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Saviours or culprits? HIV, infant feeding, and commercial interests
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A recent paper by Ruth Nduati and colleagues in *The Lancet* (26 May 2001) **(1)** reported a three-fold higher mortality rate in HIV-infected mothers who breastfed their infants compared with those who fed their infants with formula.

These results arose from a secondary analysis of a randomised trial of breastfeeding compared with formula feeding conducted in Nairobi, Kenya, between 1992 and 1998. **(2)** The trial was designed to assess the rates of mother to child transmission of HIV according to mode of infant feeding. Eighteen of 197 women randomly allocated to breastfeed their infants died within 24 months of delivery compared with six of 200 women allocated to the formula-feeding group. The cumulative 24-month mortality rates were 11% and 4%, respectively, corresponding to a 3.2-fold higher risk of death (95% confidence interval 1.3 – 8.1). Since assessing mortality in mothers was not the primary objective of the trial, this unexpected observation must be interpreted cautiously. Preliminary results on mortality were communicated in July 2000 in Durban. **(3)**

A strength of the study was the random allocation to mode of infant feeding, and the authors correctly present their primary results according to randomised group. However there was considerable non-compliance with the allocated infant feeding group (4% of those allocated breastfeeding did not give any breast milk to their infants and 29% of those allocated formula feeding also gave breast milk). Potentially useful additional information could be obtained by considering the mortality rates according to a measure of milk production, such as the proportion of daily infant feeds given as breast milk.

The authors suggest that the high energy demands of breastfeeding in HIV-infected mothers may accelerate the progression to HIV-related death. If this is true then a higher death rate should be apparent in women

who breastfed their infants exclusively compared with those who gave their infants food supplements or avoided breastfeeding altogether.

By contrast, Coutsooudis and colleagues have published an analysis of morbidity and mortality in mothers enrolled in a randomised study of Vitamin A supplementation conducted in Durban, South Africa, analysed according to their chosen method of infant feeding. **(4)** This secondary analysis was conducted to specifically address the concerns raised by the preliminary results from Nduati and colleagues and showed that two of 410 (0.5%) women who ever breastfed their infants died compared with three of 156 (1.9%) who never breastfed. In addition there was no excess of any reported morbidity in mothers who breastfed compared with those who did not (12.7% and 14.7%, respectively). While these results are reassuring, the limitations of the analysis must be recognised – women chose whether or not to breastfeed their infants, and the numbers of women involved was small. The study had at most 50% power to exclude a 3-fold increase in mortality in mothers who breastfeed.

Neither of these studies provided detailed information on the mode, duration and quantity of breastfeeding and the associated mortality risks. In addition the two groups of women enrolled in the trials are not directly comparable. Those in Durban were in general healthier, as evidenced by a lower prevalence of anaemia and better immune status at enrolment, than the women in Nairobi. The overall mortality rate in the Durban cohort was less than 1% with an average follow-up of 10.5 months compared with overall mortality rates over 4% at 1 year and 7% at 2 years in the Nairobi cohort.

One of the two reports shows a three-fold excess risk of death within 2 years among women who breastfed compared with those who formula fed their infants, while the second suggests no additional risk. Limitations of the data suggest a cautious interpretation. Nevertheless the findings are important and additional research on this issue is urgently required. Further analysis was also called for by Newell in her commentary **(5)**.

The preliminary results from the new study had been communicated in July 2000 and were considered by the Technical Consultation convened by WHO in October 2000. **(6)** The new results do not warrant any change in current policies on breastfeeding nor on infant feeding by HIV-infected women. These are:

- 1.** Exclusive breastfeeding should be protected, promoted and supported for 6 months. **7** This applies to women who are known not to be infected with HIV and for women whose infection status is unknown;
- 2.** When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected mothers is

recommended; otherwise, exclusive breastfeeding is recommended during the first months of life; **6 , 7**

3. To minimize HIV transmission risk, breastfeeding should be discontinued as soon as feasible, taking into account local circumstances, the individual woman's situation and the risks of replacement feeding (including infections other than HIV and malnutrition); **6**

4. HIV-infected women should have access to information, follow-up clinical care and support, including family planning services and nutritional support. **6**

The most recent results from the study in Nairobi emphasise the need for proper support to mothers who are infected with HIV and provide a further reason for women to know their HIV infection status. This particularly applies to pregnant women who should be given access to programmes to prevent mother to child

transmission (MTCT) of HIV and also access to care and support programmes for HIV-related conditions. WHO recommends that these should include the prevention and treatment of opportunistic infections, treatment with antiretroviral drugs where possible and psychosocial and nutritional support.

References

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