Oral Lesions Associated with Human Immunodeficiency Virus Disease

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KEYWORDS

• HIV • Oral candidiasis • Kaposi sarcoma • Oral hairy leukoplakia
• HIV salivary gland disease

KEY POINTS

- Human immunodeficiency virus (HIV)-associated oral lesions are numerous and diverse and may relate to opportunistic infections that occur in the setting of immune suppression.
- Presumptive HIV oral lesion diagnosis based on clinical appearance and lesion behavior may be sufficient for some benign-appearing lesions; whereas worrisome ulcerative lesions/masses require definitive diagnosis, usually based on histopathology.
- Patterns of oral disease prevalence and incidence have changed with improved HIV disease management and use of highly active antiretroviral therapy (HAART).
- HAART-related immune reconstitution inflammatory syndrome has reactivated some oral diseases and has resulted in other medication oral side effects in some patients.
- Pharmaceutical and nonpharmaceutical management are important considerations for HIV-associated oral lesions.

INTRODUCTION AND EPIDEMIOLOGY

Introduction

Human immunodeficiency virus (HIV) infection affects the host by targeting the CD4 positive T-lymphocyte population.[1] HIV viral particles bind with lymphocytes and use the lymphocyte as a host factory, where additional HIV viral particles are produced. During this repeated process of viral replication, the lymphocyte is exhausted and destroyed, resulting in fewer T-helper lymphocytes available to protect the host from a variety of viral, fungal, bacterial, and protozoal opportunistic infections and other neoplastic diseases (**Fig. 1**).

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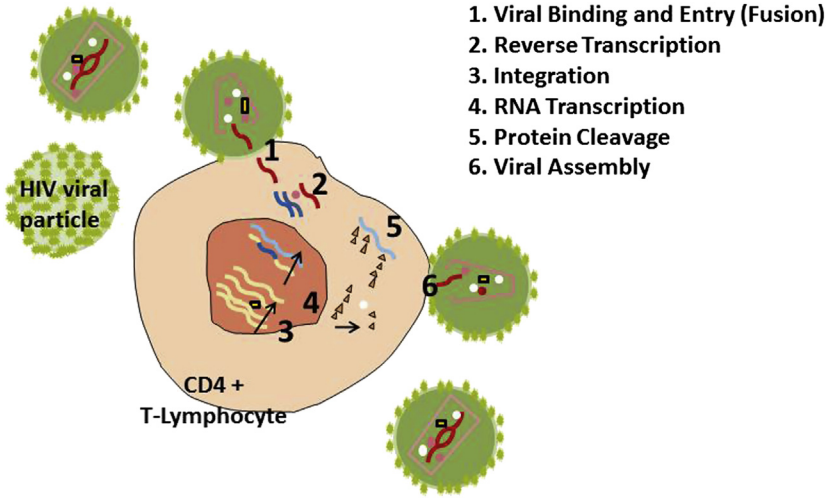

Fig. 1. HIV life cycle and stages at which antiretroviral therapy actions occur.

HIV disease management revolves around prevention, identification of the infected patient, and treatment of HIV with antiretroviral medications, as well as treatment of opportunistic infections and other conditions that arise. When medical management is effective at suppressing replication and reducing HIV viral loads to undetectable levels for prolonged periods, the patient is more likely to remain healthy and disease free. The standard of care is highly active antiretroviral therapy (HAART) regimens, using combinations of medications that target several stages of the HIV life cycle. The first anti-HIV medications developed in 1987, such as zidovudine, were nucleoside analogue reverse-transcriptase inhibitors and worked at stage 2, reverse transcription (see **Fig. 1**). In 1996, HIV protease inhibitors, such as indinavir, that worked at stage 6 were introduced. The newest classes of antiretroviral drugs are the fusion inhibitors and entry inhibitors (or CCR5 antagonists), working at stage 1 of viral binding and entry; and the integrase inhibitors working to block integration at stage 3.

Antiretroviral therapy is recommended for all HIV-infected individuals with the strength of evidence for the recommendation based on the pretreatment CD4 cell count.[2] The strongest confidence in the need for therapy is among those with CD4 counts less than 500 cells/mm^3, or those who are pregnant, or within the first 2 weeks of diagnosis of an opportunistic infection, regardless of CD4 count.[2] Adherence to the antiretroviral medication regimens has long been a concern, with reasons for regimen switching including virologic, immunologic, or clinical failure and drug toxicity or intolerance. Several multiclass combination antiretroviral medications have been developed to reduce the pill burden for patients.

Nature of the problem

Oral lesions caused by opportunistic diseases occur in patients with HIV infection, whether or not they are on HAART.[3] Although occurrence of some HIV-associated oral lesions has decreased after introduction of HAART, such as Kaposi sarcoma (KS), oral hairy leukoplakia (OHL), HIV-related gingival and periodontal disease, and major aphthous ulcers (MAU), others such as oropharyngeal candidiasis (OPC) have persisted. Some oral diseases, such as oral warts and HIV salivary gland disease, seem to have increased among those on HAART.[4,5]