

Qualitative detection of *proviral-DNA* of *HIV-1* in infants to determine the efficacy of antiretroviral therapy in the prevention of vertical transmission of *HIV-1* in the Gambia.

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Background

The priority of the Gambia government is to eliminate maternal to child transmission of HIV and in line with this priority, the country implemented an antiretroviral therapy (ART) program. With this, all HIV infected pregnant and breastfeeding mothers and infants have access to ARV drugs. This study aims to determine the prevalence of vertical transmission of HIV among women receiving the ARV drugs.

Method

Dried blood spot samples were collected from 109 HIV-exposed infants enrolled in 13 PMTCT sites across the country. A qualitative detection of proviral-DNA of HIV-1 was performed using the RealTime Abbott PCR assay. Data from 105 mothers were analyzed using SPSS version 16.0 and association of risk factors to PCR results were analyzed using (Crosstabs) Pearson Chi-Square. The p-value of significant was set at **p<0.05**.

Results

This study has found the prevalence of vertical transmission of HIV is **0.0% (0/64)** among women that received the ARV prophylaxis then started ART, **7.1% (2/28)** among mothers that received HIV prophylaxis only, and **38.4% (5/13)** among women who neither receive HIV-prophylaxis nor ART during pregnancy or breastfeeding as described in table 1.

The table 2 below shows other risk factors of vertical transmission such as late initiation of treatment, default during treatment and first born of twins were found to be significantly associated with vertical transmission p=0.001, p=0.022 and p=0.000 respectively.

<i>Table 1</i>	Total	HIV +	HIV--	Rate %
Mother received HIV-prophylaxis then started ART during pregnancy and breastfeeding	64	0	64	0.0%
Mother received only HIV-prophylaxis during pregnancy and breastfeeding	28	2	26	7.1%
Mother never receive HIV-prophylaxis or ART during pregnancy or first 03 months of breastfeeding	13	5	8	38.4 %

<i>Table 2</i>	Total	HIV +	HIV--	Rate %	p-value
Mother late to start prophylaxis or ARV (after 03 months of breastfeeding)	16	5	11	31.2%	p=0.001
Mother defaulted treatment at some time during pregnancy or breastfeeding	19	3	16	15.8%	p=0.022
First born of a twins	5	2	3	40%	p=0.000
Exclusive breastfeeding	109	7	102	_	Not Sig

Conclusion

This study has found that the early intervention of ART at the onset of pregnancy through breastfeeding can eliminates Maternal to Child transmission of HIV and a high risk of vertical transmission was found among women who neither receive prophylaxis nor ART. If the effectiveness of the antiretroviral therapy is maintain, the Gambia, in the near future will attain the WHO's goal to eliminate Maternal to Child transmission of HIV.

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References

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- This article can be accessible at <http://www.scirp.org/journal/wja>