

HERPES (CONGENITAL AND NEONATAL)

Disease Overview

Neonatal herpes simplex virus (HSV) is a serious viral infection which generally begins after a seemingly healthy neonate has left the hospital. It affects major organs (brain, liver, lungs) often causing permanent damage or death. Untreated neonatal HSV has only a 40 percent survival rate and results in significant disability among survivors.

Symptoms

Neonatal infections are divided into 3 clinical presentations: 1). Disseminated disease involving multiple organs predominately liver and lungs; 2) localized central nervous system(CNS); or 3) disease localized to the skin, eyes, and mouth (SEM). There may be overlap among the different syndromes.

Symptoms appear most often in the first two weeks of life but may not appear until the fourth week. More serious symptoms begin in 7-10 days if treatment is not started.

Symptoms may include variable temperature, convulsions, drowsiness, poor muscle tone, dyspnea, liver inflammation and poor feeding. Asymptomatic infection is not thought to occur in neonates.

Relapses may occur after the cessation of therapy. There may be evidence of recurrent disease and neurological sequelae. Sequelae are most likely to occur among infants who were diagnosed with CNS or disseminated disease. Recurrent skin lesions are frequent in infants with neonatal HSV. This may be associated with CNS sequelae if they occur during the first six months of life.

Reservoir

Humans are the reservoir. Pregnant women with active genital lesions (especially primary lesions) are the most common source of infection for the fetus or newborn.

Mode of Transmission

Most neonatal infection result from exposure to a HSV infected maternal genital tract during delivery. Transplacental transmission of virus and hospital-acquired spread from one neonate to another by hospital personnel or family rarely occurs.

Incubation Period

Median incubation period is 4 days; with a range from 1-28 days.

Period of Communicability

Infected neonates are infectious for the duration of their illness

Risk Factors

The risk of transmission to the neonate from an infected mother depends mainly on whether the infection is primary or recurrent

The risk for transmission is higher among women who acquire infection in late pregnancy and low among women with histories of recurrent herpes at term or those who acquire genital herpes infection during the first term of pregnancy.

Exposure to excretion at the time of delivery is dangerous to the newborn. Primary infection in the mother increases the risk of transmission of infection to the newborn.

Surveillance Case Definition

There is no national case definition.

Confirmed Case

Laboratory confirmation of infection with or without clinical illness^[1] in a neonate:

- Virus isolation from an appropriate clinical specimen (CSF, skin or other tissue)

OR

- Detection of viral nucleic acids in CSF using molecular diagnostic techniques, when available.

^[1]Clinical illness can be of 3 different syndromes: skin, visceral, and central nervous system infections. Dermatologic manifestations are often a late manifestation, or might not occur at all.

Diagnosis and Laboratory Guidelines

A diagnostic lesion is a cluster of vesicles on an erythematous background.

Serum hepatic transaminase levels should be measured to provide supporting evidence for disseminated HSV infection.

When evaluating NHSV infection in exposed asymptomatic infants, mucous membrane swabs should be obtained from the mouth, nasopharynx and conjunctivae *at least* 24 h after delivery. Additional swabs may be obtained (eg, from sites of scalp electrodes, if present).

For neonates, gently rub conjunctiva, insert separate swab into mouth (and gently rub around the lips), external ear canal, umbilicus, axillae and groin. Specimens should be collected 24–48 hours after birth.

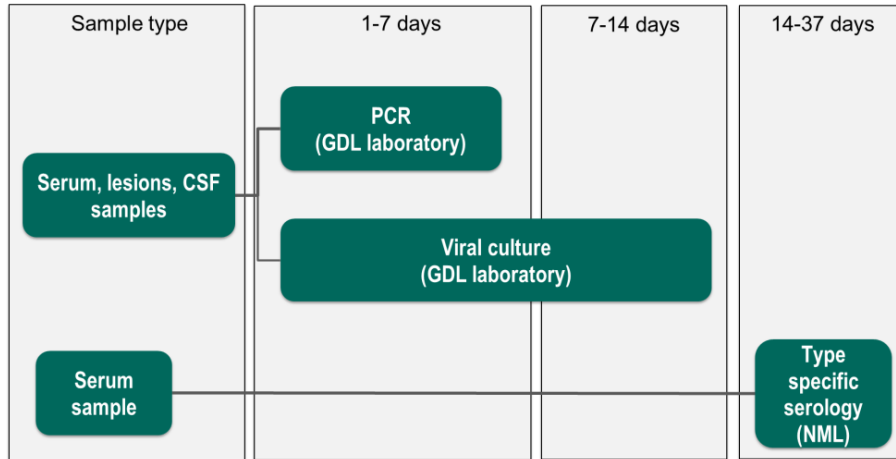
Laboratory Guidelines

The main diagnosis test for HSV is PCR. In some situations, the PCR can differentiate between the HSV1 and the HSV2. The test can be done on CSF, serum, and swabs.

Viral culture is still available, but not considered as a basic test and the laboratory may require a microbiologist request before processing the test. It takes longer and is not as sensitive as the PCR.

The National Microbiology Laboratory in Winnipeg offer serological tests to differentiate between HSV1 and HSV2.

Figure 1: Laboratory testing and turnaround time



Reporting

Per Policy 2.2 Disease and Event Notification to OCMOH and Disease and Event Reporting section. .

- Routine Surveillance (RDSS)

Case Management

Refer to the Canadian Paediatric Society *Prevention and management of neonatal herpes simplex virus infections* and the latest version of the [Canadian Guidelines on Sexually Transmitted Infections](#)

Education

The parents of case or relevant caregiver should be informed about:

- Nature of infection, length of communicable period and mode of transmission
- Sexually Transmitted and Blood Borne Infections Precautions
- Asymptomatic neonates whose mothers have active HSV lesions should be managed using contact precautions until the end of the incubation period (day 14) or until samples from the infant taken after the first 24 h of life are negative. Some experts do not recommend contact precautions if an infected infant is born by Cesarean section and membranes are ruptured <4 h to 6 h.

Investigation

Neonates with HSV infection and exposed neonates.

- Given the potential for significant neurological sequelae in survivors of NHSV infection, affected infants should have a structured follow-up program that allows for neurodevelopmental, ophthalmological and hearing assessment
- Should be managed using contact precautions when mucocutaneous lesions are present and until lesions have crusted.

Exclusion/Social distancing

Not applicable

Treatment

Refer to the Canadian Paediatric Society; [Prevention and management of neonatal herpes simplex virus infections](#) and the latest version of the [Canadian Guidelines on Sexually Transmitted Infections](#).

Treatment should be administered in consultation with a pediatric specialist to all neonates with HSV infection irrespective of presenting clinical findings.

Immunization

No immunization available

Contact Management

No public health interventions are required for contacts.

Management of special situations

Mothers with active HSV

- Mothers should be on contact precautions until their lesions have crusted.
- Mothers with herpes labialis should wear a disposable mask when caring for their infant <6 weeks of age, until lesions are crusted.
- There is no contraindication to breastfeeding unless there are herpetic lesions on the breast.
- Mothers with skin lesions should keep them covered whenever their newborn is present.

Outbreak Management

Activate the local outbreak plan when an outbreak is declared