Serological Analysis of Severe Respiratory Infections in HIV-Exposed Uninfected Infants

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ABSTRACT

OBJECTIVES

- To describe the rates of acquisition of immunity with LRTI among HIV uninfected infants.
- To compare immunogenic response of HIV uninfected infants to healthy newborns.

METHODS

Participants

-Brazilian HIV-exposed infants who enrolled in the NSID (N=161) and LALAC (N=21) protocols between 2002 and 2009 who met the inclusion criteria listed below were included.

- Infants from HIV-negative mothers
- Singleton
- Gestational age ≥36 weeks
- Birth weight ≥2500 g
- No severe infections or preterm delivery

Definitions

- Antibody titers against respiratory viral antigens (RSV, parainfluenza, rhinovirus) were measured using an enzyme-linked immunosorbent assay (ELISA).
- Antibody titers were considered positive if the ratio of absorbance optical density (OD) to control was ≥2.
- The antibody titer was reported as the reciprocal of the last serum dilution with an OD value ≥2.
- Antititers were unmatched if ≥2 times the baseline value.

RESULTS

- Maternal Antibody Titers at Delivery

- Maternal Antibody Titers against Respiratory Pathogens

- Infant Antibody Titers Against Respiratory Pathogens

- Infant Antibody Titers Against Tetanus Toxoid at 6 Months of Age

- Seroconversions to Respiratory Pathogens during the First 6 Months of Life

CONCLUSIONS

- Overall, HEU had lower antibody titers at birth than HUU against common respiratory pathogens. However, this difference did not reach statistical significance.
- The low antibody titers at birth in HEU compared with HUU were mostly the result of a lower tetanus transfer from mother to infant, since antibody titers against RSV were higher in HIV-uninfected compared with uninfected mothers.
- Immune response of mothers of LRTI-HUE had a significantly higher rate of seroconversion to influenza virus in the first 6 months of life compared to LRTI-HUE. This was due to the lower antibody response of HEU against respiratory viruses at 6 months.
- This suggests that antibody responses may be diluted in HEU compared with HIV-uninfected and needs to be further investigated.

Data were derived from infants who met the inclusion criteria listed above.

REFERENCES


RESULTS (CONTINUED)

- Maternal Antibody Titers at Delivery

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- Infant Antibody Titers Against Respiratory Pathogens

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