Should HIV-positive mothers breast-feed?

What should the clinician advise the HIV-positive pregnant woman?

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Between five and 10 per cent of HIV infection is acquired perinatally (1). The incidence of such infection will rise as more women get infected. Children with HIV progress to AIDS-related illness more rapidly than do adults. Hence, the prevention or reduction of perinatal transmission rates is an essential component of the AIDS control programme.

The maximum risk of perinatal transmission is antenatally through the placenta, or during labour and delivery when the infant is exposed to contaminated maternal blood and fluid. A pregnant woman who is HIV-positive has a 15 to 30 per cent chance of giving birth to a child with true HIV infection (1,2,3).

Risk of breast-feeding

If the child of an HIV-positive woman escapes infection through these routes, s/he can get infected during breast-feeding, as HIV is known to be present in breast milk. This has been reported in mothers who developed infection with HIV after delivery (4,5). A meta-analysis of studies estimates the breast-feeding transmission rate to be 14 per cent from mothers who were seropositive at the time of delivery and 29 per cent from mothers who acquired the infection during the post-partum period (5,6).

Breast-feeding contributes to only one to two per cent of all HIV infections (11). However, it is responsible for between 14 per cent and 28 per cent of all perinatally-acquired HIV infection. The risk of transmission is highest if the infection is recently acquired or if the mother is symptomatic (5,6).

What are the implications of these facts in the context of an international effort to promote breast-feeding in developing countries - which also happen to be most affected by HIV/AIDS'?

Breast milk is indisputably the best food for infants. It is uniquely tailored to suit the newborn's nutritional requirements (6). It promotes brain growth and visual acuity (7); it provides protection from infection as it has many immunological factors including antibodies and white blood cells (8); it also has many species-specific growth factors which help the maturation of various organ systems. The composition of breast milk changes with every feed and as the baby grows, to suit the baby. Breast-feeding also reduces the family's health care costs and the mother's risks of breast and uterine cancer (7, 8, 9).

Babies who are not breast-fed receive animal milk or formulated infant milk substitutes, usually through a bottle. Artificial feeding can at best mimic, but never duplicate, the nutritional composition of breast milk. It cannot provide the baby immunological and growth factor advantages. Since infant formula is very expensive, in households lacking resources, overdilution of formula and unhygienic preparation and feeding methods can lead to malnutrition and infections. Formula- or animal milk-fed infants have up to three to five times higher infant mortality rates than do breast-fed infants (10).

In these circumstances, how should health professionals in a country like India advise the HIV-positive mother of a newborn? By breast-feeding, she risks her infant developing a fatal disease. If she does not breast-fed, she risks her baby dying from malnutrition or infection. This is a serious ethical dilemma for the clinician.

Are the alternatives safe?

Studies have shown that in such circumstances, if the family can afford to feed the baby adequate quantities of either animal milk [illegible] st- [illegible]an have a very safely and as long as required, the infant's chances of survival are higher than if s/he were breast-fed. Unfortunately when animal milk or infant formulas are misused, the risk of infant death due to malnutrition or infection is actually higher than the risk of death through HIV acquired through breast-feeding (2 1).

Alternatives are also not advisable for infants who have already acquired HIV, before or during birth. These babies are very prone to infection, and not breast-feeding is disastrous; in these conditions, breast-feeding may be the safest feeding option even if the mother is HIV-positive (1 1).

Infants at risk of acquiring HIV through breast milk represent a very small percentage of the infant population. More than 98 per cent of babies are born to HIV negative women, and one-third of babies born to HIV-positive women are already infected, prenatally or intranatally. Those needing counselling on alternative feeding practices are the small proportion of HIV-positive women whose newborns are uninfected - and are therefore at risk of acquiring the virus.

The required infrastructure

In order to reach this group of women, all pregnant women would have to be offered counselling and antenatal testing for HIV. Those testing positive would be offered counselling, including the option for MTP, and drugs to reduce perinatal transmisson. The newborn infant would have to be tested using special, very expensive tests that can detect the presence of the antigen, since 80% of newborns of HIV positive mothers will have antibodies in their blood - not necessarily the antigen.

In the absence of such an infrastucture and targetted counselling, messages restricting

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negative impact on the breast-feeding campaign. There is evidence of women changing their breast-feeding patterns because of concern that they might be HIV-positive. Some physicians are also reported to advise women to avoid breast-feeding based on their risk characteristics rather than objective results (13).

A computer model based on a mathematical model (13) examines the risk of' such 'spillover'. In absence of an integrated package to reduce the perinatal transmission of HIV, if all mothers who are HIV-positive and five per cent of mothers who are HIV-negative stop feeding their babies, the infant mortality will be higher than if all mothers – irrespective of HIV status – breast-feed their babies (14).

The most important and long-term solution? of course, is to reduce the overall transmission of AIDS: through education of youth, promoting safer sexual and injecting drug behaviour, treatment and prevention of other sexually transmitted diseases, safe hospital practices and a clean blood supply.

Withholding breast-feeding will reduce the perinatal HIV transmission rate only in the presence of a working infrastructure and resources to provide counselling, testing, drug treatment, c-section deliveries and safe infant milk substi tutes.

An experimental model in the Dominican Republic estimates that if 133, 7 15 women were to be screened yearly and 3,000 test positive, the cost of' screening and of offering the entire package to 3,000 women would be US$838,718 (over Rs 343 lakh) per year (13). One can imagine the costs when applied to the Indian situtation.

For this reason, UNAIDS / UNICEF / WHO and the Breast-feeding Promotion Network of India (BPNI) have stated:

1. Breast-feeding should continue to be protected, promoted and supported in all populations, irrespective of HIV infection rates.
2. Where the primary causes of infant deaths are infectious diseases and malnutrition, and where the risk of death due to these is higher than that of dying due to HIV transmitted via breast milk, all mothers should be advised to breast-feed.
3. In settings where safe infant milk substitute feeding can be provided, HIV-positive women should be advised not to breast-feed but use a safe feeding alternative for their babies. These can include foitnula, feeding pasteurised donor milk or wet nursing by a HIV-negative woman. Women whose infection status is unknown should be advised to breast-feed. In these settings, if feasible and affordable, voluntary and confidential HIV testing should be made available to women along with pre-and post-test counselling. They should be advised to seek such testing before delivery.
4. Priority should be given to policies and programmes which aim to prevent wotnen of childbearing age and their partners from becoming infected with HIV in the first place (15,16,17).

If an HIV-positive mother chooses to breast-feed, she can reduce the risk of transmission by pasteurising expressed breast milk at 62.5 ^{0} C for 30 minutes (18); exclusively breast-feeding for four to six months, followed by a quick weaning (20); and improving her nutrition, especially her Vitamin A status (20).

Our ethical duty as health professionals is to provide the mother accurate and complete information, and the support needed to make her choice as safe as possible. It also means respecting her decision to breastfeed or otherwise, which will be based on her own circumstances.

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