

Acceptability and feasibility of WHO recommendations for feeding infants born to HIV-infected mothers during the first year post-partum in Burkina Faso.

Introduction

More than two million children in sub-Saharan Africa are infected with the human immunodeficiency virus (HIV), and approximately half of these infections are caused by mother-to-child transmission of HIV through breast milk. In 2006, the World Health Organization (WHO) recommended that HIV-infected women should avoid breastfeeding when replacement feeding is acceptable, feasible, affordable, sustainable, and safe (AFASS). However, replacement feeding rarely meets these AFASS criteria in lower income countries, and non-exclusive breast feeding under poor environmental conditions increases the risk of infant morbidity and mortality from other infections. Thus, when AFASS replacement feeding is not possible, WHO recommends that HIV-infected women should breast feed exclusively for the first 6 months. Although WHO previously recommended abrupt cessation of breastfeeding at six months, revised guidelines issued in 2010 now encourage continued breastfeeding along with complementary foods during the next six months; and WHO recommends that HIV-infected women should receive anti-retroviral (ARV) therapy as long as they are breast feeding (1).

In Burkina Faso, most mothers practice mixed feeding starting as early as the first few days post-partum, regardless of their HIV status. The specific reasons for the current infant feeding choices are not known, and it is uncertain whether HIV-infected women would be willing or able to adopt the WHO recommendations. To explore these issues, investigators in Burkina Faso conducted a series of studies to describe obstacles to exclusive breast feeding among HIV-infected women and to assess the effects of providing processed complementary foods to non-breastfeeding infants older than six months. This month's NNA focuses on selected results of these studies, as presented in three recently prepared manuscripts (2-4). In the first paper, the researchers reported qualitative information on HIV-infected mothers' opinions regarding the WHO infant-feeding recommendations issued in 2006 (2). In the second article, the researchers described the acceptability and feasibility of a food support program among HIV-infected women (3); and then, in a third paper, they reported quantitatively on the food consumption and nutrient intake of non-breastfed infants of HIV-infected women who were provided with a processed, fortified infant food (4).

Methods

The studies were all conducted in Bobo-Dioulasso, the second largest city in Burkina Faso. At the time the project was being implemented, the WHO feeding recommendations included abrupt termination of breast feeding at six months and replacement feeding with safe, nutritionally adequate infant foods. The first activities in this series of research projects consisted of multiple separate focus groups carried out among 19 breastfeeding and 17 non-breast feeding, HIV-infected mothers. Counselor-led discussions focused on the mothers' decision-making concerning infant feeding, the difficulties they encountered, and their strategies for coping with these problems.

The second study was implemented to assess the feasibility and acceptability of providing a cereal-based "infant fortified mix" (IFM) for HIV-infected, non-breastfeeding mothers to feed to their infants beginning at six months post-partum. This study was completed in a sample of 68 mother-infant pairs by observing IFM preparation and feeding in the women's homes and by administering a semi-structured questionnaire. The IFM was based on locally produced and commonly consumed food ingredients. The product was designed to allow for safe and easy handling and to meet the energy and nutrient requirements of 6-12 month-old infants, when provided along with 450 ml of whole powdered milk or milk formula per day. Mothers were advised to give their infants the allotted portion of cooked IFM, milk and home-available nutritious snacks, and to introduce family foods progressively to their infants.

The third component of the study was completed to measure the food consumption and adequacy of nutrient intakes among the same 68 infants included in the aforementioned observations. A single, one-day weighed food record and a subsequent 24-h dietary recall were performed to assess the infants' intakes on two consecutive days. Food intakes were converted to energy and nutrient intakes based on local food composition tables, and they were compared with the infants' theoretical requirements.

Results and Conclusions

The first study found that the mothers faced several dilemmas regarding their infant feeding choices. On the one hand, the mothers were concerned that breast feeding would place their infants at risk of HIV transmission through breast milk. On the other hand, the mothers experienced strong social pressure to breast feed, and they feared that they would be stigmatized by revealing their HIV status through the practice of replacement milk feeding. Mothers who chose replacement feeding were more likely to have a strong personality, supportive partner, and better socioeconomic conditions than breastfeeding mothers. Mothers who opted to breastfeed also faced difficulties in maintaining exclusive breastfeeding because of strongly held local beliefs that additional liquids and foods are needed by the infant. The latter issue is not unique to HIV-infected women, suggesting that exclusive breastfeeding should be promoted as the best feeding option for all young infants, regardless of their mothers' HIV status, so as to change current local beliefs and practices.

The second study found that mothers who stopped breastfeeding when their infants attained six months of age were pleased to participate in the food support program. Most mothers were able to obtain milk powder or infant formula donated by other support programs, which they provided to their infants in addition to the IFM provided by the research project. Feeding practices were generally satisfactory, although two main obstacles to programmatic success were identified. Firstly, one-third of the mothers reported that they shared the IFM with other family members, so the target infants would not have received the full amount of the allotted ration. Secondly, one-third of the infants were not consuming the IFM at the time of the home observations, either because they were currently ill or because they rejected the food.

The third set of analyses indicated that the infants' meal patterns generally met or exceeded the study recommendations. In particular, the infants consumed an average of 7 feedings/day (meals and snacks), and all infants were given at least 4 feeding opportunities. The mean energy density of all foods was ~ 0.8 kcal/g, which is considered adequate in view of the number of feedings that were provided. However, the amounts consumed at each meal were less than half the infants' theoretical gastric

capacity, so the total amounts consumed were less than recommended. The median energy intake was slightly lower than recommended among infants 6-8 months old, but adequate among infants 9-11 months old. The four main food items in the infants' diets were milk, IFM, traditional thin porridge, and family/solid foods, with milk (mean 33-47% of energy intake, depending on age group) and IFM (mean 25-30% of energy, depending on age group) being the primary and secondary energy contributors to the diet. Infants with high or fair compliance with the study's feeding recommendations had greater energy intakes and higher mean WAZ and WHZ after 12 months of age than those with poor compliance. The authors pointed out that despite the provision of free IFM, many mothers either did not feed IFM to their infants or fed it in smaller amounts than recommended. Nevertheless, the infants in this study received more total energy from the IFM than from the traditional gruel because the energy density of the IFM was considerably greater. Intakes of total protein and lipid were sufficient in relation to recommendations for this age range.

Program and Policy Implications

This set of studies demonstrates the importance of promoting appropriate early breastfeeding practices (timely initiation within an hour of birth and exclusive breastfeeding for 6 months) in the whole population, not just among infants of HIV-infected mothers. This programmatic approach would have the dual advantages of encouraging optimal infant feeding practices, while avoiding the possibility of stigmatizing the HIV-infected mothers. The dietary observations confirm that the traditional gruel has very poor energy density, and the studies highlight the advantage of providing an energy-dense, processed complementary food. However, the feasibility of providing processed foods to all infants of HIV-infected mothers, let alone supplying such a product to all children in this age range, is uncertain because of cost considerations. Thus, other approaches, such as enhanced home-available foods and appropriate micronutrient supplements also should be considered. Moreover, even when the processed infant food product was provided free of charge in the current project, not all mothers offered the food in adequate amounts, and not all infants consumed it. This may have been due to inadequate infant care practices or poor infant appetite, possibly secondary to infections. The reasons for non-compliance with the feeding recommendations need to be further explored.

NNA Editors' Comments*

This set of studies provides useful and greatly needed qualitative and quantitative information regarding the feasibility of implementing the WHO infant-feeding recommendations in the context of HIV infections. The study further illustrates the challenges in ensuring appropriate breast feeding and complementary feeding practices for all infants, not just those of HIV-infected mothers. Because the revised (2010) WHO recommendations for infant feeding in the context of HIV are generally the same for infants of HIV-infected and non-HIV-infected mothers during the first year of life, behavior change/communication interventions can be simplified to address both sets of infants with similar messages.

*These comments have been added by the editorial team and are not part of the cited publication.

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