

Magnitude of human immunodeficiency virus (HIV) type 1-specific lymphocyte responses in breast milk from HIV-1-seropositive women.

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Abstract

Human immunodeficiency virus (HIV) type 1-specific cell-mediated immunity of breast milk may influence the likelihood of mother-to-child transmission of HIV-1 via breast-feeding. In breast-milk specimens collected during the first month postpartum from HIV-1-seropositive women in Nairobi, HIV-1 gag-specific cellular responses were detected in 17 (47%) of 36, and env-specific cellular responses were present in 20 (40%) of 50. Peripheral blood lymphocyte responses against either gag or env were detected in 35 (66%) of the 53 subjects, 18 (51%) of whom had positive gag or env responses in their breast milk. In paired analyses of blood and breast milk, the mean magnitude of responses to env or gag stimulation in breast milk was significantly higher than that in blood and remained higher in breast milk after normalization of responses according to CD8+ lymphocyte count. These results suggest that CD8+ lymphocytes present in breast milk have the capacity to recognize HIV-1-infected cells and may be selectively transported to breast milk to reduce either viral replication or transmission in breast milk.