

Genital herpes simplex virus type 1 infection: a thoroughly modern disease

BASIL DONOVAN MD, FChSHM, FAFPHM, FRCPI

Why is genital herpes simplex virus type 1 infection becoming more prevalent? What are the clinical implications of patients having this condition rather than herpes simplex virus type 2 infection?

Recently, a previously uncommon sexually transmissible infection (STI) has begun to dominate the statistics. A large Victorian laboratory reported that genital isolates of herpes simplex virus type 1 (HSV-1) now outnumber HSV-2 isolates in patients under the age of 20 years: 77.3% of HSV isolates in this age group were HSV-1. Overall, the percentage of genital isolates that were HSV-1 had risen from 15.8% in 1980 to 34.9% in 2003.¹ At the Sydney Sexual Health Centre in 2004, 50% of clinical first episode genital herpes was attributable to HSV-1, and the proportion had been increasing for many years (unpublished data). This is a trend that is being seen throughout the industrialised world.^{2,3}

The underlying causes for this trend are not fully understood, but the move towards genital HSV-1 infection (Figure 1) probably reflects a range of social and clinical factors, as summarised in the box on this page. The increasing popularity of oral sex by an increasingly susceptible adolescent and young adult population is probably a central factor. However, the relative risk of HSV-1 transmission through various oral sex practices is unknown. Equally, salivary contamination of fingers or fomites may also be a factor in HSV-1 transmission.

Clinically indistinguishable without laboratory testing, a diagnosis of genital HSV-1 rather than HSV-2 infection has implications for both the medical and counselling management



Figure 1. Patient with primary genital herpes with bilateral lesions, a purulent discharge caused by HSV cervicitis, fever, malaise and (later) urinary retention. In patients under the age of 20 years, this is more likely to be due to HSV-1 than HSV-2.

Factors contributing to increasing diagnosis of genital HSV-1 infection

Oral sex

Effective at avoiding the risk of pregnancy and most other STIs, oral sex may be viewed, it has been suggested, as a form of 'abstinence' by many adolescents⁴ and participation now begins soon after sexual debut.⁵

Prevalence

In the Australian population, HSV-1 is much more prevalent (probably mostly orofacial) than HSV-2 (with overall adult seroprevalence rates of 76% and 12%, respectively).⁶ Almost 90% of couples would have at least one partner infected with HSV-1.

Susceptible pool

Increased standards of living, including fewer siblings to swap secretions with, may be reducing childhood infection with HSV-1. This leaves more adolescents and adults vulnerable to sexual transmission of this virus.

Severity

Unlike HSV-2 infection, initial genital HSV-1 infection is usually a true primary infection (i.e. the first HSV infection of any type). The greater severity of primary infections may cause a higher proportion of people with genital HSV-1 infection to seek medical care.

Viral load

People with true primary genital HSV infection shed virus in higher levels and for longer duration than those with recurrent HSV infections, making a positive swab test more likely.

Professor Donovan (Series Editor) is Conjoint Professor, National Centre in HIV Epidemiology and Clinical Research, University of New South Wales, and Senior Staff Specialist, Sydney Sexual Health Centre, Sydney Hospital, Sydney, NSW.

Implications for clinical management of genital HSV-1 rather than HSV-2 infection

More severe initial episode

Initial HSV-1 infections are rarely preceded by HSV-2 infections, whereas most HSV-2 infections are clinically moderated by prior HSV-1 infection. True primary episodes are typically more painful with more extensive lesions, and often associated with constitutional and regional neurological symptoms. All patients with suspected initial episodes of genital herpes should be treated with urgency, regardless of type.

Fewer recurrences

Genital HSV-1 infection leads to fivefold fewer recurrences than HSV-2 infection. Thus, chronic suppressive therapy is rarely required for patients with HSV-1 infection.

The source

As subclinical HSV-1 is ubiquitous in families, extramural sources are not needed, and are even uncommon. Genital HSV-1 infection can be readily acquired from a virgin or, occasionally, fomites such as towels.

Transmission to future partners

As 76% of the general adult population is already infected with HSV-1,⁶ few future partners will be vulnerable to re-infection. Nevertheless, oral sex should be avoided if cold sores are present (Figure 2) and the HSV-1 infection status of the partner is unknown.

Transmission to the neonate

Initial genital HSV-1 infection may pose a bigger risk to the neonate than HSV-2 infection. Vaginal (or oral) sex with a susceptible woman should be avoided in the last eight weeks of pregnancy if the partner has genital or oral HSV-1 infection.

Serology

Serology is of limited use for the clinical diagnosis of genital HSV-1 infection because most people have a pre-existing orofacial infection and the test does not locate the condition. However, it could have use for testing a concerned partner who may have been the source or may be at risk of infection. Unfortunately, routine blood tests for HSV-1 (enzyme immunoassay) have finite sensitivity (about 85%).

No cold sores

Re-infection at another site seems to be rare after an initial HSV infection. A benefit of genital HSV-1 infection is that it may protect against future oral disease.



Figure 2. Oral herpes due to HSV-1. These lesions are a potential but not essential source of genital HSV-1 infection in a sexual partner. HSV-1 can be readily detected in saliva in the absence of lesions and, like HSV-2, only a minority of people infected with HSV-1 are aware of their infection.

of many individuals. In cases where the probable source of the infection or possibility of infecting others are the major issues of concern, determination of the viral type becomes very important. Either virus culture or polymerase chain reaction testing of a lesion swab can be used for typing, with the latter being more sensitive and yielding a faster result. The differing clinical implications of a patient having HSV-1 rather than HSV-2 infection are summarised in the box on this page.

As the HSV type will not be known when the patient first presents, it is suggested that detailed discussion about transmission from and to others be adjourned to a future consultation when the type is known.

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References

1. Tran T, Duce JD, Catton MC, Kelly H, Birch CJ. Changing epidemiology of genital herpes simplex virus infection in Melbourne, Australia, between 1980 and 2003. *Sex Transm Infect* 2004; 80: 277-279.
2. Scoular A, Leask BGS, Carrington D. Changing trends in genital herpes due to herpes simplex virus type 1 in Glasgow, 1985-88. *Genitourin Med* 1990; 66: 226.
3. Nilsen N, Myrmet H. Changing trends in genital herpes simplex virus infection in Bergen, Norway. *Acta Obstet Gynecol Scand* 2000; 79: 693-696.
4. Remez L. Oral sex among adolescents: is it sex or is it abstinence? *Fam Plan Perspect* 2000; 32: 298-304.
5. Rissel CE, Richters J, Grulich AE, de Visser RO, Smith AMA. Sex in Australia: first experience of vaginal intercourse and oral sex among a representative sample of adults. *Aust NZ J Public Health* 2003; 27: 131-137.
6. Cunningham AL, Taylor R, Taylor J, Marks C, Shaw J, Mindel A. Prevalence of infection with herpes simplex virus types 1 and 2 in Australia: a nationwide population-based survey. *Sex Transm Infect* 2006; 82: 164-168.

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