

A Therapeutic Perspective of Living with Human Immunodeficiency Virus/AIDS in 2017

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KEYWORDS

- Antiretroviral therapy • HIV/AIDS • Preexposure prophylaxis
- Antiretroviral drug-drug interactions

KEY POINTS

- Antiretroviral therapy has evolved since being introduced in the late 1980s with more effective and tolerable agents being available to clinicians today.
- Patients with human immunodeficiency virus are living longer and have a life span comparable to patients who are not infected, emphasizing the relevance of drug-drug interactions and managing comorbidities.
- Antiretroviral therapy is on the brink of significant change with long-acting injectable agents on the horizon.

CASE VIGNETTE

A 22-year-old man presented to the emergency department in October of 1995 with a 5-day history of myalgia, cough, dyspnea, and nonbloody diarrhea. He had been ill for several days, ultimately seeking treatment for increased shortness of breath and fatigue. He is diagnosed with *Pneumocystis* pneumonia secondary to AIDS. He is discharged several weeks later with a prescription for daily trimethoprim-sulfamethoxazole. He sees a local infectious disease physician who starts him on zidovudine, didanosine, and saquinavir.

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INTRODUCTION

Human immunodeficiency virus (HIV) continues to burden patient populations across the world despite remarkable advances in antiretroviral therapy. This is perhaps best exemplified by the 2015 “Indiana outbreak” in Scott County, Indiana, which brought HIV back into national focus after incidence drastically increased over a very short period.^{1,2} This outbreak illustrates the complexity of issues, beyond access to care, which facilitates the persistence of the disease in the United States. Without question, living with and managing HIV in the United States today is much different from what it was when drug therapy first emerged in 1987.³ Newer, better-tolerated therapies have since become available, making a once-challenging and stigmatizing disease state more manageable from both a therapeutic and lifestyle perspective. This article reviews recent changes in epidemiology of HIV, outlines commonly used therapeutic options and management of comorbid conditions, and provides future direction of therapy for patients living with HIV/AIDS.

EPIDEMIOLOGY

According to the World Health Organization (WHO), by the end of 2015, approximately 36.7 million people around the world were living with HIV.⁴ Globally, sub-Saharan Africa has the highest incidence of patients affected, with nearly half of all new infections originating in the region.⁴ In 2014, there were an estimated 1.1 million persons living with HIV infection in the United States; this number includes the estimated 15% of those persons whose infections had not yet been diagnosed.⁵ Despite this, the incidence in the United States has decreased nearly 20% from 2005 to 2014, thought to be secondary to reductions in heterosexual transmission.⁶ Demographically, women in particular have had the greatest decrease in new diagnoses at approximately 40%.⁶ Unfortunately, these data also revealed a continued trend of disproportionately impacted patient populations, specifically among Latino and African American men who have sex with men (MSM).⁶ In 2015, nearly half of new HIV diagnoses were among African American individuals. More than half of the African American demographic diagnosed reported their risk factor as homosexual or bisexual contact.⁷ Of these “targeted” populations, the predominance of new diagnoses appear to be geographically concentrated in the southeastern United States, with one epidemiologic study finding more than half of all newly diagnosed patients being from the South.⁸ This was best exemplified by a recent surge of new cases of HIV in Jackson, Mississippi.⁹ This is thought to be the result of a complex interplay among demographic, psychosocial, and socioeconomic factors.¹⁰ Mortality is also higher in the southern states, paralleled and perhaps correlated by those unaware of their diagnosis. The continued burden on those affected by HIV across the United States as illustrated by the continuum of care cascade was ultimately the stimulus for the National HIV/AIDS strategy in an effort to “close the chasm” between patients who are diagnosed or are unaware of their status and linkage to care with subsequent virologic suppression. This is an oft-cited target, referred to as “90 to 90 to 90.” By 2020, 90% of all people living with HIV will be diagnosed with the disease, receive sustained antiretroviral therapy, and achieve viral suppression.¹¹ Part of the focus with the “90 to 90 to 90” model is “TasP,” or treatment as prevention, which emphasizes efforts of being placed on halting transmission of disease.

EVOLUTION OF ANTIRETROVIRAL THERAPY

Treating patients with HIV has taken monumental steps since the discovery of the virus in 1981. Initially, zidovudine was the only available agent and led to unacceptable

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