Figure 1. Annual incidence of cytomegalovirus (CMV) disease among the southern Alberta population of HIV-infected individuals, 1987–2005. The introduction of HAART was immediately followed by a drastic decrease in the incidence of CMV disease among the HIV-infected population of southern Alberta (*P* < .001, by nonpooled Student’s *t* test). There were 4 diagnoses of CMV disease among 15 patients receiving care in 1986 (542 cases of CMV disease per 1000 person-years); this data was omitted for clarity.
patients at risk for reactivation of CMV disease. More than 21% of all clinic patients had a CD4+ cell count \(<100 \text{cells/mm}^3\) in the pre-HAART era, compared with 8% in the HAART era \((P<.001, \text{by nonpooled Student's } t \text{ test})\). The incidence of a first episode of CMV disease decreased from a mean incidence of 40 cases per 1000 person-years during the pre-HAART era to 4 cases per 1000 person-years during the HAART era \((P<.001, \text{by nonpooled Student's } t \text{ test})\) (figure 1). The prevalence of CMV disease among our population has decreased from 15% in the pre-HAART era to 4% in the HAART era \((P<.001, \text{by nonpooled Student's } t \text{ test})\) (figure 2). The mean mortality rate primarily associated with CMV disease has decreased from 178 to 27 deaths per 1000 person-years with the use of HAART \((P<.05, \text{by nonpooled Student's } t \text{ test})\).

Despite the availability of HAART, 4 cases of CMV disease per 1000 person-years of HIV follow-up care still occurred. These cases were seen in patients with a median CD4+ cell count of 13 cells/mm\(^3\) and a median HIV load of 181,156 copies/mL who either presented for initial HIV care with a severely damaged immune system or had a known HIV infection and either poor adherence to HAART or drug-resistant HIV.

We have shown how, in a well-defined, HIV-infected population, the use of HAART was associated with a decreased number of individuals with sustained low CD4+ cell counts at risk for CMV disease. A concurrent decrease in the incidence, morbidity, and mortality associated with CMV disease was documented. CMV disease, however, was still seen. Patients with severely damaged immune systems who either presented for HIV infection care or who had adherence or intolerance issues, had multidrug-resistant HIV infection, or refused HAART accounted for these new cases. Given that well over 90% of HIV-infected patients are seropositive for CMV infection and that increasing numbers of patients are exhausting HAART options and experiencing decreases in CD4+ cell counts, the ongoing threat of CMV disease must not be overlooked.

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Sonia Kim, Jonathan J. Snider, and M. John Gill

1Southern Alberta Clinic and 2Faculty of Medicine, University of Calgary, Calgary, Alberta, Canada

References

Reprints or correspondence: Dr. M. John Gill, Southern Alberta Clinic, #213, 906 8th Ave. SW, Calgary, Alberta, Canada, T2P 1H6 (john.gill@calgaryhealthregion.ca).

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