isolated raised ALT/AST
- mild thrombocytopenia
- <37 weeks' gestation
- postnatal acquired CMV

Offer treatment:

- Significant organ involvement
- Any CNS disease, including isolated sensorineural hearing loss
- Valganciclovir 16 mg/kg oral 12-hrly for 6 months
- if **not** tolerating oral feeds, ganciclovir 6 mg/kg IV [prepared by pharmacy (cytotoxic)] over 1 hr, 12-hrly for 6 weeks
- Discuss side effects vs benefits with parents:
- **advantages:** potential reduced risk of deafness and developmental delay
- **disadvantages:** during treatment reversible blood dyscrasia; long-term unknown risk to fertility and malignancy
- Start treatment as soon as possible
- if diagnosis delayed can be started aged ≤1 month
- aged >1 month, can be offered as part of placebo randomised trial

FEEDING

- Do not discourage infected women from breastfeeding their own uninfected, term babies (CMV can be transmitted via breastfeeding, but benefits of feeding outweigh risks posed by breastfeeding as a source of transmission)
- Avoid breastfeeding of premature baby if mother is positive and baby asymptomatic

FOLLOW-UP

- Enter on CMV surveillance register (discuss with paediatric infectious disease specialist)
- Ganciclovir IV: FBC, LFT, U&E at least twice weekly
- Valganciclovir oral: FBC, LFT, U&E at weeks 2 and 4, then monthly until completion
- CMV viral load alternate weekly for 1st month, then monthly on antiviral therapy
- Therapeutic drug monitoring if:
 - viral load increases on treatment
 - toxicity suspected
 - abnormal renal function at <36 weeks' gestation
- Audiology: 3 monthly for 1st yr, then 6 monthly for 3 yr, then annually until aged 6 yr for both asymptomatic and symptomatic congenitally infected babies
- If treated:
 - ophthalmology: at least annually until aged 5 yr
 - neurodevelopmental assessment: aged 2 yr
 - if delayed development discuss MRI brain with radiology