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GENITAL HERPES SIMPLEX VIRUS (HSV)

SCOPE

RNs must consult or refer to a physician (MD) or nurse practitioner (NP) for a prescription if required.

ETIOLOGY

The herpes simplex virus (HSV type 1 or 2) is a member of the *Herpesviridae* family.

EPIDEMIOLOGY

In BC, HSV-1 accounted for over 40% of genital HSV infections from 1999-2005. In BC, a serological survey of pregnant people reported a prevalence of 17% HSV-2 in 1999.

In Canada, 13.6% of people tested positive for HSV-2 in 2009-2011.

In the US, the HSV-2 prevalence declined from 18.0% in 1999-2000, to 12.1% in 2015-2016.

Risk Factors

Sexual:

- contact with lesions, oral or genital secretions, or mucosal surfaces containing HSV
- close skin-to-skin contact
- transmission more likely to occur:
  - during primary infections
  - from the penis to the vagina, during vaginal sex
  - HIV/HSV-2 co-infection can increase HSV-2 genital shedding and transmissibility
- autoinoculation can occur
- transmission can occur during asymptomatic periods of shedding

Vertical:

- greatest risk to infant if primary infection is acquired in third trimester

CLINICAL PRESENTATION

The presentation of HSV infection is independent of HSV type, and is highly variable. All stages of infection can range from asymptomatic to or mild to severe symptoms, as described below.

Stage	Current Infection	Pre-existing antibodies	Description	Symptoms
Primary Infection	HSV-1	None	• incubation period: 4 days (range 2 to 14 days) • symptoms last 2 to 4 weeks • HSV IgG antibodies begin to appear 12 to 16 weeks after initial infection, and are lifelong	• when symptoms present, more likely to be severe • common symptoms: ○ lesions begin as vesicles, rupture, and then ulcerate ○ intense pain ○ itching ○ dysuria ○ lymphadenopathy ○ vaginal discharge • systemic symptoms: fever, headache, nausea, myalgia and malaise
	HSV-2	None		
Nonprimary Infection	HSV-1	HSV-2	• first clinically evident genital infection where there are pre-existing HSV antibodies of the opposite HSV type, from a prior infection • fewer lesions that can last up to 15 days	• pre-existing antibodies provide some protection • variable presentation, difficult to distinguish from primary infection • systemic symptoms less likely • complications are uncommon
	HSV-2	HSV-1		
Recurrent Infection	HSV-1	HSV-1	• recurrent infection where there are pre-existing HSV antibodies of the same type from a prior infection • more likely to recur: ○ during 1st year ○ if HSV-2 infection ○ if immunosuppressed • frequency decreases over time • lesions typically last 7 days	• variable presentation. Lesions are typically less severe and occur on one side, but can be asymptomatic • systemic symptoms less likely • atypical vaginal lesions can present as fissures or irritation • up to 50% will have prodromal symptoms hours to days before lesions appear: local burning, tingling, shooting pains to buttocks/legs/hips, or vague discomfort • some may notice triggers (e.g., menses, emotional/physical stress, sexual intercourse, medications)
	HSV-2	HSV-2		

PHYSICAL ASSESSMENT

In the presence of extensive or painful lesions, internal exams can be deferred. An assessment may include examination of the:

- external genitalia, and where appropriate, internal genitalia and anus/rectum (also see Proctitis DST) for lesions
- inguinal nodes: can be swollen and tender
- external genitalia can be edematous and irritated
- cervix: may see lesions and/or discharge
- penile urethra: may see discharge, usually clear and mucoid
- vagina: may see increased discharge (purulent or bloody if primary infection)

Extra-genital and oral lesions can also present and contribute to HSV transmission.

DIAGNOSTIC AND SCREENING TESTS

HSV PCR Swab

HSV PCR is the preferred test for HSV, as it is site- and type-specific. Refer to the eLab Handbook for complete specimen collection and processing information.

- if a vesicle is present, unroof it and collect fluid with swab

Also consider collecting swabs for syphilis and/or *Lymphogranulaoma venereum* (LGV) where clinically and epidemiologically appropriate (see Syphilis DST and LGV DST).

Serology

Serologic HSV testing is recommended where results will be clinically meaningful in preventing serious adverse outcomes (e.g., pregnancy). In all other settings, potential psychosocial harms should be carefully considered prior to testing. It is not recommended as a part of routine STI screening.

It is limited in its ability to guide sexual health decision making, in that it does not inform:

- the location of asymptomatic infections on the body
- where prior infections came from or when they occurred
- the likelihood of future symptoms or recurrent infection(s)

Positive results may reflect subclinical infections from prior sexual or childhood exposures (i.e., “cold sores”), and not of a current presentation. This can lead to significant anxiety, stigma, and negative effects on relationships, and has not been shown to disrupt HSV transmission or to change sexual behaviour.

HSV IgG testing is no longer performed by the BCCDC PHL.

HSV type-specific serology (TSS)

HSV TSS measures type-specific HSV IgG antibodies against HSV-1 and -2. It is not recommended as a part of routine STI screening, or if someone is asymptomatic, and does not meet the testing criteria recommended below. If HSV TSS is recommended, thorough pre-/post-test counselling is advised.

HSV TSS may be ordered through the BCCDC PHL if one of the following conditions is met:

- Before or early in pregnancy, where there is no history of HSV, but a partner has a history of HSV. If initially negative, consider repeating at 32 to 34 weeks, particularly if there are ongoing risk activities. Routine perinatal serologic screening for HSV is not recommended.

  See the Society of Obstetricians and Gynaecologists of Canada Guidelines and Perinatal Services BC Guidelines and Standards for further information.

- Based on clinical judgment. Some examples where TSS may be indicated include:
  - atypical or recurrent genital disease, where prior testing (including HSV PCR swab) has not provided a definitive clinical diagnosis
  - serodiscordant couples, where one partner has had HSV diagnosed and typed

MANAGEMENT

Diagnosis and Clinical Evaluation

Diagnosis can be made based on clinical presentation and physical assessment, although lab confirmation is recommended. If no prior history of HSV infection, a presumptive diagnosis can be made until test results are available.

Notes:

- A negative HSV PCR result does not necessarily rule-out genital herpes, as viral shedding may have been too low at the time of testing to detect.
- If a swab result reports VZV, consult with and/or refer to a MD/NP for clinical assessment and treatment. See the BCCDC Communicable Disease Manual, Chapter 1, Varicella Zoster (2018) for further information.

Consultation and Referral

Consult with or refer to a MD or NP all clients who:

- are pregnant or breast-/chest-feeding
- have severe, extensive outbreaks
- require an antiviral prescription
- have an HSV PCR result that indicates VZV

Treatment

Treatment is not covered by the provincial formulary. Consult with or refer to a MD or NP for a prescription where appropriate.

Treatment is not curative but it is safe, effective and can significantly improve quality of life for those living with HSV infection.

Benefits are variable, but can include:

- reduced forward transmission during both asymptomatic and symptomatic periods, by decreasing HSV viral load, although subclinical shedding is still possible while on treatment
- reduction of outbreak duration by 1 to 2 days on average
- decrease in the experience of pain and number of lesions

The decision to take treatment is individual and based on the following considerations:

- primary infection (viral load is thought to be highest at this time). Treating early before PCR results are available could potentially help decrease risk of transmission and duration of symptoms
- frequency of recurrences
- severity of symptoms
- psychological morbidity
- desire to take daily therapy, balancing cost, dosing, and side effects, with transmission risks
- serodiscordant partner(s)

Treatment options:

1. No treatment – may be appropriate if:

   - no or few recurrences after primary infection
   - recurrences have minimal or no impact on quality of life
   - poor experience with treatment side effects
   - cost or daily dosing considerations do not outweigh the clinical benefits

2. Treatment

   All oral options available in BC are thought to be equally effective: valacyclovir, acyclovir and famciclovir. Preference depends on cost and dosing. It is recommended to review treatment response after the initial course, and every 6 months thereafter.

Treatment approaches:

a. **Episodic** – client-initiated treatment lasting 1 to 5 days

   - most effective if started immediately upon first prodromal symptoms or within a day of onset of lesions
   - more convenient and cost effective than suppressive therapy
   - many guidelines recommend this option when there are less than 6 recurrences per year

b. **Suppressive** – daily therapy

   - if the individual is experiencing significant clinical and/or psychological morbidity
   - many guidelines recommend this option when there are more than 6 recurrences per year

Topical preparations should not be used in isolation, as they do not address any potential systemic symptoms and are generally not thought to be as effective. Topical anesthetics or corticosteroids may be helpful adjunct therapies to help provide temporary relief.

Monitoring and Follow-up

- **Repeat testing: No**
- **Test-of-cure (TOC):** No
- **Follow-up:** after 1 week, review treatment response. Sometimes treatment duration may need to be extended

Partner Counselling and Referral

- **Reportable: No**
- **Trace-back period: N/A**
- **Recommended partner follow-up:** counsel on the importance of informing current and future partners to prevent further sexual and perinatal transmission, providing ongoing support, education and counselling as appropriate

Potential Complications

More common in those with a primary HSV infection:

- proctitis
- cervicitis
- urethritis
- superinfection of lesions (often with candida)
- extragenital lesions
- aseptic meningitis

- sacral radiculitis (acute urinary retention with loss of sacral sensation)
- herpetic keratitis
- neuropathic bladder

Rare, but severe HSV disease can also lead to disseminated infection, pneumonitis, fulminant hepatitis or CNS involvement.

Neonatal

Babies can get infected when coming into contact with HSV while passing through the birth canal, before birth (congenital infection), or in the weeks after birth.

- 30-50% risk of HSV transmission to neonates when primary genital HSV occurs near delivery
- less than 1% risk in those with prenatal histories of recurrent HSV, or acquisition of genital HSV in the first half of pregnancy

Additional Client Education

HSV diagnosis can cause a great deal of distress for many people. For further information and counselling strategies, refer to:

- BCCDC's Herpes: A Health Care Provider's Guide
- BCCDC's Herpes: A Patient's Guide
- BCCDC's Herpes Simplex Virus handout
- PHAC's Genital Herpes Counselling Tool
- Standard Client Education for Sexually Transmitted Infections and Blood-Borne Infections (STBBI)

Counsel client:

- regarding perinatal and sexual transmission risks.
- that if pregnant or the partner of someone who is pregnant, to advise obstetric care giver(s) as soon as possible.
- that a HSV diagnosis can elicit a strong reaction of fear, anxiety and shame in many people; emphasize the following:
    - for most people living with this infection, symptoms are mild and do not significantly impact daily life.
    - that severity and frequency of recurrences decrease over time.
    - recognizing prodromal symptoms is very much individualized.

- that although the majority of transmission appears to occur during asymptomatic periods (more common in the first 12 months after initial infection), to abstain from sex during outbreaks.
- that suppressive treatment can help reduce transmission risks in serodiscordant relationships.
- about hand hygiene and not touching/picking at lesions, as this could lead to autoinoculation at other sites.
- that condoms provide some protection against HSV, but transmission may still occur as condoms may not fully cover affected areas.
- of comfort measures to help with pain or discomfort, including:
    - analgesics
    - warm bath, gently pat dry or use a blow dryer on a cool setting
    - wear loose fitting clothing made of breathable materials such as cotton
    - applying an ice-pack wrapped in a clean covering
    - if dysuric, urinate in warm water or pour water over the genitals while urinating, and drink plenty of fluids to dilute urine

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