T-HELPER CELL RESPONSES TO HIV ENVELOPE PEPTIDES IN CORD BLOOD: PROTECTION AGAINST INTRAPARTUM AND BREASTFEEDING TRANSMISSION


Purpose of the Study. Perinatal transmission of human immunodeficiency virus (HIV) from mother to infant occurs in approximately 25% of untreated pregnancies. HIV-specific cell-mediated immune responses have been observed in exposed yet uninfected individuals and it has been suggested that such responses may protect, in part, newborns from HIV infection.

Methods. Cord blood from HIV-infected women in South Africa was tested for intravenous reactivity to HIV-specific envelope peptides using a bioassay for IL2 production. Infants were followed with repeat HIV nucleic acid testing for up to 18 months of age to establish the acquisition of HIV infection.

Results. T-cell responses to envelope peptides were detected in 33 out of 86 (38%) of cord blood samples from infants of HIV-positive women and in none of 9 control samples. Of the 33 responders, 3 were shown to be infected on the day of birth, 2 were lost to follow-up, and none of the others were found to be infected with HIV on subsequent visits. In comparison, 6 of 53 unresponsive infants were infected at the time of delivery, and 8 of 47 of the others were found to have acquired HIV peripartum or postpartum through breastfeeding.

Conclusion. The presence of HIV-specific T-cell responses in cord blood is associated with a significant degree of protection against perinatal infection with HIV.
T-Helper Cell Responses to HIV Envelope Peptides in Cord Blood: Protection Against Intrapartum and Breastfeeding Transmission
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