Effective Prevention of Parent-to-Child Transmission of HIV

We read the recent article in Indian Pediatrics by Seenivasan, *et al*. [1], with great interest. The authors inferred and suggested that the perinatal transmission detected by polymerase chain reaction (PCR) positivity at 6 weeks in three infants was secondary to intrapartum transmission and could not be attributed to breastfeeding alone. Though risk of transmission increases with duration of breastfeeding, it has been well reported in literature that transmission of human immunodeficiency virus (HIV) through breastmilk can occur even as early as six weeks [2,3]. Moreover, during early stages of breastfeeding, infants may be at increased risk of infectivity due to factors such as immaturity of immune system, increased permeability of gut, or high HIV load in colostrum [4]. In a randomized control study by Nduati, *et al*. [2], there was 10% increase of cumulative risk in breastfed infants for developing HIV infection when compared to formula-fed infants, even at 6 weeks [2]. SAINT trial group inferred that breastfed infants are twice at risk of HIV infection compared to non breastfed infants during the first four weeks [3]. Hence, attributing HIV DNA PCR positivity to intrapartum transmission alone may not be prudent.

It is interesting to note that HIV transmission was prevented even in mothers with advanced clinical disease. The important factor, as also stated by the authors, could be the introduction of triple anti-retroviral therapy (ART). However, it may also be important if the authors could furnish the details regarding mode of delivery, associated sexual transmitted infections, and various obstetric factors known to influence HIV transmission among the three groups of HIV positive mothers. It is a well known fact that elective cesarean delivery prior to rupture of membranes reduces the risk of HIV transmission by nearly 50% compared to vaginal delivery [5]. Hence, if those confounding variables are equally distributed among the groups, then ART can be singularly taken as the protective factor.

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Effective Prevention of Parent-to-Child Transmission of HIV: Author's Reply

The publication quoted by author [1] showed the higher risk of breastfeeding-related transmission in early stages of breastfeeding than in the late stages, but the higher risk of mother-to-child transmission was predicted based on the mathematical model developed by them for different sources of epidemiological data. Prior to the 2010 guidelines on HIV and infant feeding [2], avoidance or early cessation of breastfeeding seemed logical or appropriate. However, the repercussions for the health and survival of the infants were serious, with studies showing much higher mortality rate due to diarrhea, malnutrition and other diseases in non-breastfed children. The 2010 recommendations are based on evidence of positive outcomes for HIV-free survival through provision of anti-retrovirals to breastfed HIV-exposed infants. Apart from the above mentioned, there are many publications [3-5] documenting that exclusive breastfeeding at early stage reduces HIV-transmission risk for infants.

In our study, the time of testing (6 weeks of postnatal life) was based on National AIDS Control Organization/ guidelines [6]. Three infants who were exclusively breast fed were HIV-1 DNA PCR positive at 6 weeks of life. Based on the papers [3-5] we quoted above, we may attribute HIV DNA PCR positivity to intrapartum transmission. However, we do agree that intrapartum transmission alone may not be the cause in our study. Breastfeeding is a possible factor for PCR positivity. However, we did not carry out DNA PCR at birth, to rule out intra-uterine transmission. Transmission during delivery would be missed if DNA PCR is taken at birth as viral replication

takes time. Secondly, DNA PCR demonstrated lower sensitivities at birth and 4 weeks of 68.4% and 87.5%, respectively. One infant who was PCR negative at 6 weeks became positive during the second sampling after stopping breast feeds. This we attributed to breast feeding (25 % of total transmission). Moreover, we recommend further studies in Indian setting to assess the effect of formula feeding in HIV transmission, and overall mortality and morbidity.

Confounding variables like HIV staging of mother, CD 4 counts, mode of delivery, antenatal bleeding per vaginum, prolonged rupture of membrane were comparable as given in ***Table* I** in the study [7]. None of the four women had other sexually transmitted diseases during pregnancy. Hence, ART can be singularly taken as the protective factor.

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Nasopharyngeal Carriage of Organisms in Children With Severe Pneumonia

We read with interest the recent article in Indian Pediatrics by Singh, *et al*. [1], and have the following comments to offer:

1. It is not clear why authors excluded children with radiological evidence of consolidation and pleural effusion.
2. Though children with consolidation were excluded, the results state that 63.9% children had infiltrates on chest *X*-ray, which is a bit confusing.
3. The table titled 'Frequency of organisms in nasopharyngeal secretions in children with community acquired severe pneumonia' divides the patients in to 'Home' and 'Hospital'. The basis of such categorization is not clear from the methodology whether they indicate the place of specimen collection or the type of care the patients received.
4. Serotyping of the pneumococcal isolates could have helped in vaccine development.
5. As the conjugate *H. influenzae* vaccine is known to reduce the nasopharyngeal carriage of the organism [2], the data on immunization status of the children would have been interesting as many of these children might have received this vaccine as per latest National Immunization Schedule.
6. Nasopharyngeal carriage of Pneumococcus in children with pneumonia has been used as a surrogate marker for invasive disease [3]. The data on treatment received by the children and their outcome would have enlightened the readers about the clinical utility of the isolates and their antibiotic, susceptibility in the absence of a blood culture.

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