

# HOSPITAL PHYSICIAN®

## INFECTIOUS DISEASES BOARD REVIEW MANUAL

### STATEMENT OF EDITORIAL PURPOSE

The *Hospital Physician Infectious Diseases Board Review Manual* is a study guide for fellows and practicing physicians preparing for board examinations in infectious diseases. Each manual reviews a topic essential to current practice in the subspecialty of infectious diseases.

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## Genital Herpes

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# Genital Herpes

Matthew F. Davies, MD, FACOG, and Colin MacNeill, MD

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## INTRODUCTION

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Genital herpes is a sexually transmitted infection caused by herpes simplex virus (HSV). Although HSV-2 causes the majority of cases, HSV-1 can also cause genital herpes. Genital herpes is now the most prevalent of the sexually transmitted diseases (STDs), affecting 45 million persons in the United States.<sup>1,2</sup> In addition, the incidence of genital herpes infections in the United States is currently estimated to be 1 million new cases per year and is rapidly increasing.<sup>2</sup> This inordinately high incidence can be explained by failure to identify patients with genital HSV infection. In fact, it is estimated that less than 20% of HSV-2-seropositive patients have been diagnosed.<sup>3</sup> As a result, the risk of disease transmission to the sexual partners of infected patients is not being appropriately managed.

Managing patients with genital herpes involves preventing viral transmission to seronegative sexual partners as well as to neonates. This approach falls short for 2 reasons, both directly related to disease recognition. It is now known that there exists a large number of patients in whom asymptomatic viral shedding occurs.<sup>2</sup> Before viral shedding could be detected by sensitive polymerase chain reaction (PCR) methods, it was believed that there was little or no shedding in asymptomatic patients. Secondly, atypical lesions that are not readily identified as herpes lesions are highly prevalent. In a study performed at an STD clinic, only 60% of patients with positive HSV-2 cultures had typical external lesions.<sup>4</sup> Underrecognition of these 2 critical factors contributes greatly to the rapid spread of genital HSV infection, as failure to recognize disease precludes preventive interventions. Disease recognition begins with physician and patient recognition of risk factors. Recent findings of discrepancy between doctors' and patients' understanding of risk may provide necessary information upon which prevention programs can be built.<sup>5</sup>

This review examines characteristics of HSV biology that contribute to the high incidence of genital herpes and highlights how the syndrome is changing epidemiologically. Approach to clinical diagnosis and current recommendations for managing patients with

genital HSV infection are discussed, and the status of developing treatment strategies is reported.

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## EPIDEMIOLOGY

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### SEROPREVALENCE RATES

The most striking change involving genital herpes in the past 20 years is the rapid increase in HSV seroprevalence (ie, proportion of the population seropositive for antibodies to HSV). Seroprevalence is the best indicator of disease burden. According to the National Health and Nutrition Examination Surveys (NHANES) II and III, HSV seroprevalence in the United States increased from 16% in 1980 to 22% in 1994.<sup>6</sup> Many other developed countries also have reported increases in seroprevalence. For example, Lowhagen et al<sup>7</sup> found that the age-adjusted HSV-2 seroprevalence among pregnant women in Sweden in 1973 was 13% and had increased to 24% in 1989. It is important to note that very few studies compare identical populations and use similar enough methodologies to allow direct comparisons. However, the NHANES studies do use similar methods and populations, and while other Swedish studies find larger or smaller increases in seroprevalence, they support the NHANES finding that the seroprevalence of HSV is increasing.<sup>7,8</sup>

Analysis of US seroprevalence data, which calculates the strength of the association between HSV positivity and each factor within a specific population using multiple logistic regression, has elucidated several trends associated with HSV-1 and HSV-2 acquisition. For example, seroprevalence rises rapidly from 5% to 17% in patients between ages 20 and 29 years and is up to 28% in patients between ages 30 and 39 years, which is not unexpected given that during these years the number of sexual partners increases.<sup>4</sup> A study of first- and fourth-year US college students also elucidated significant predictors of risk for HSV seropositivity for this population (Table 1).<sup>9</sup> It has also been observed that the seroprevalence of HSV-2 is higher in the US general population than in the general European population but is lower than that of most developing countries.<sup>4</sup> Although these associations have not yet been clearly defined in the United States, it has been noted that seroprevalence rates vary widely