

Withholding breast milk for HIV exposed infants in sub-Saharan Africa: benefit or harm?

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Abstract

Feeding options for HIV exposed infants has remained topical and controversial in most settings of sub-Saharan Africa. This commentary, expresses the author's opinions on this topical issue for and against breastfeeding or infant formula, with supporting evidence drawn from relevant literature on researches conducted in settings of sub-Saharan Africa. At the moment, it seems sensible to recommend that health care workers and policy makers should explore the options of making breastfeeding safer rather than withholding it for sub-Saharan African HIV exposed infants. It is hoped that when Highly Active Antiretroviral Therapy (HAART) becomes universally accessible and available to HIV infected women in sub-Saharan Africa, breast milk HIV transmission will be a rare event and the health benefits of breastfeeding for the infant and mother will be maximized.

Key words: Infant feeding, HIV, benefits, sub-Saharan Africa
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Introduction

Despite the many benefits of breastfeeding as the best nutritional source for the infant and the associated health benefits to the mother, breastfeeding remains a potential source for postnatal transmission of HIV from mother to child. The WHO Global Databank on Breastfeeding and Complementary Feeding 2006^{1,2} showed that nearly all infants in developing countries are initially breastfed from the first week of life, and most children continue to be breastfed until at least six months of age, frequently into the second year of life³. Breastfeeding is therefore the traditional and most culturally acceptable feeding option for infants in sub-Saharan Africa.

Infant formula is an alternative feeding strategy that 'eliminates' the risk of postnatal HIV transmission but must be practiced in settings where it is culturally acceptable, feasible, affordable, sustainable and safe (AFASS). This recommendation has worked well in developed countries but remains unachievable in resource-constrained settings of sub-

Saharan Africa (SSA), faced with cultural barriers to acceptability, economic challenges of adequate supplies of formula, and limited access to clean potable water. The question therefore remains, how safe is the recommendation to formula feed rather than to breastfeed for the HIV exposed infant in sub-Saharan Africa? Evidence drawn from randomized clinical trials on feeding strategies conducted in various settings has contributed to the understanding of safety and efficacy issues and has implications for policy recommendations on feeding strategies in SSA. This commentary examines the evidence supporting the safety of breastfeeding and the potential harm of infant formula for the HIV exposed infant in SSA.

There have been concerns that in SSA where infectious diseases are the most prevalent cause of infant morbidity and mortality, avoidance of breastfeeding would be accompanied by an increase in mortality that might offset any gains achieved by decreasing HIV-1 transmission. A randomized controlled trial in Kenya⁴ found no significant difference in two-year mortality rates between infants randomly assigned to be formula fed or to be breastfed. Because HIV-1 infections occurred with higher frequency in the breastfeeding group, the authors considered the possibility that excess formula associated deaths might be masked by excess HIV-1 related deaths in the breastfeeding group⁴. However, adjusted analyses stratified by HIV-1 status showed no significant difference in 2-year mortality

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rates between the two trial intervention groups. Using HIV-1 free survival (the percentage of children who remained alive and HIV-1 uninfected) as a measure of combined risks of feeding modality and HIV-1 infection, HIV-1 free survival at two years was significantly higher in the formula group. The morbidity patterns were similar between the two trial intervention groups. Can it be concluded from this study that infant formula feeding is safer for the sub-Saharan HIV exposed infant? The authors⁴ acknowledged the limitations of generalizing the results of the trial by suggesting that the trial setting was the 'best-case scenario'. All participating women in the trial had access to potable water, extensive health education regarding safe preparation of formula, a reliable supply of formula, and access to medical care for their infants. Thus the application of these findings should be viewed with caution considering the real world experience of most individual families in SSA. Formula feeding seems a safer option only if maternal education, clean water, reliable supply of formula and access to healthcare are available. The Millennium Development Goals (MDGs) 2008 report⁵ indicated that most settings in sub-Saharan Africa still lack basic amenities such as access to clean water and also have poor sanitary conditions, making formula feeding potentially more harmful to the infant in such regions of the world.

A strategy to make breastfeeding safer includes use of antiretroviral prophylaxis to the mother and infant or early cessations of breastfeeding to reduce prolonged exposure of the infant to the risk of postnatal HIV transmission. Studies have documented a strong correlation between HIV RNA viral load in maternal plasma and in breast milk as an independent risk factor associated with increased HIV transmission from mother-to-child⁶. The Mashi trial⁷ compared a formula feeding strategy with a strategy in which breastfed infants were given an intervention aimed at preventing infection from exposure to HIV in breast milk. The results of the trial showed that infants in the formula-fed group experienced lower rates of HIV infection and increased rates of early mortality and adverse events from infectious etiologies than those in the breastfed plus zidovudine group, such that HIV-1 free survival at 18 months was similar in the two groups. These trial results highlight the need for a careful assessment of the local management of childhood illnesses (mostly diarrheal and respiratory infections) before implementation of a formula feeding strategy for

the prevention of postnatal HIV transmission in developing countries⁷. An extension of the Mashi trial⁸ showed that use of highly active antiretroviral therapy (HAART) to suppress maternal viral load in plasma and breast milk significantly reduces risk of early and late mother-to-child HIV transmission. When HAART becomes more accessible and available to HIV infected women in SSA, breastfeeding seems to hold the promise of being a safer feeding strategy for HIV exposed infants in SSA.

The option of early, abrupt cessation of breastfeeding does not seem a safe and effective strategy for sub-Saharan African infants. The Zambian trial⁹ showed that early, abrupt cessation of breastfeeding by HIV infected women in a low-resource setting does not improve the rate of HIV-free survival among children born to HIV-infected mothers and is harmful to HIV infected infants. The trial compared the benefit in HIV-free survival to 24 months among the infants of HIV-infected mothers who were encouraged to stop breastfeeding abruptly at four months as compared with the infants whose mothers followed standard practice and continued breastfeeding for a median of 16 months. From a policy stand point, it seems reasonable to recommend breastfeeding as a feeding strategy in SSA. It is culturally acceptable, culturally feasible, naturally available and 'affordable' at no cost, can be sustained in all cultures in the region, is comparatively 'safer' than formula, and does not require special education for its practice. However, the socioeconomic realities in SSA cannot be generalized to all women and those who can practice exclusive formula feeding with the AFASS criteria could do so without undue harm to the HIV-exposed infants in this setting. Therefore depending on the peculiar family situation, the option for breastfeeding along with ARVs with a very slim chance for MTCT or formula feeding with its attendant risks of morbidity and mortality where the AFASS criteria are unmet, should be clearly emphasized during infant feeding counseling in our Prevention of Mother-to-child transmission of HIV programs in sub-Saharan African settings.

Additionally, Government and policy makers in sub-Saharan African countries may lack the economic capacity to adopt, implement and sustain effective health interventions. This could limit the generalizability and/or implementation of the evidence supporting the policy of breastfeeding with HAART as a beneficial feeding strategy for the sub-

Saharan African HIV exposed infant. However it is equally important for readers and policy makers in SSA to understand the implications of withholding health care interventions that are proven effective. Perhaps, a carefully conducted cost-effectiveness analysis of available options will better inform policy decisions for this region. However, at this point, it seems sensible to recommend that health care workers and policy makers should explore the options of making breastfeeding safer rather than withholding it for sub-Saharan African HIV exposed infants.

Conclusion

It is hoped that when HAART becomes universally accessible and available to HIV infected women in sub-Saharan Africa, breast milk HIV transmission will be a rare event and the health benefits of breastfeeding for the infant and mother will be maximized.

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