



Herpes simplex – Not Always Simple

Herpes simplex virus (HSV) 1 and 2 are closely related to each other and more distantly related to Varicella Zoster virus (VZV), which causes Varicella (chicken pox) and Herpes Zoster (shingles).

Traditionally HSV1 causes most oral herpes and HSV2 causes most genital herpes. But this is no longer so and has changed, probably due to more frequent oral sex.

Figures from Clinipath 2017:

HSV Swab Origin	HSV1	HSV2	VZV
Oral sites	93%	2%	5%
Genital/perineal sites	45%	50%	5%

HSV1 is frequently acquired in childhood and 75% of Australian adults would have had HSV1 by early adulthood. This would have been from oral contact with close friends and relatives who were shedding the virus, often asymptotically. The classic “cold sores” are a blistering painful rash around the mouth.

Like other viruses in the Herpes family, this ‘lifelong’ infection can lay dormant and reactivate. The risk of reactivation and severe reactivation is higher in immunosuppressed individuals but in most people there is no readily identifiable reason for their reactivation. Stress is often blamed.

Less common infections include:

- HSV encephalitis (HSV1 in adults) and HSV meningitis (usually HSV2 in adults)
- Conjunctivitis/keratitis – usually HSV1 or VZV (shingles affecting trigeminal nerve)
- Herpetic whitlow – painful vesicles affecting the fingers and thumb caused by HSV1 or 2

Genital Herpes

This causes most angst in patients as there is a social stigma. Approximately 1 in 7 of the general Australian adult population is seropositive to HSV2 but most are asymptomatic or subclinical.

Laboratory testing

HSV PCR is performed on a swab of a lesion to detect viral DNA. It is the test of choice for diagnosis of HSV infections. Clinical diagnosis may be confirmed by swabs of the lesions/vesicles for HSV PCR. This can accurately distinguish between HSV1, HSV2 and VZV.

HSV Serology has a more limited role. Many clinicians (and patients) expect Herpes serology to be able to do more than it can! Test results may not answer many clinical or patients’ questions.

A positive serology simply indicates a patient has been infected with HSV at some time in the past. It is not able to time the initial infection unless seroconversion (HSV IgG changing from negative to positive) can be demonstrated. In Herpes reactivation, the IgG would already be positive.

Serology does not indicate the site of infection (e.g. oral or genital) although a strong positive HSV2 serology in the setting of painful genital lesions is likely to indicate genital herpes. Serology does not confirm whether symptoms are due to herpes. A positive PCR on a genital lesion would be more helpful.

Positive serology is not able to tell if the person is infectious at the time of the test. HSV Serology or PCR would NOT be able to determine whether a person’s partner has been unfaithful!

False positive (perhaps up to 5%) and false negative serology results can occur.



Serology is often negative in acute primary herpes infection as HSV IgG can take a few weeks to a few months to become positive. Serology positivity may also decline over time.

HSV IgM is no longer performed in most labs as they often throw up more confusion due to the non-specific nature of the test.

HSV in Pregnancy

HSV can cause severe neonatal infections including meningo-encephalitis, disseminated disease and even death.

The highest risk is in symptomatic primary herpes infection of the birth canal/genital track.

Herpes simplex serology may be more useful in the setting of pregnancy in patients with genital lesions suggestive of herpes to help risk stratify whether the episode is likely to be primary HSV. The highest risk would be PCR proven active genital lesions and negative serology.

Treatment including anti-viral therapy and consideration of caesarean section may be discussed with the obstetrician. Management of the neonate with high risk of HSV should be handled by a neonatologist or paediatrician.

Treatment

These viruses may be treated with aciclovir, valaciclovir or famciclovir.

Detailed therapeutic advice is beyond the scope of this article. Guidelines may be obtained from the Therapeutic Guidelines and from the King Edward Memorial Hospital (KEMH) website for management of HSV in pregnancy and in neonates

Further Reading:

Australian STI Management Guidelines
Australian Therapeutic Guidelines
King Edward Memorial Hospital Guidelines

Key Points

- HSV1 and HSV2 may be clinically indistinguishable
- Diagnosis of choice is PCR from a ‘dry swab’ or viral transport medium
- HSV Serology is of more limited utility
- HSV in pregnancy, especially primary genital infection, needs to be taken seriously
- Antivirals are available for treatment or viral suppression

