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Follow-up on the Longitudinal Study of the Ocular Complications of Human Immunodeficiency Virus/AIDS

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Keywords

• Human immunodeficiency virus • HIV • AIDS • Ocular complications • LSOCA • Acquired immunodeficiency virus • Cytomegalovirus retinitis

Key points

- Patients with human immunodeficiency virus (HIV)/AIDS remain at increased risk for ocular opportunistic disease.
- The incidence of cytomegalovirus retinitis has declined rapidly in the highly active antiretroviral therapy era, but it is still the most common cause of blindness in patients with HIV/AIDS.
- HIV and its associated therapies may be associated with a premature/rapid aging process, potentially increasing the risk for age-related eye disease.

BACKGROUND

The Studies of the Ocular Complications of AIDS (SOCA) group was convened in order to rigorously study and quantify the incidence of ocular complications of patients with human immunodeficiency virus (HIV)/AIDS as a prospective multicenter effort. Patients were enrolled at 19 centers in the United States specializing in ocular complications of HIV/AIDS beginning in September of 1998 until July of 2011 with extensive demographic and clinical documentation. Visits occurred at least every 6 months. There has been a plethora of information released from this study group, which has improved clinical outcomes and provided valuable epidemiologic data.

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One of the benefits of the SOCA studies has been the release of information from the LSOCA subgroup, the *L* identifying the longitudinal focus of these studies. As HIV has become a chronic disease, LSOCA has reported on the long-term effects of HIV and its therapies on vision, quality of life (QOL), and overall survival.

EPIDEMIOLOGY

In the pre–highly active antiretroviral therapy (HAART) era, CMV retinitis accounted for nearly 90% of all AIDS-related ocular infections and was frequent enough to earn a place as the most common intraocular infection in urban centers in the early days of the HIV epidemic [1,2]. Nearly one-third of patients who had HIV/AIDS could expect to develop CMV retinitis. In the 1980s, owing to the severity of immune compromise, life expectancy for those diagnosed with CMV retinitis was about 6 months [2]. CMV retinitis is now classified as the most common ocular opportunistic infection affecting the posterior pole and the most common cause of blindness in persons afflicted with the HIV [3,4]. It remains a late-stage manifestation of AIDS and is seen most commonly in patients with a CD4 count of less than 50 cells per microliter [1,2]. CMV retinitis has become significantly less common in the era of HAART, though new cases still occur [3–5].

The induction of HAART therapies in 1996 has had enormous systemic and ophthalmic benefits. The incidence of CMV retinitis has declined by nearly 80% to 90% in the HAART era, though it still is the leading cause of blindness in patients with HIV/AIDS [5–8].

DIAGNOSIS AND MANAGEMENT

In patients with AIDS, a CD4 count of less than 50 cells per microliter represents those at greatest risk. CMV retinitis rarely occurs in patients with a CD4 count of greater than 100 cells per microliter [8,9].

The diagnosis of CMV retinitis is based on typical clinical findings in at-risk patients. Patients may complain of either a floater or a new scotoma but often are clinically asymptomatic at the time of diagnosis, indicating a need to screen at-risk patients [1]. In patients with profound immune dysfunction, an active retinitis occurs in the absence of anterior or posterior chamber inflammation. Several patterns of retinal findings exist. Cases usually originate as small, white, retinal infiltrates resembling cotton-wool spots, often requiring close follow-up to distinguish between the two. The classic finding is that of retinal vasculitis and necrotizing retinitis associated with retinal hemorrhage and edema. Less classic are findings of granular retinal changes that can mimic a toxoplasmosis lesion. In the areas of granular changes, retinal pigment epithelium (RPE) atrophy and stippling are often seen. Reactivation of previously suppressed CMV retinitis often takes this form. Less common is a frosted branch angiitis as the initial presentation of CMV retinitis. In those cases showing granular changes or angiitis, or where the diagnosis of CMV retinitis may be unclear, diagnosis can be confirmed with the use of polymerase chain reaction (PCR) testing.