Genital herpes

Raj Patel

Abstract

Human α-herpesvirus infections are characterized by initial primary infections of variable severity followed by a period of neuronal latency that is interrupted by reactivation. Both the acquisition illness and the recurrent disease may become complicated. Although many individuals with genital herpes are relatively problem free, herpes simplex virus (HSV) infections can cause a wide range of problems. Troublesome symptoms can be managed effectively with antiviral therapy. For those individuals with relatively well-defined tolerable prodromes or occasional recurrences, and who do not have complicated disease, episodic therapy offers a useful alternative to continuous suppressive treatment. It was recently demonstrated that short courses of therapy with valaciclovir, aciclovir or high-dose famciclovir are as effective as longer courses of episodic therapy. However, for many patients, suppressive therapy remains the most effective means of managing their problems. Not only will continuous therapy control lesions and prodromal symptoms, it can also be highly effective at managing psychosexual problems and transmission risk. The management of HSV infection in pregnancy can be challenging. Third-trimester new infections are extremely hazardous and clear guidelines on planned caesarean section should be followed. The management of women with recurrent disease is more controversial. Recurrences at term are associated with neonatal disease (up to 3% transmission) and can result in substantial anxiety. HSV infections remain an extremely active area of research. New work shows the important role of genetic predisposition in determining the occurrence of severe neurological dissemination and the possibility of targeting new sites within the genome to effect better treatment.

Keywords Antivirals; herpes simplex; HIV; HSV-1; HSV-2; transmission

What's new?

- HSV-1 is the principal cause of genital herpes although severe frequent recurrent GH is still more commonly due to HSV-2
- Genital HSV infections increase the risk of HIV acquisition and transmission — these effects cannot be modified by HSV-suppressive therapy
- Episodic therapies for HSV are effective when given at high doses for 1—3 days

Genital herpes simplex virus (HSV) is the most common cause of genital ulceration, with local, systemic and psychosexual complications. It is an important cause of neonatal morbidity and a co-factor for HIV transmission, particularly in developing countries.

The herpes viruses cause latent and recurrent infections in humans and animals. They comprise three subfamilies (alpha, beta and gamma). HSV is a human α-herpesvirus, with two forms (HSV-1 and HSV-2) that are morphologically identical, though their DNA is only 50% homologous. All α-herpes viruses are able to establish latency and rely to some extent on intermittent reactivation for survival and transmission. Following initial infection, replication of HSV at the portal of entry results in infection of sensory nerve endings. Viral nucleocapsids are then transported by retrograde axonal flow to the neuronal cell nuclei in sensory ganglia, where latency is established. In cells outside the sensory nervous system, α-herpesvirus infection does not achieve latency, because viral replication leads eventually to cell death through lysis.

Raj Patel *FRCP is a Consultant in the Department of Genitourinary Medicine at the Royal South Hants Hospital, Southampton, UK.*
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Epidemiology and transmission

Sero-epidemiological studies suggest that the prevalence of HSV infection worldwide is highly variable (Figure 1). Serial population level studies in North America indicate that recent rises in HSV-2 infection in the developed world may now have plateaued in most of the heterosexual population. Levels of reported new diagnoses in the UK have been relatively stable during 2010—2012. Infection is widely distributed in the general population and varies in severity. In many developing countries, HSV-1 infection is now the principal cause of first-episode genital infection in most women and young men. Studies have shown that less than 30% of those who are HSV-2 sero-positive are aware of their genital herpes and 20% have no symptoms. Although initial infections with HSV-1 and HSV-2 are indistinguishable, HSV-2 disease is more likely to be recurrent and troublesome following genital infection (conversely, HSV-1 oropharyngeal infection is likely to recur most frequently).

Transmission occurs through genital-to-genital and orogenital contact. It is most likely when there are visible lesions, but most transmissions occur in the absence of local symptoms in the source partner. Infectivity is also increased during the prodrome and immediately after lesion healing. However, viral shedding from genital surfaces has been shown to occur on an average of 2% of days in the absence of symptoms or visible lesions. Such shedding is considerably greater following initial infection, is related to disease activity, is limited by an intact cell-mediated response to HSV infection and is an important source of transmission.

Condoms give some protection,[1] but do not cover the entire genital area, and few couples are able to use them consistently.

Several factors affect transmission.

- Infection is more easily passed from males to females than from females to males.
- The impact of previous infection with the other viral type on susceptibility in a partner has not been clearly established. However, subsequent infections tend to be milder. The risk of infection remains high, and the overall average annual risk of acquisition of the disease is about 10% per year of exposure, regardless of previous HSV infection.
- It is generally believed that there is little risk of re-infection when the partner has already been infected with the same viral type. Laboratory studies show that immunity to subsequent re-infection is greatest at the site of initial infection but can be overcome.

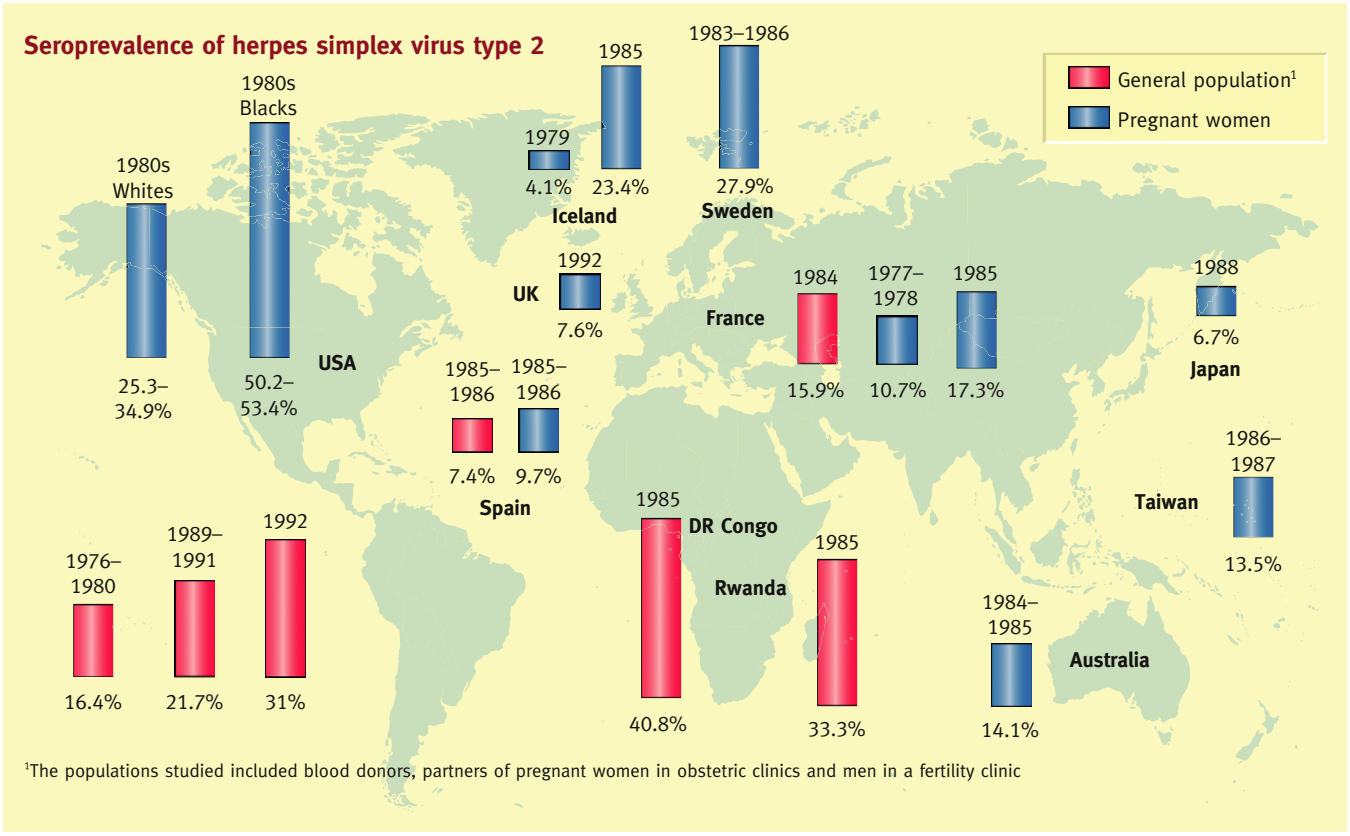

Figure 1 Source: International Herpes Management Forum Slide Lecture Kit, PPS Europe Ltd

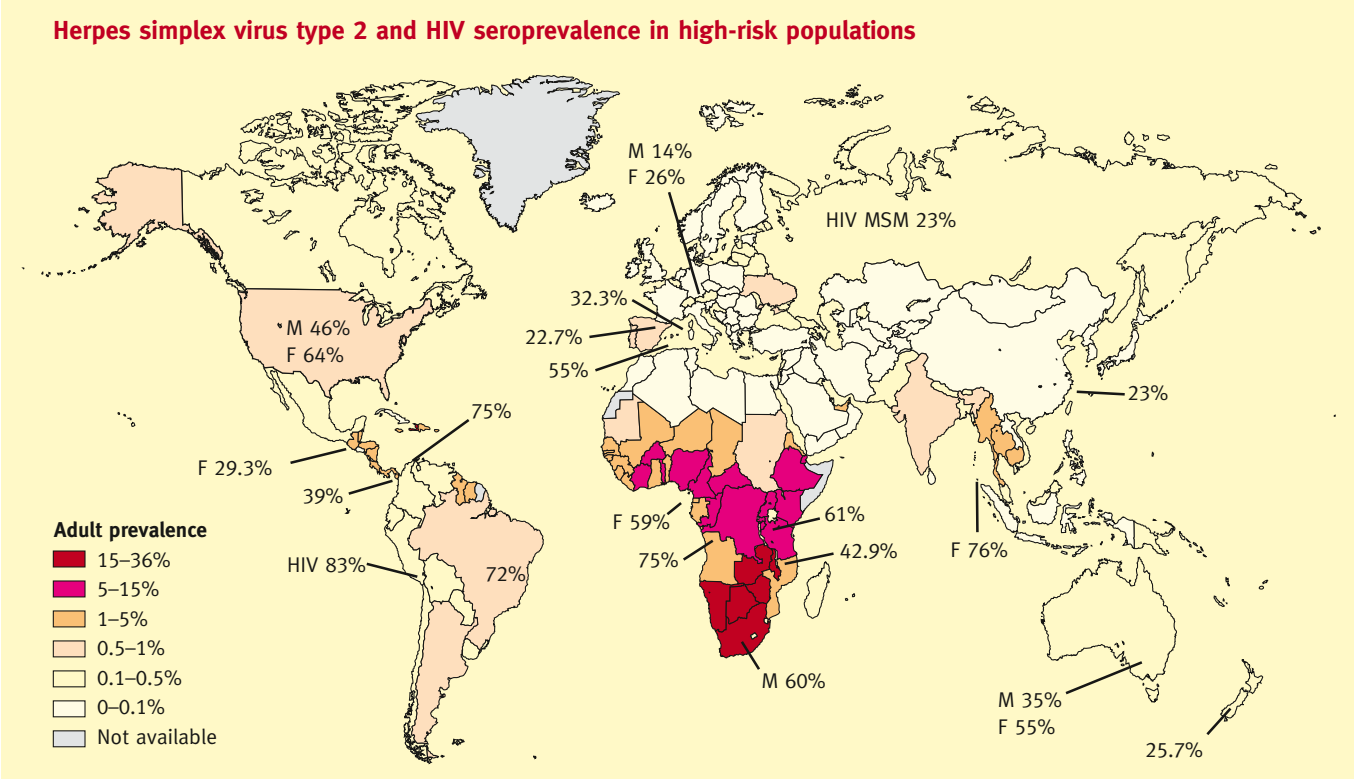

Figure 2