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HIV and infant feeding: a complex issue in resource-limited settings

Renaud BECQUET ¹, Valériane LEROY ¹

¹ Unité INSERM 593, Institut de Santé Publique Epidémiologie Développement (ISPED),
Université Victor Segalen, Bordeaux, France

Corresponding author:

Renaud BECQUET, Unité INSERM 593, Institut de Santé Publique Epidémiologie
Développement (ISPED), Université Victor Segalen Bordeaux 2, 146 rue Léo Saignat, 33076
Bordeaux Cedex, France, Tel.: +33.(0)5.57.57.45.35, Fax: +33.(0)5.57.57.45.28, E-mail:
Renaud.Becquet@isped.u-bordeaux2.fr

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In a recent issue of *AIDS*, Magoni *et al.* investigated the impact of different infant feeding strategies on mother-to-child transmission of HIV within a study conducted in an urban Ugandan site [1]. They reported a lower postnatal risk of HIV transmission at age six months in formula fed children compared to breastfed children and concluded that formula feeding was the safest way of feeding children born to HIV-infected mothers. We acknowledge the importance of assessing such a question within a large prospective cohort, since conducting a clinical trial allocating the infant feeding option at random was not ethically acceptable in this context. However, we would like to raise several concerns about the quality of definition and documentation of the outcomes, the statistical methods used and the interpretation of these findings.

Firstly, to compare the efficacy in reducing HIV postnatal transmission and safety of different infant feeding strategies, these practices have to be properly defined, precisely documented using validated tools such as recall histories, and prospectively and frequently recorded to minimize the maternal recall bias [2-4]. To fully and accurately interpret the results of this study, all of these issues need to be clarified. Indeed, the infant feeding definitions used in this report were not in accordance with those recommended by the World Health Organization [5, 6], the method of collection of infant feeding practices was not specified and the long-term postnatal compliance to the infant feeding strategies chosen at delivery was not presented in detail. Infant feeding counseling strategies should also have been described and discussed. Did counseling begin antenatally ? How were the infant feeding interventions proposed to the women ? Were the counseling sessions organized individually or collectively, and how frequently ?

Secondly, the simple cumulative proportion used to calculate HIV transmission rates was acceptable at age six weeks but inappropriate at age six months. Consensus approaches for the statistical methods that should be considered for analyzing long-term postnatal HIV

transmission rates have already been developed, such as the extension of the Kaplan-Meier procedure to interval-censored data or competing risks analysis [7, 8]. Such sophisticated methods account for the fact that exact age at infection is unknown, that risk for postnatal infection ends at weaning, or that censoring due to death may be informative. Moreover, these methods have already been used within several studies, which allows direct comparison in the efficacy of specific interventions between studies [9, 10].

Thirdly, the evaluation of two other judgement criteria relative to infant health, i.e. infant growth and morbidity, was too cursory to be interpretable. Such a strong conclusion as *“formula feeding was the safest way to feed children”* would thus require a much more detailed evaluation of these events.

Lastly, we strongly believe that choosing the endpoint for both clinical and laboratory evaluation at six months postnatal only was of scientific concern. In Uganda, the median duration of breastfeeding was reported to be 21 months in urban settings [11]. Proposing women to breastfeed for not more than six months was thus unusual in this context, and the repercussion of this strategy on infant health should be long-term investigated, especially after early cessation of breastfeeding. Indeed, it is recommended that clinical follow-up should continue until two years of age to fully assess health outcomes in studies evaluating alternatives to breastfeeding in the context of HIV [12]. Moreover, it is important to diagnose HIV postnatal transmission that might occur beyond six months to improve the clinical care of HIV-infected children.

In high HIV prevalence resource constrained countries, HIV-infected pregnant women face a real dilemma regarding the way of feeding their forthcoming infant. The evaluation of infant feeding strategies on the reduction of postnatal mother-to-child transmission of HIV is complex with multiple judgment criteria. To be fully assessed, the balance of the risks and benefits of each feeding practice has to include the reduction of HIV postnatal transmission

on one hand, and all the potential risks for the mother (stigmatization, incidence of new pregnancies) and for infant health (growth characteristics, severe morbidity, mortality) on the other hand. These assessments require long-term follow-up until two years of age before providing a definitive picture. As a conclusion, we feel that this study provides useful knowledge on HIV postnatal transmission according to infant feeding practices at six months. However, it is probably too premature to solve the breastfeeding dilemma, as some judgment criteria which need to be taken into account are not fully measured. In this sensible context, inaccurate evaluations could be prejudicial to the debate.

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