

ABSTRACT

In addition to direct effects on virus infectivity, antibodies mediate antibody-dependent cellular cytotoxicity (ADCC), the killing of an antibody-coated virus-infected cell by cytotoxic effector cells. Although ADCC has been suggested to protect against HIV, the relationship between HIV-specific ADCC antibodies at the time of HIV exposure and infection outcome in humans remains to be assessed. We evaluated the ADCC activity of passively acquired antibodies in infants born to HIV-infected mothers. ADCC levels were higher in uninfected than infected infants, although not significantly. Increase in ADCC antibody activity in infected infants was associated with reduced mortality risk. Infant ADCC positively correlated with the magnitude of IgG1 binding, and IgG1 levels were associated with survival in infected infants. Infant IgG3-binding antibodies were not associated with infected infant survival. These data suggest a therapeutic benefit of pre-existing HIV-specific ADCC antibodies and support a role for eliciting ADCC-mediating IgG1 in HIV vaccines.