

Incidence of HIV at first PCR testing among infants born to HIV positive mothers in Kumasi

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BACKGROUND

Preventing mother-to-child transmission (MTCT) of HIV is a major strategy to reduce the incidence of HIV. The risk of transmission of HIV from an infected mother to the child through the pregnancy, labour and delivery and breastfeeding is estimated to range from 15 to 45% in the absence of any intervention. The advent of antiretroviral therapy has provided the opportunity to reduce this risk of transmission to below 5%. In Ghana, the National AIDS/STI Control Programme (NACP) is at the fore in the fight to eliminate the MTCT of HIV. The introduction of the Early Infant Diagnosis (EID) programme which employs the polymerase chain reaction (PCR) and gives definitive results at a much faster time period has provided better opportunities for the elimination of the MTCT of HIV. Prior to its introduction, serological confirmation of HIV in children born to HIV exposed babies required testing at 18 months of age with the associated parental anxieties and a high drop-out rate. The EID programme has resulted in a major shift in the diagnosis of HIV in infants. The Komfo Anokye Teaching Hospital (KATH) rolled out the EID programme in 2011 following the provision of the requisite equipment by NACP.

METHODS

All children enrolled on the EID programme in KATH from January 2011 to December 2013 were included in the review. Data was abstracted from the Prevention of Mother to Child Transmission (PMTCT) of HIV Clinic records, laboratory reports and Child Welfare records. Data was entered and analysed using Epi Info version 7.1.4.

RESULTS

A total of 527 HIV-exposed babies underwent EID of HIV during the period. Two hundred and eighty-three (283) representing 57.0% were male. The mean age at testing was 13.3 weeks. The maximum age recorded was 92 weeks with only 2.3% having their dried blood spot (DBS) taken before 6 weeks of age and 13 (2.5%) after 52 weeks of age.

Clinical, ANC and Delivery History

Among mothers of all children in this study, 41 (7.8%) were found not to have been on any form of antiretroviral therapy (ART) during pregnancy, labour and delivery. The remainder were either on ART prior to conception or given ARVs during pregnancy. The majority of

the babies were delivered in KATH (77.0%). Approximately 78% of babies were delivered vaginally with the remainder delivered by Caesarean Section. Forty (7.6%) women did not know their HIV status until after delivery or later.

EID Results

All children in this study underwent EID for HIV. A total of 22 (4.2%) children tested positive for HIV by PCR. The proportion of HIV positive children was not different when compared by sex with 4.21% males and females 4.24% receiving a positive test result. There was no statistically significant difference between the two groups $p=0.98$.

Risk factors for Transmission

Children born to mothers who were not on any form of ART accounted for the majority of HIV positive infants (59.1%). Among children born to mothers not on any form of ART, 31.7% were found to be HIV positive. Much lower proportions were recorded among women on ARVs before or during their pregnancies (Table 1).

Overall, children whose mothers were on any form of ART were less likely to be HIV positive compared with those whose mothers were not on any form of ART (RR= 0.05; 95%CI= 0.03- 0.13; $p<0.001$).

Among Children delivered by Caesarean Section, 2.80% were found to be HIV positive compared with 2.83% for those delivered vaginally and this was found to be statistically insignificant (RR=1.00; 95% CI= 0.97- 1.04; $p=0.99$).

Children delivered in KATH were likely to be HIV positive in this cohort compared with those delivered outside KATH (RR= 0.33; 95% CI= 0.13- 0.91; $p= 0.03$).

Children born to mothers who were unaware of their HIV status during pregnancy were more likely to be HIV positive compared with women who were aware of their HIV status (RR=17.6 95%CI= 8.0-38.6; $p<0.001$)

Table 1: EID results by ART status of mother

ART STATUS	PCR Results		Total
	Negative (%)	Positive (%)	
HAART	311 (97.5%)	8 (2.5%)	319 (60.5%)
None	28 (68.3%)	13 (31.7%)	41 (7.8%)
Prophylaxis	166 (99.4%)	1 (0.1%)	167 (31.7%)
TOTAL	505 (95.83%)	22 (4.2%)	527

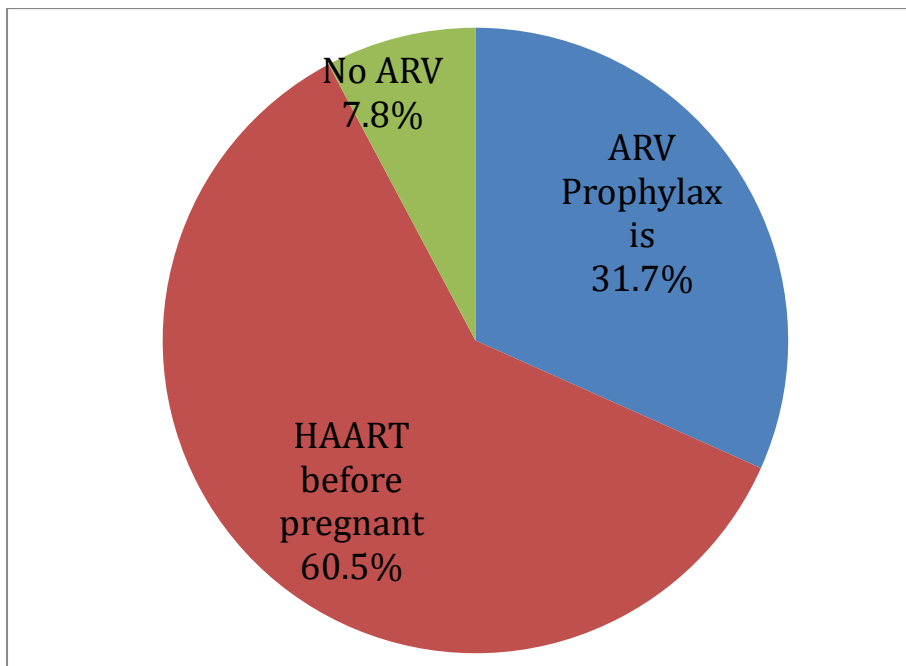


Figure 1: ARV status of HIV positive women (during pregnancy or post-partum in KATH, 2011-2013)

CONCLUSION

Significant proportions of women still do not undergo HIV testing or are unaware of their HIV status during pregnancy despite high ANC coverage in Ghana. About a third of HIV positive pregnant women are receiving ARVs for the first time in their respective pregnancies. A significant proportion of HIV positive women during pregnancy were already on HAART.

Children born to women on ARVs during pregnancy are less likely to be HIV positive. Achieving zero infections in children born to HIV positive mothers is possible. A significant proportion of pregnant HIV positive women in KATH were already on HAART. There are lessons to be learnt from the KATH programme to help achieve this.

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