Exclusive breastfeeding reduces risk of mortality in infants up to 6 mo of age born to HIV-positive Tanzanian women.

Natchu UCM, Liu E, Duggan C, Msamanga G, Peterson K, Aboud S, Spiegelman D, Fawzi WW. Am J Clin Nutr 2012; 96: 1071–8.
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Introduction

Because of the well documented advantages of exclusive breastfeeding (EBF) for reducing the incidence of diarrhea and other common childhood infections and increasing child survival, the World Health Organization (WHO) recommends EBF for the first 6 months of life. In 2010, WHO prepared new guidelines for feeding infants of HIV-positive mothers, considering both the known benefits of breastfeeding and the possibility of increased mother-to-child transmission of HIV through breast milk. In particular, WHO now recommends one of the following 3 choices for feeding infants of HIV-positive mothers: 1) EBF for the first 6 months of life, introduction of appropriate complementary foods thereafter, and continued breastfeeding through 12 months; 2) formula feeding, if deemed to be acceptable, feasible, affordable, safe and sustainable in the local context; and 3) use of heat-treated, expressed breast milk in specific circumstances [1]. In addition, mothers known to be HIV-infected should be provided with antiretroviral therapy (ART) for as long as they are breastfeeding, so as to reduce HIV transmission through breast milk [1].

In poor populations of low-income countries, it is extremely difficult for caregivers to provide breast milk substitutes safely because of limited access to clean water; moreover, culturally determined child feeding norms may stigmatize non-breastfeeding women. At the same time, EBF is currently carried out only among a fairly small proportion of breast feeding mothers, despite extensive programmatic efforts in many countries to promote this practice. Thus, most women end up practicing a mixture of non-exclusive breastfeeding, along with formula and animal-milk feeding, thereby exposing the child to unnecessary health risks. This edition of Nutrition News for Africa summarizes the findings of a secondary analysis of data from a longitudinal study of Tanzanian infants born to HIV-infected mothers who were enrolled in a multi-vitamin (MV) supplementation trial. The purpose of these current analyses was to examine whether the duration of EBF was associated with child mortality or acquisition of HIV infection.

Methods

HIV-infected pregnant women residing in Dar es Salaam, Tanzania were enrolled in the supplementation trial beginning at 12-27 weeks of gestation. The original study aimed to examine the effects of oral MV supplementation on progression of the women's HIV-disease, transmission of HIV-1 to the child, and

morbidity and mortality outcomes in both the women and children. During monthly follow up visits, the women were asked about infant-feeding practices during the previous month, including current breastfeeding status and frequency of breast feeding, introduction of other foods or liquids, age of introduction of cow milk, formula, fruit juice or solids, and age of weaning. EBF was defined as feeding the child only breast milk, without introducing any other liquid, milk or solid foods, except for oral medications. The duration of EBF was defined as the number of months from birth to the time when the mother first reported having given the child any foods or liquids other than medications in addition to breast milk. Children were eligible for this analysis only if they were HIV negative at birth.

Results and conclusions

From a total of 939 singleton, live births to HIV-infected women enrolled in the supplementation study, children were excluded from the present analyses if the duration of breastfeeding could not be determined (n=85), the first follow up visit occurred after 2 years of age (n=156), the time sequence between EBF and death could not be established (n=8), the child was HIV positive at birth or the first visit (n=99), or if the child's HIV status was unknown (n=6). Information was available from 585 eligible children to examine the association between EBF and child mortality.

Only 30% of the children were exclusively breastfed for at least 3 months. A total of 113 children (17%) died within the first year of life, and 142 (20%) died during the first 5 years. The risk of early infant mortality (0-5 months) was inversely related to the duration of EBF (adjusted relative risk (RR) 0.51; 95% confidence interval (CI): 0.28, 0.93), after controlling for maternal social support, time-varying body mass index (BMI), and CD4 counts and child sex, delivery type, time-varying HIV status, and mid-upper arm circumference (MUAC). In the multivariate analyses, the duration of EBF was not associated with a significant reduction in risk of mortality between 6-11 months, 12-23 months or 24-60 months of age. EBF was not associated with HIV infection in any age interval from 0-60 months. However, each month of greater duration of EBF was associated with a 32% reduction in HIV infection or death (RR: 0.68; 95% CI: 0.50, 0.93) during the period from 12 to 23 months of age.

Few children were exclusively formula fed, so EBF could not be compared with exclusive formula feeding. ART was not available in Tanzania during the time of this trial, and none of the participants received any ART. The increasing availability of ART for treating HIV infections and AIDS should further reduce the risk of mother-to-child transmission through breastfeeding and make EBF safer for longer in HIV-infected mothers, as is now recommended by WHO.

Program and Policy Implications

A longer duration of EBF by HIV-positive mothers was associated with reduced child mortality in the first

6 months of life without increasing the risk of mother-to-child transmission of HIV infection. Thus, EBF during this period is the best option for women who cannot sustain exclusive formula feeding. These results provide additional evidence in support of current WHO breastfeeding recommendations for all women, regardless of their HIV status. Now that ART is more widely available, further studies of the benefits and risks of continued breast feeding after six months are needed among HIV-positive mothers who are receiving ART.

References

1. World Health Organization, UNAIDS, UNFPA, UNICEF. Guidelines on HIV and infant feeding. Principles and recommendations for infant feeding in the context of HIV and a summary of evidence. Geneva, Switzerland: WHO, 2010. http://www.who.int/maternal_child_adolescent/documents/9789241599535/en/.

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