ABSTRACT

Background

Despite proven efficacy of the prevention mother-to-child transmission of HIV strategy, its adoption in Africa has remained slow. In Kenya, its effectiveness remain unknown. The aim of this study was to assess the effectiveness of a prevention of mother-to-child transmission program in Kenya.

Methods

This retrospective cross-sectional study analyzed 2,642 records of HIV-exposed infants who had a deoxyribonucleic acid polymerase chain reaction test done. The main outcome measure was HIV vertical transmission rates, stratified by i) infant age at diagnosis, ii) maternal prophylaxis and iii) infant mode of feeding. The characteristics of the infants who tested positive were compared to those who tested negative using Chi-square and Wilcoxon-Ranksum test. Bivariate and multivariate logistic regression analyses were conducted to establish associations and explore relationship between covariates and HIV transmission.

Results

One thousand and one hundred nineteen (42.4%) infants had dried blood spot samples taken for HIV deoxyribonucleic acid polymerase chain reaction test within the first 6 weeks of age. Median age at diagnosis for HIV-positive infants was 4 months (IQR 1.5–9) while that of HIV-negative infants was 2 months (IQR 1.5–6). In total, 1,906 (72.1%) infants received prophylactic antiretrovirals. Infants whose mothers received prophylaxis had significantly lower vertical transmission rate (6.7%) compared to those whose mothers did not receive prophylaxis (24.0%), (OR 0.23, $p < 0.001$). When adjusted for feeding option and infant's age at diagnosis, the odds of transmission among women who received prophylaxis was 76% lower than that of women who did not receive any prophylaxis (OR 0.2 $p < 0.001$). 1,368 infants less than 6 months of age, 67.3%) were exclusively breastfed, 214 (10.5%) were replacement fed, and 164 (8.1%) mixed fed. Mixed feeding was associated with increased risk of HIV transmission (OR 2.7, $p = 0.007$). 67% of children older than 6 months were breastfed and had higher HIV transmission rate compared to those who were not breastfed (OR 2.3, $p = 0.006$).

Conclusions

The recorded rate of 9.3%, suggest the interventions implemented at the study sites were moderately effective, more so when provided early. Program performance will improve should the 12.8% of pregnant women who did not receive antiretroviral prophylaxis are reached.