

Breastfeeding still a life-saving formula

By Anna Coutsooudis and Judith King – republished with permission from ChildrenFIRST Journal, April/May 2002

Recent studies indicate that exclusive breastfeeding causes a notable reduction in HIV rates of mother-to-child-transmission, and that it bears more benefits than formula feeding.

Vehement debate surrounds the question of whether women in developing countries should choose to formula-feed or breastfeed their infants. While formula feeding may eliminate HIV transmission, for women living in resource-poor communities it does incur a higher risk of death from disease than exists in breastfed infants. Prolonged breastfeeding entails a higher risk of HIV transmission, but markedly improves child health and growth.

The dilemma for Southern African mothers and policymakers in terms of this delicate balance of benefits and risks can now be viewed in the light of new data on mother-to-child transmission (MTCT) - findings that shed more light on the way forward for child survival in the wake of the HIV/AIDS epidemic.

Statistical knowledge (UNAIDS 2000) confirms that the global burden of HIV lies in sub-Saharan Africa, a region where the major cause of infant deaths is malnutrition and infectious diseases. UNICEF (1997) estimates that, in similar populations, 1,5 million non-HIV-related deaths per year can be prevented globally through breastfeeding. The question is whether a lower risk of MTCT through replacement feeding, estimated to be about 200 000 infant infections per year by WHO/UNAIDS/UNICEF (1998), warrants the risk of undermining the life-saving cultural practice of breastfeeding in resource-poor countries.

NEW RESEARCH ON BREASTFEEDING

Recent studies using the polymerase chain reaction (PRC) test to detect early HIV infection in infants provide more clarity on the risk of MTCT through breastfeeding. It has now been well established that breastfeeding over a period of two years (with no special interventions to make breastfeeding safer) will result in about 15 % new HIV infections (Nduati *et al*, 2000; Coovadia and Coutsooudis, 2001).

Of an original group of 100 children born to HIV-infected mothers who breastfeed their infants for two years, 20, i.e. 20 %, will be born infected, and over two years, another 15 will be infected through breastfeeding, showing that the risk is cumulative. Mothers now need to be informed that breastfeeding transmission is not an isolated or single danger that occurs the minute one starts breastfeeding, but rather that the risk of HIV transmission

increases over time. Shorter periods of breastfeeding carry a smaller risk of transmission.

The transmission rate over six months, (the period during which breastfeeding offers the child the highest benefit), has been reported by Coovadia and Coutsooudis (2001) to carry a 5 % risk. There is also some preliminary evidence that this 5 % risk of transmission in the first six months can be reduced even further, if exclusive breastfeeding is practised. Exclusive breastfeeding, as defined by the World Health Organisation (WHO), refers to the child receiving only breastmilk, with no water or other fluids, milks or solids (the only exceptions being vitamin drops or sterile medicines).

A research study conducted in Durban examined the effect of different infant feeding practices on the risk of infants becoming HIV-infected (Coutsooudis et al. 2001). In this study involving 551 HIV-infected pregnant women, mothers were given standard counselling on the risks and benefits of breastfeeding and formula feeding. Depending on their individual situations, they chose either to formula-feed or to breastfeed their babies. Those women who elected to breastfeed were counselled and encouraged to practise exclusive breastfeeding for at least three months, and preferably up to six months. At six months, the 157 infants who were formula-fed and the 118 who had received three or more months of exclusive breastfeeding had a similar rate of transmission of 19,4 % respectively, i.e. there was no added risk of transmission demonstrated. In the group of 276 who received mixed breastfeeding, a higher risk of transmission (26,1 %) was reflected.

Clearly, exclusive breastfeeding up to three months reduces the risk of MTCT. This has important implications for public health policy. New studies specifically designed to test this hypothesis on exclusive breastfeeding are planned at a number of sites in Africa (South Africa, Zambia, Cote d'Ivoire). It should be noted that because of its benefits, where women (whether HIV-positive or not) choose to breastfeed, the recommendation of the United Nations agencies has always been that breastfeeding should be exclusive (as opposed to mixed breastfeeding) in order to improve child health and growth.

ANTI-RETROVIRAL TREATMENT AND BREASTFEEDING

There is some confusion being fuelled by the linking of the call for provision of affordable antiretroviral drugs to HIV-positive pregnant women with the provision of milk formula to prevent HIV transmission through breastfeeding (Jha *et al*, 2001). Treatment with antiretroviral drugs is assumed to be effective only if it is combined with avoidance of breastfeeding, but a Nevirapine trial undertaken among breastfeeding women in Uganda (Owor *et al*, 2000) has shown that the rate of new infections due to breastfeeding in the first year was similar, whether mothers had received Nevirapine or not (3.9% vs. 4,1 %). Therefore, health care providers should not regard a

mother's willingness to formula-feed as a factor that should influence her access to antiretroviral drug treatment.

BENEFITS OF BREASTFEEDING

The benefits of breastfeeding for both infants and mothers have been well documented (Lawrence, 1994; Nicoll *et al*, 2000). For the mother, the most important benefits are the reduction in breast and ovarian cancer, as well as the stimulation of high prolactin hormone levels, which inhibit ovulation and therefore support birth control. For child survival in developed countries, breastfeeding reduces disease, and in resource-poor countries, breastfeeding lowers the risk of illness and death.

Less well-known are the benefits of breastfeeding for the HIV-infected child. Without any interventions, about 20% of infants will be born HIV-infected before any feeding begins, with about 7% of transmissions occurring in the womb and about 13% during the delivery. In developing countries, it is very likely that treatment with Nevirapine will reduce transmission to about 12%.

These infected infants will do better on breastmilk because of its immune-building properties. In an observational study conducted on 137 children in Los Angeles, USA, (Frederick *et al*, 1997), about half of whom were breastfed and the other half formula-fed, those who were breastfed had a later onset of AIDS, lower rates of pneumonia infection and less chronic diarrhoea.

THE RISKS OF FORMULA FEEDING

The risks of formula feeding were recently re-examined by the WHO in a meta-analysis of studies conducted in developing countries with populations of unknown HIV status. The results suggest that, if infants in the first few months of life receive replacement feeding instead of breastfeeding, they are six times more likely to die of diseases such as diarrhoea and pneumonia.

In countries like South Africa, where about 1% of breastfed children normally die of diarrhoea and pneumonia, a shift away to replacement/formula feeding will now, according to the WHO meta-analysis, push this mortality rate to 6%, which is at least equal to, if not greater, than the risk of HIV transmission through breastfeeding in the first six months (5%, according to Coovadia and Coutsooudis, 2001). It is argued that the potential for lowering the risk of MTCT can be maximised even further by appropriate breastfeeding strategies.

It is important to bear in mind that breastfeeding provides significantly higher levels of protection among resource-poor populations (WHO, 2000a, Page 454). Research has shown that deaths of babies from households without piped water or a toilet are double those of infants from households equipped with these facilities (Habicht *et al*, 1988).

In the province of KwaZulu-Natal, where an ante-natal HIV seroprevalence rate of more than 40% has been reported in some areas, a cholera epidemic that has infected 111 441 people and killed 237 people (The Mercury, 25 January 2002) creates further problems for safe formula-feeding. Until there are major social reforms, replacement feeding is unlikely ever to be a safer option than breastfeeding. Furthermore, apart from the risks of formula feeding, there are enormous costs attached to formula feeding: in the current PMTCT programmes being piloted in South Africa, the formula being provided at no charge to mothers is contributing to 50% of the costs of these programmes to the State.

BREAST MAY BE BEST IN MOST SITUATIONS

In 1998, the WHO, UNAIDS and UNICEF issued a joint policy statement on HIV and infant feeding, which stated:

“When children born to HIV-infected women can be ensured uninterrupted access to nutritionally adequate breast milk substitutes that are safely prepared and fed to them, they are at less risk of illness if they are not breast-fed. However, when these conditions are not fulfilled, in particular in an environment where infectious diseases and malnutrition are the primary causes of death during infancy, artificial feeding substantially increases children's risk of illness and death. ” (WHO/UNAIDS/UNICEF 1998)

There is no argument against the use of formula for those HIV-infected women who have received comprehensive counselling, considered their options realistically and have access to good health services as well as fuel (or electricity), clean utensils and sterilising liquid, and can conduct fresh preparation and correctly estimated volumes of feeds. However, for many HIV-infected women in sub-Saharan Africa in under-resourced communities, meeting these conditions is very difficult, which defeats the very objective of replacement feeding.

CONCLUSIONS AND RECOMMENDATIONS

In resource-poor regions like sub-Saharan Africa, where women and children bear the burden of HIV infection, it is important that public health policy to reduce MTCT prioritises the interests of the mother and child. Such policies need to promote child survival for the entire population and not just a selected group of children.

The overwhelming majority of babies born to HIV-infected women, and all babies born to HIV-negative women, will benefit from exclusive breastfeeding for about six months. Therefore, even in areas of high HIV prevalence, it is more appropriate to promote exclusive breastfeeding as public health policy (Coutsoudis, 2000) and counsel individual women on infant feeding choices, than to implement and support free replacement feeds that have potentially devastating results for maternal and child health.

Infant feeding policy should consist of thorough counselling to mothers on infant feeding choices, and support to the mother for the chosen feeding method. We argue against the provision of free formula being distributed as part of the PMTCT programme, because we believe that it unduly influences a mother's choice to choose replacement feeding regardless of her particular situation.

This is the stand taken by the newly initiated PMTCT programme based at St Mary's Hospital in Mariannhill, KwaZulu-Natal. Obviously, the very women who can safely formula-feed would be those who can afford to purchase it. We believe that State funding allocated to the provision of free formula could be used more effectively in numerous ways to support poverty-stricken women; these could include start-up funding for co-operative projects involving food production such as vegetable gardens, or bulk supplies of basic nutritional foodstuffs such as maize and beans, or similar schemes designed around child-care needs.

There is also real concern that if free formula is distributed at PMTCT sites, there will be a spill-over into the HIV-negative population who will perceive formula milk as being the method of feeding endorsed by the health facility, which will, in turn, undermine and diminish the practice of breastfeeding.

A recent UNICEF evaluation of the Botswana PMTCT sites distributing free formula has documented that this spill-over effect is a real threat. Clearly, we need to ensure that the legacy of the HIV epidemic will not be the demise of breastfeeding, as this would have disastrous consequences for child survival.

Knowledge, counselling and guidance are the absolute prerequisites for enabling women to realise their human rights in infant feeding. Counselling must be unbiased and sensitive to the individual's situation. Resources should be allocated to build capacity in counselling environments, so that unhurried counselling is available for the considerable numbers of women needing it. In the case of the mother choosing formula feeding, support should consist of educational and psychological support; those who choose to breastfeed should be provided with information about safe breastfeeding.

Resources should be spent on promoting exclusive breastfeeding for the population as a whole, so that it will be easier for HIV-infected women to practise it without stigmatising themselves as being HIV-positive. Although breastfeeding is common in Africa, exclusive breastfeeding is rarely practised, and current opinion amongst HIV experts suggested that widespread exclusive breastfeeding is not an attainable goal (de Cock 2000).

However, there is evidence that when women and their families understand the importance of exclusive breastfeeding and are supported by peer counsellors who build their confidence and offer assistance, rates of exclusive breastfeeding do improve (Haider *et al*, 2000). Work in progress in an

informal settlement in Durban has shown that HIV-infected women who receive counselling (and are part of a community where breastfeeding is promoted in the whole community) can successfully practise exclusive breastfeeding (Coutsoudis 2001).

SAFE BREASTFEEDING:

Mothers should be encouraged and assisted in practising "SAFE BREASTFEEDING". The chances of increasing the risk of HIV transmission through breastfeeding are considered and eliminated by practising the following:

- Exclusive breastfeeding to six months
- A quick (over two to four weeks) transition to formula milk and solids or heat-treated expressed breastmilk and solids (a simple home method of heating expressed breastmilk for 30 minutes has been shown to destroy the virus (Jeffery et al, 2000)
- Good lactation management during breastfeeding to prevent cracked nipples and engorged breasts which increase the risk of transmission
- Seeking medical care quickly for breast problems (mothers with mastitis or abscesses should express and discard breastmilk from the affected side and feed only from the unaffected side until the breast has healed.
- Treating infants with oral thrush or oral lesions promptly
- Using condoms to prevent new HIV infection which will increase the plasma viral load and therefore the viral load in the breastmilk

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