CONGENITAL CMV: DIAGNOSIS AND MANAGEMENT GUIDELINE

POLICY

The purpose of this policy is to facilitate the diagnosis of congenital cytomegalovirus (CMV) infection as early as possible, in order to provide optimal treatment and support for all babies at risk. All eligible infants are to be screened for cCMV as early as possible.

Applicability: Maternal Gyne and Neonatal Programs

Indications for Screening:
CMV testing via saliva swab or (non-sterile) urine should occur in the following instances:

1. Failed 2nd stage newborn hearing screen (unilateral or bilateral).
2. Delayed newborn hearing screening for >1 week after birth:
    a. All NICU admissions
    b. IN admission and <34 weeks gestation at birth
3. Symptoms or signs consistent with cCMV infection **not otherwise explained**:
    a. Intrauterine growth restriction, small for gestational age, or microcephaly
    b. Seizures, lethargy, or hypotonia
    c. Intracranial calcifications or other brain abnormalities
    d. Thrombocytopenia
    e. Petechiae or purpura
    f. Jaundice present at birth
    g. Hepatomegaly or splenomegaly
    h. Pneumonitis
    i. Retinitis, retinal scarring or optic atrophy
4. Other:
    a. Suspicion of primary CMV infection during pregnancy
    b. CMV seen on placental pathology
    c. Maternal HIV infection or other immune deficiency

Reporting of cCMV results

- Saliva and urine samples for CMV testing are processed two days a week and positive results reported within 24 hours to the ordering physician and pediatric infectious disease for appropriate provider and recommend referral to appropriate follow-up.
- Referral to General Paediatrics Clinic, Audiology and Ophthalmology at BC Children's Hospital for further investigation
- MD provider to discuss the results of cCMV screening and need for further follow-up.

<u>Follow-up Investigation</u>

1. **Paediatric Evaluation**: Ideally at the General Paediatrics Clinic at BC Children's. Should be completed as quickly as possible before 3 weeks old. Assessment to include:
    - Complete history and physical exam with anthropometrics
    - Urine CMV PCR (sample does not need to be sterile) to confirm infection
    - Lab Tests: CBC + differential, Serum CMV PCR, BUN/creatinine, LFTs
    - Cranial ultrasound
    - Counselling for parents about cCMV infection as well as the risks of CMV transmission to other pregnant women or immunocompromised contacts.
2. **Audiology**: Perform Diagnostic ABR testing for all CMV positive newborns that failed stage 2 hearing screen
3. **Ophthalmology Evaluation:** retinitis and other sequela
4. **Otolaryngology Evaluation:** for infants with confirmed sensory neural hearing loss (SNHL)

Treatment Options:

- Discuss with Paediatric Infectious Diseases prior to initiating therapy for cCMV infection.

Patient Presentation	Asymptomatic	Symptomatic <30 days of age	Symptomatic >30 days of age
Treatment Indication	No Treatment Indicated	Treatment considered for all neonates	Treatment considered on case by case basis
Medication	None	Valganciclovir 16 mg/kg/dose by mouth twice daily for 6 months	
Monitoring		Clinical Evaluation: Monthly at minimum Lab Monitoring: (weekly x4 weeks, every 2 weeks x8 weeks, every month x3 months) a. CBC with Differential b. AST ALT and bilirubin c. BUN Creatinine Serum PCR for viral load after 3 months of treatment	
Side Effects		Adverse drug events e.g. neutropenia should be discussed with Pediatric Infectious Diseases	

Follow-up:

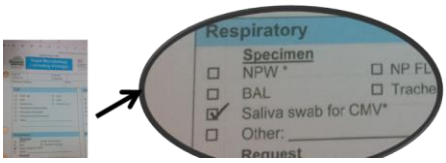
- Follow-up recommended for all infants with confirmed cCMV infection as SNHL related to CMV may develop at any time between birth and ≥6 years of age.
- Infants with cCMV infection are at risk for developmental delays and are eligible for Infant Development Program (http://www.mcf.gov.bc.ca/spec_needs/idp.htm)

Contacts: Routine questions regarding cCMV management should be referred to Dr. Soren Gantt, sgantt@cfri.ca. For urgent questions, clinicians should page either the on-call Children's Hospital Medical Microbiologist or Infectious Disease team through the page operator at 604-875-2161 or 1-888-300-3088.

DOCUMENTATION

Requisition

Rapid Microbiology (including Virology) form: 00051977A

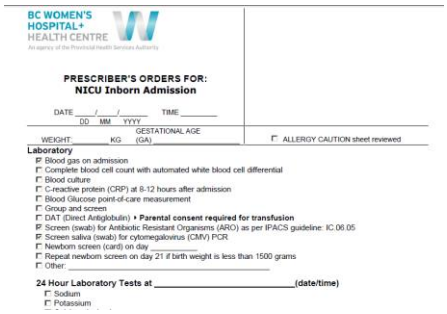


NICU/IN

Document the collection of the CMV swab in two places:

1. Admission Documentation Form Neonatal Intensive Care Unit (NICU)

2. NICU Admission Order Sets

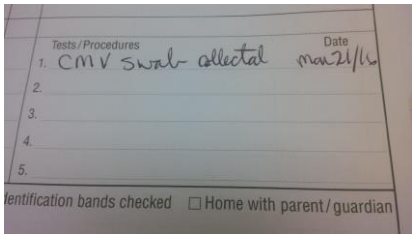


Postpartum Units/IN (if failed hearing screen)

Document the collection of the CMV Swab in **two** places:

1. Newborn Record Part 2: Progress Notes

2. British Columbia Newborn Clinical Path



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