Acute cytomegalovirus infection in Kenyan HIV-infected infants

Slyker, Jennifer A; Lohman-Payne, Barbara L; John-Stewart, Grace C; Maleche-Obimbo, Elizabeth; Emery, Sandra; Richardson, Barbra; Dong, Tao; Iversena, Astrid K N; Mbori-Ngacha, DA; Overbaugh, Julie; Rowland-Jones, Sarah L

Date: 2009

Abstract:

Objective: Cytomegalovirus (CMV) coinfection may influence HIV-1 disease progression during infancy. Our aim was to describe the incidence of CMV infection and the kinetics of viral replication in Kenyan HIV-infected and HIV-exposed uninfected infants. Methods: HIV-1 and CMV plasma viral loads were serially measured in 20 HIVexposed uninfected and 44 HIV-infected infants born to HIV-infected mothers. HIV-infected children were studied for the first 2 years of life, and HIV-exposed uninfected infants were studied for 1 year. Results: CMVDNAwas detected frequently during the firstmonths of life; by 3months of age,CMVDNAwasdetectedin90%ofHIV-exposeduninfectedinfantsand93%of infants whohadacquiredHIV-1inutero.CMVviral loadswerehighest inthe1–3monthsfollowing the first detection of virus and declined rapidly thereafter. CMV peak viral loads were significantlyhigher in theHIV-infectedinfantscomparedwith theHIV-exposeduninfected infants (mean3.2versus2.7 log10CMVDNAcopies/ml, respectively,P¼0.03).Thedetection of CMV DNA persisted to 7–9 months post-CMV infection in both the HIV-exposed uninfected (8/17, 47%) and HIV-infected (13/18, 72%, P¼0.2) children. Among HIVinfected children, CMV DNA was detected in three of the seven (43%) surviving infants tested between 19 and 21 months post-CMV infection. Finally, a strong correlation was found between peak CMV and HIV-1 viral loads (r¼0.40, P¼0.008). Conclusion: Acute CMV coinfection is common in HIV-infected Kenyan infants. HIV-1 infection was associated with impaired containment of CMV replication.