

Abstract

The determinants of a broad neutralizing antibody (NAb) response and its effect on human immunodeficiency virus type 1 (HIV-1) disease progression are not well defined, partly because most prior studies of a broad NAb response were cross-sectional. We examined correlates of NAb response breadth among 70 HIV-infected, antiretroviral-naïve Kenyan women from a longitudinal seroincident cohort. NAb response breadth was measured 5 years after infection against five subtype A viruses and one subtype B virus. Greater NAb response breadth was associated with a higher viral load set point and greater HIV-1 env diversity early in infection. However, greater NAb response breadth was not associated with a delayed time to a CD4(+) T-cell count of <200, antiretroviral therapy, or death. Thus, a broad NAb response results from a high level of antigenic stimulation early in infection, which likely accounts for prior observations that greater NAb response breadth is associated with a higher viral load later in infection..