

# HOSPITAL PHYSICIAN®

## INFECTIOUS DISEASES BOARD REVIEW MANUAL

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## Infections with Herpesviruses I: Herpes Simplex Virus and Varicella-Zoster Virus

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#### INTRODUCTION

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For Hippocrates and other ancient Greek scholars, the word “herpes” (meaning to creep or crawl) was used to describe lesions that spread.<sup>1</sup> Members of the Herpesviridae family are large, DNA-containing enveloped viruses. There are approximately 100 known herpesviruses infecting a broad spectrum of hosts in the animal kingdom; 8 human viruses are recognized (Table 1).

All herpesviruses establish latency in their natural hosts. Most have the ability to transform cells, but the full relevance of this ability is uncertain, because only lymphotropic viruses (eg, Epstein-Barr virus [EBV]) are known to be tumorigenic. Herpesviruses are ubiquitous, infecting most persons, and can induce disease in 3 distinct ways: (1) by destroying tissues directly, (2) by provoking immunopathologic responses (such as hemolytic anemia, erythema multiforme, and thrombocytopenia), and (3) by facilitating neoplastic transformation.

Because herpesviruses are fragile and do not survive long in the environment, transmission generally requires inoculation of fresh, virus-containing body fluid directly into susceptible tissues of an uninfected person.

Except for varicella, most herpesvirus infections are transmitted asymptotically. Between a third to half of genital herpes simplex virus (HSV) infections are acquired from asymptomatic sexual partners. An even greater proportion of EBV infections most likely are transmitted asymptotically. Thus, episodes of asymptomatic shedding exceed those of symptomatic shedding. For example, asymptomatic shedding in cases of HSV infection occurs on 0.5% to 1% of days,<sup>2</sup> whereas asymptomatic shedding in cases of EBV infection occurs on 15% of days.<sup>3</sup> The likelihood of virus transmission, however, depends on the quantity of virus shed; the titer of virus recoverable from symptomatic infections greatly exceeds that recoverable from asymptomatic infections.

This manual is the first installment of a 2-part series on infections with herpesviruses and will focus on HSV and varicella-zoster virus (VZV) infections, providing information on their pathology, epidemiology, clinical features, complications, diagnosis, and management. The second installment, which will be published as Volume 8, Part 1, of the *Hospital Physician Infectious Diseases Board Review Manual*, will address infections with cytomegalovirus, EBV, human herpesvirus 6 (HHV-6), HHV-7, and Kaposi’s sarcoma-associated herpesvirus (HHV-8).