

Abstract

In order to eliminate infant HIV infection from mother to child, evidence based implementation strategies are needed to address the risk factors that are associated with this infection using limited resources and applicable to all stakeholders especially the parents of the infants

Objective: To assess the infant, maternal and paternal risk factors associated with HIV infection among infants below 24 months born to HIV positive mothers

Methods: An unmatched nested case control study was conducted at Mildmay Uganda, 370 HIV positive mothers with their biological infants below 24 months who had had a DNA-PCR test done in the last 6 months were enrolled in the study (cases- DNA-PCR positive infants, controls-DNAP-PCR negative infants).Data was collected using a structured questionnaire. Descriptive, bivariate and multivariate analyses were conducted on the infant, maternal and paternal factors that influence infant HIV infection.

Results: *Infant factors* that showed a significant relationship with HIV infection among infants below 24 months born to HIV positive mothers were age ($P=0.01$), gender ($P=0.09$), age at first DNA –PCR test ($P<0.001$), Infant and young child feeding option used in the first 8 weeks of life ($p <0.001$) ART status ($p<0.001$), Immunization status ($p=0.031$) and duration of receiving Nevirapine syrup of the infant ($p=0.002$). *Maternal factors* that revealed a significant relationship with HIV infection of infants below 24 months born to HIV positive mothers were baseline viral load during pregnancy ($p=0.046$), Body Mass Index ($p=0.008$), receipt of ART during pregnancy ($p<0.001$), receipt of nutrition counseling ($p=0.002$) and disclosure of HIV status to spouse of the mother during pregnancy ($p<0.001$). *Paternal factors* that revealed a significant relationship with HIV infection of infants below 24 months born to HIV positive mothers were acceptance to test for HIV ($p<0.001$), HIV status ($p<0.001$), disclosure of HIV status to spouse ($p<0.001$) and receipt of ART ($p<0.001$).

Multivariate analysis showed a significant relationship with HIV infection of infants below 24 months born to HIV positive mothers were mixed feeding the infant (OR: 4.971, 95%CI: 1.71 - 14.48, p=0.003), receipt of ART (NVP) of the infant (OR: 0.0062, 95%CI:0.002 - 0.019, p<0.001), mother not disclosing of HIV status to spouse (OR:2.736, 95%CI:1.074 – 6.971, p=0.035) and Father not disclosing of HIV status to spouse (OR:4.38, 95%CI:1.764 - 11.235, p=0.002).

Conclusion: The infant factors that were found to be associated with HIV infection of infants 24 months and below born to HIV positive mothers were mixed feeding: The infants who are mixed fed are at a high risk of acquiring HIV from their HIV positive mothers than those who are not and receipt of Nevirapine (ART) syrup of the infant: infants who receive nevirapine syrup are less likely to acquire HIV infection than those who do not. Maternal factors found to be associated with infant HIV infection was disclosure: infants whose mothers did not disclose their HIV status to their spouses were at a higher risk of HIV infection than those whose mothers had disclosed their HIV status to their spouses. Paternal factors found to be associated with infant HIV infection was disclosure: infants whose fathers did not disclose their HIV status to their spouses were at a higher risk of HIV infection than those whose fathers had disclosed their HIV status to their spouses.

Mixed feeding should be discouraged for all HIV positive mothers because of its associated risk of infant HIV infection. Mothers should be encouraged to exclusively breastfeed their infants. There is need to promote HIV testing and disclosure of spouses especially during pregnancy.