

Infant feeding practices of HIV-positive mothers in a rural Ugandan hospital

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Abstract

Aims The aim of this audit was to evaluate the feeding practices of infants born to HIV-positive mothers in a rural Ugandan hospital. The audit compared these practices to the WHO Infant Feeding Guidelines, published in 2016.

Methods This single-centre retrospective observational study used data from the HIV-exposed infant register in Villa Maria Hospital, Uganda. Sixty-one HIV-exposed babies were included in the audit.

Results The WHO guidelines recommend exclusive breastfeeding for the first 6 months of life for HIV-exposed individuals. At 6 months, only 36% ($n=22$) of mothers in the study sample returned for follow-up. Of these, 77% ($n=17$) were exclusively breastfeeding.

Conclusions The results suggest that, in the mothers who returned for follow-up, most infants up to 12 months of age were being fed according to the recommendations set out by WHO. A limitation of this study was incomplete data and inconsistent follow-up. Future considerations for Villa Maria Hospital may be to consider the WHO recommendation of continued breastfeeding past 12 months and ensuring that data are complete for every infant registered.

Introduction

Uganda is a landlocked country located in East Africa with an estimated population of 34.6 million.¹ The prevalence of HIV in the total population is estimated to be 6.5%.² HIV can be transmitted from mother to child during pregnancy or labour, or through breastfeeding.³ This audit focused on the mother to child transmission (MTCT) during breastfeeding, within the context of a rural Ugandan hospital, Villa Maria. Villa Maria is situated within the town of Masaka, south of Uganda's capital, Kampala.

This is an important topic because it is estimated that, of all the HIV-positive infants in Uganda, 95% acquired the infection through MTCT.⁴ Furthermore, MTCT is preventable and there are evidence-based interventions to reduce the number of infants becoming infected.^{5,6}

The WHO has published specific infant feeding guidelines for HIV-positive women living in resource-limited settings. The most recent guideline recommends exclusive breastfeeding (EBF) for the first 6 months of life and continued breastfeeding until 24 months.⁵ The Integrated National Guidelines for Uganda, published in 2012, recommend EBF for 6 months, and complementary feeding from 6 to 12 months.⁷

Methods

This single-centre retrospective observational study used data from the HIV-exposed infant register in Villa Maria Hospital. It comprised

all babies born between 1st March 2017 and 30th June 2017, which included 61 HIV-exposed babies. This allowed for data to be collected at the 12 month follow-up. Data was collected on maternal and infant antiretroviral treatment (ARV) status, infant HIV status at 6 weeks, and infant feeding status at each follow-up appointment. Data were anonymised and collected onto an Excel spreadsheet. Basic statistical methods were used to analyse the results.

Results

Between 1st March 2017 and 30th June 2017, 61 infants were born to HIV-positive mothers; 41% ($n=25$) were male and 59% ($n=36$) were female. Seventy-five per cent ($n=46$) of the mothers in the sample were on antenatal ARVs.

Infant feeding At the first PCR test, which usually takes place at 6 weeks of age, 72% ($n=44$) of the total sample returned for follow-up. In comparison, at 6 months, only 36% ($n=22$) of mothers in the study sample returned for follow-up. Across each time point shown in **Figure 1**, follow-up was inconsistent, with varying numbers of mothers returning with their infants for follow-up. Therefore, at each time point, the study population varied in the number of infants and thus may not be directly comparable. Of the total sample of infants, 82% ($n=50$) tested negative for HIV, 5% ($n=3$) tested positive and 13% ($n=8$) had an unknown test result.

The WHO guidelines recommend EBF for the first 6 months of life for HIV-exposed individuals.⁵ Although only 36% of mothers returned for follow-up at 6 months, 77% of those who did return for follow-up were feeding by EBF at 6 months; the remaining were complementary feeding ($n=4$) or mixed feeding ($n=1$).

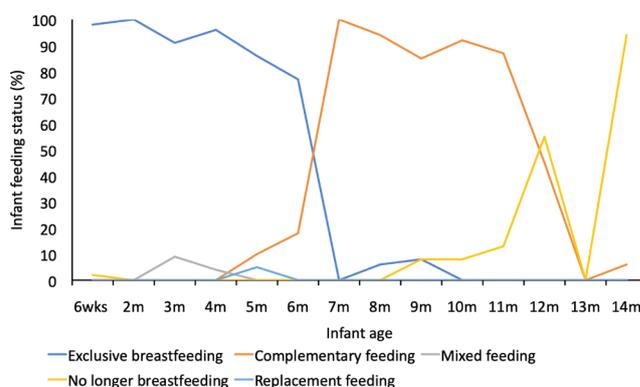


Figure 1: Infant feeding practices in HIV-positive mothers. This figure indicates that most mothers complementary feed from 6 months and continue until 12 months of age. This is aligned with the WHO and the Ugandan guidelines.^{5,7} The rates of women no longer breastfeeding increased from 8 months to 14 months. At 14 months, 95% ($n=17$) of mothers were no longer breastfeeding. There were no data after 14 months and therefore the WHO recommendation to continue breastfeeding until 24 months could not be assessed. m, months; wks, weeks.

Discussion

The following discussion will compare the infant feeding practices of HIV-positive mothers to the standard set out by the WHO guidelines.⁵ It will use the local data collected in Villa Maria Hospital and utilise data from other studies for comparison.

Exclusive breastfeeding for 6 months Both the WHO and the Ugandan guidelines recommend 6 months of EBF for women who are HIV-positive.^{5,7} Breastfeeding in the context of HIV demonstrates a difficult balance of risks and benefits. However, it is suggested that in low-income countries, such as Uganda, the benefits of breastfeeding outweigh the risk associated with HIV transmission.^{4,8} In a study of 118 HIV-exposed infants in rural Uganda, there was a 6-fold increase in risk of death in infants when they were breastfed for shorter than 6 months.⁴ Breastfeeding is protective against gastroenteritis, one of the major causes of infant mortality in low-income settings.^{4,8}

In this study, at 6 months, 77% ($n=17$) of mothers were still feeding by EBF. Other studies have found a wide variation in the percentage of mothers feeding by EBF at 6 months.^{4,9,10} A study by Marquez et al reported that 84% of HIV-exposed uninfected infants in rural Uganda were fed by EBF up to 6 months.¹⁰ However, other studies have found that only 25% of HIV-exposed infants in rural Uganda were fed by EBF at 6 months.⁴

This large variation in the studies between the percentage of infants being fed by EBF at 6 months may be explained by the differences in the populations, as urban populations may have more access to safe formula feeding. Furthermore, the definition of EBF may not be comparable between these studies, and the sample sizes are considerably different. However, it is encouraging to see that our study had one of the highest percentages of EBF at 6 months.

Barriers to EBF Although a large proportion of the infants in the study sample were fed by EBF at 6 months (77%), there may also be some significant barriers to EBF in this population of HIV-positive mothers in Uganda. It has been suggested by Muhumuza et al that in-adequate nutrition and access to healthy food is one reason why mothers may not be able to breastfeed exclusively.¹¹ Furthermore, these authors comment upon inadequate food as a cause of women not taking ARV, as the side effects are exacerbated when taken on an empty stomach.¹¹

In recognition of this, the HIV support group in Villa Maria Hospital, which takes place every Wednesday morning, provides porridge for the mothers and their babies. The clinic provides health education talks, including nutritional advice and cooking workshops, an immunisation clinic, viral-load testing, drug dispensing, and basic monitoring of mothers and babies. This intervention may provide an explanation for the high percentage of mothers in this study sample feeding by EBF at 6 months.

Limitations A significant limitation of this study was incomplete data. Infants were followed up at inconsistent time periods depending on when mothers returned to the clinic. The mean number of follow-ups each infant received was 4 (range: 0–9). These follow-ups occurred between 6 weeks and 14 months. This inconsistent follow-up resulted in different study populations at each time point, which may not have been comparable. For health systems to improve, good quality robust data must be collected to measure the effect of any intervention.¹² Therefore, ensuring that each infant on the HIV-exposed register has a completed dataset will be an important future consideration for Villa Maria Hospital.

Conclusion This retrospective observational study of 61 HIV-exposed infants in Villa Maria Hospital aimed to audit the infant feeding practices against the WHO guidelines.⁵ Data were limited by inconsistent follow-up and an incomplete dataset. However, the results suggest that, of those returning for follow-up, most infants up to 12 months of age are being fed according to the recommendations

set out by WHO.

Reassuringly, a high percentage of mothers and infants were on ARV medication and the rates of transmission of HIV in this sample of infants was 5%. The observations made from this study reflect the success of the HIV centre in Villa Maria Hospital and its targeted programme to reduce MTCT of HIV.

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Contribution statement Hollie Garbett is responsible for the integrity of the work as a whole.

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