



Final Report
Attitudes of HIV infected Mothers towards expressed
and pasteurized breast milk for infant feeding.

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Abstract

Approximately 25% of women attending state run antenatal clinics in South Africa are HIV infected. One of the challenges facing those working to reduce rates of Mother to child transmission of HIV is the problem of infant feeding. Although in developed countries, formula feeding is the method of choice for HIV positive mothers, in developing countries, formula is not always suitable, not only because of the problems of cost and lack of facilities for safe reconstitution of feeds, but also because of the loss of protection from breastmilk and the risk of increased infant mortality due to diarrhea and other diseases. Pretoria Pasteurisation is a potential alternative. It is a low tech, low cost method by which an HIV infected woman may express and heat treat her breast milk in order to inactivate the virus within the milk whilst maintaining its nutritional and immunological value. The method has been shown to be reliable and to effectively inactivate HIV in the milk of infected women.

After the method had been shown to be virologically effective, its implementation was considered for the feeding of preterm infants in the Neonatal unit at Kalafong hospital. This is a group at particularly high risk of potentially fatal infections if formula fed. Use of Pretoria Pasteurisation requires full co-operation of the infant's mother to express her milk and to pasteurise it before feeding to the infant. For this reason it was vitally important to gain some understanding of the attitudes of mothers towards expressing and heat treating their breast milk before any attempt could be made at implementation of Pretoria Pasteurisation. In this study an open-ended questionnaire was used to interview HIV infected women who had recently delivered infants at Kalafong hospital.

Eighty percent of women interviewed were dependent on others for housing and financial support and did not have resources to purchase formula milk. Half of the women live in informal housing. They identified others such as father, husband or boyfriend as the decision maker within the family. All women expressed positive attitudes towards pasteurisation of their breast milk for feeding their infant while in hospital. Five of the participants requested immediate assistance to commence pasteurisation for their low birth weight infants in the High Care unit. Levels of disclosure of HIV status amongst participants were low and several expressed reservations about disclosure. Use of an alternative feeding method such as Pretoria Pasteurisation at home without disclosing HIV status would be difficult, thus further work is needed to investigate the feasibility of the use of Pretoria Pasteurisation outside an institutional setting, and in the home.

Introduction

There is worldwide growing commitment to protect, promote and support breastfeeding as a norm. Breastfeeding provides substantial benefits to both mother and infant. It provides a unique biological and emotional basis for the mother and infant,² improves infant survival by protecting infants against potentially fatal infections, while it enhances mental development and quality of life. It further provides significant nutritional and psychosocial benefits. Artificial feeding increases risks to child health and contributes to child morbidity and mortality. In low birth weight infants the risk of necrotising enterocolitis and nosocomial infections increases the risk of mortality and morbidity due to immaturity of the intestines.⁸ Breastfeeding may contribute to maternal health in various ways including; spacing of childbirths, lowering the risk of osteoporosis, pre-menopausal breast cancer and cancer of the ovaries.¹⁻²

It has however been established that HIV is transmissible through breastmilk.² Vertical transmission of HIV or mother to child HIV transmission may occur during pregnancy, during labour and from breastfeeding (14%). Approximately 25% - 30% of HIV infected mothers in South Africa will transmit the HIV infection to their child, and this may rise to 40% in developing countries. A new acute HIV infection during the breastfeeding period is considered to be a very high risk for HIV transmission to occur. Other risk factors are a long duration of breastfeeding, cracked nipples, mastitis and oral thrush in the baby²⁻⁴

Formula feeding is used for the feeding of infants born to HIV infected mothers in developed countries, where adequate resources and facilities are available for safe replacement feeding and women are supported, educated and counselled, and progress of mother and infant monitored.² HIV-positive mothers need to be supported to make informed choices about infant feeding methods appropriate to their needs. It is important that the mothers who choose not to breastfeed are able to procure adequate quantities of breastmilk substitutes and to prepare these substitutes correctly and safely.² In South Africa diarrhoea, acute respiratory infections and malnutrition are major causes of morbidity and mortality in infants and young children and there is an intimate association between low breastfeeding rates and the susceptibility to these infectious diseases.² It is therefore important that measures should be taken that breastfeeding is not undermined among HIV negative women and among those whose HIV status is unknown. Breastfeeding should continue to be protected, promoted and supported irrespective of HIV infection status.¹⁻²

The situation in South Africa is not ideal and many social and economic factors play a role in preventing mothers from making use of formula feeds or having access to them. From earliest childhood women are exposed to the traditional way of feeding infants namely breastfeeding. HIV infection stigmatises people in the community and mothers may not want to use different ways of feeding their infants other than the traditional way of breastfeeding, in order to avoid exposure as being HIV positive with the concomitant stigmatisation.

Mothers who may be willing to formula feed may not have the means to buy the feeds. Affordable forms of infant feeding may reduce the risk of HIV transmission from mother to child. One such alternative way of feeding is being developed by the University of Pretoria, focusing on the pasteurisation of expressed breastmilk of HIV positive mothers. The method is an inexpensive simple technique that can be used in any domestic setting.⁶

This method was shown to inactivate the Human Immunodeficiency Virus excreted into the mother's breast milk. The advantage of the Pretoria Pasteurisation is that it preserves most of the protective factors in the breast milk including the secretory IgA.⁶

Pretoria Pasteurisation

The mothers expresses her breast milk, between 50-150 ml, and place the milk in a peanut butter glass jar, with a volume of 430cm³ and a mass of 220grams, the lid is replaced. The glass jar is then placed into a one litre aluminium pot. Water is boiled in a kettle or by any other means. When the water is boiling vigorously the water is poured over the glass jar into the aluminium pot, a volume of 700ml of boiling water is required. The glass jar stands in the pot of hot water until the water is at a comfortable temperature to touch, about 25-30 minutes. The expressed breast milk can then be given to the infant, either by cup feeding, tube feeding, or syringe feeding. The remaining pasteurised breast milk can be stored safely without refrigeration for eight to twelve hours and with refrigeration for 24 hours.⁶

Kalafong Hospital Setting

The neonatal intensive (NICU) and high care units (NHCU) at Kalafong Hospital has a policy which promote mother's own breast milk for infant feeding. A large proportion of the infants admitted to the unit are low birth weight infants (LBW), who are at high risk of developing nosocomial infections like necrotising enterocolitis (NEC), a serious and often fatal disease of LBW infants. Studies have shown that own mother's milk provides protection against the development of NEC. There is also evidence that mother's milk prevents other infections among LBW infants.

The NICU and NHCU also has a policy to encourage HIV testing of all mothers of preterm infants admitted to the neonatal unit after pre-test counselling and explanation of the importance of this information for the treatment of the infant. This has lead to a policy that all HIV positive mothers were counselled about the possibility of HIV transmission to their infants via their breastmilk. The mothers were given informed choices as to whether they want to continue with breastfeeding or to opt for formula feeding. Subsequently many infants who were HIV exposed were placed on formula feeds. Unfortunately because of the infants' LBW and risk of nosocomial infections these infants were placed at increased risk of infection by removing the anti-infective properties and protection of their mother's milk. The possibility to use the Pretoria Pasteurisation method

was considered, seeing that it inactivates HIV in breastmilk but does not affect the beneficial characteristics of it.

Before introducing the Pretoria Pasteurisation method to the HIV infected mothers in the NICU and NHCU various issues had to be considered. Custom and tradition is very important in the African culture and must be understood within context. In considering the traditional backgrounds of the mothers several questions were raised. The question might be asked: what are the attitudes of HIV infected mothers towards expressing and pasteurising breast milk for own infant feeding?

Research Aim

The research aim of the study was to determine the attitudes of HIV infected mothers towards expressing and pasteurising breast milk for own infant feeding.

Methods

A qualitative research design was used to reach the aim of the study. 10 women who are of known seropositive status were recruited post delivery including mothers of high risk low birth weight infants. Each participant was individually interviewed. A structured open-ended questionnaire was used. Adequate information was provided to the participant and the procedure of pasteurisation was demonstrated, before obtaining informed written consent. Availability of free formula milk at some of the pilot sites for the national MTCT programme was not discussed during the interviews as most women in South Africa do not have access to this facility and also in view of the reviewed UNICEF policy not to support the provision of free or subsidised formula milk. Interviews were audiotaped, and verbatim transcribed. Where the mothers used their vernacular language (other than English) the data were translated to English. Data analysis was done through a technique of text analysis (Tesch in Creswell, 1994:155). A deductive and inductive strategy were used to analyse the data.

Results

Demographic characteristics

The age of the women ranged from 22-42 years with an average of 28.2 years. Fifty percent of the women were not in a stable relationship with a partner. The number of children ranged from 1-7 with an average of 2.3. All the women had some formal primary or secondary education, ranging from grade 5-12, with a mean of 9.2. The women who participated in the project were from six different black African cultures.

Social and cultural characteristics

The women are mostly dependent on their family for housing. 80% of the women share housing facilities with extended families. Only 20 % of the women had their own residence. Half of the women live in informal housing. The number of people staying in a house ranged from 2-7 with an average of 4.4. All of the women had access to tap water and 90% to electricity. The mothers did not see themselves as the decision-makers in the family. They indicated the father, mother, sister, husband or boyfriend as the decision-maker or head of the family depending on who they stayed with. Forty percent of the women have made use of traditional healers in the past. All the mothers have some family support system, this includes, partner, grandmother, mother, father, sister, brother and aunt, community groups and clinics.

Attitudes of mothers

The attitudes of mothers will determine whether the implementation of pasteurisation for their own infant feeding will be successful before embarking on this method of infant feeding. All the mothers that were interviewed indicated that they were positive towards this method. Five mothers requested immediate assistance with pasteurisation for their infant feeding, due to the fact that they had no financial resources or facilities for safe alternative methods of infant feeding. The mothers did not foresee any problems using this method at hospital or at home. All the mothers indicated that they would be able to use this method, as it was not difficult to practice. The method is simple and the equipment needed is available in their homes. They do not have to purchase any equipment to continue with the procedure at home.

Some of the mothers (n=2) expressed some fears. One mother said she might not be able to produce enough breast milk to feed her infant. Other fears related to the HIV status, and disclosure. One participant indicated that she was worried that her mother will not keep her HIV status confidential and may gossip to relatives and the community. Five of the mothers disclosed their HIV status to their partners or a family member, the other women were unsure about disclosing to their partners or family. The women expressed fear that their partners may leave them or that family members may gossip to the community. One woman's husband left her after disclosing her HIV status to him.

Conclusion

The women who participated in the study come from disadvantaged African communities and some of them are the poorest of the poor. They are dependent on their families for support and daily survival. The women do not see themselves as the decision-makers or head of their family. Due to the social and economic vulnerability and disempowerment of the women, they have little or no means to affordable forms of infant feeding, but other than to breast-feed their infants. This increases the risk of mother to child transmission of HIV.

Traditionally breast-feeding is accepted and expected in the African culture. The participants did not have any fears or foresee any problems with pasteurisation in the hospital, and felt positive about this method for infant feeding. During the study five of the participants requested immediate training and support with pasteurisation. This was successfully implemented. In resource poor settings Pretoria Pasteurisation may prove to be a valuable method to reduce mortality and morbidity of infants, especially for high risk low birth weight infants. The concerns expressed by the women regarding disclosure of HIV status indicates that further work is needed to determine whether Pretoria Pasteurisation would be a feasible infant feeding method in a domestic setting after discharge from hospital or in healthy full-term infants.

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