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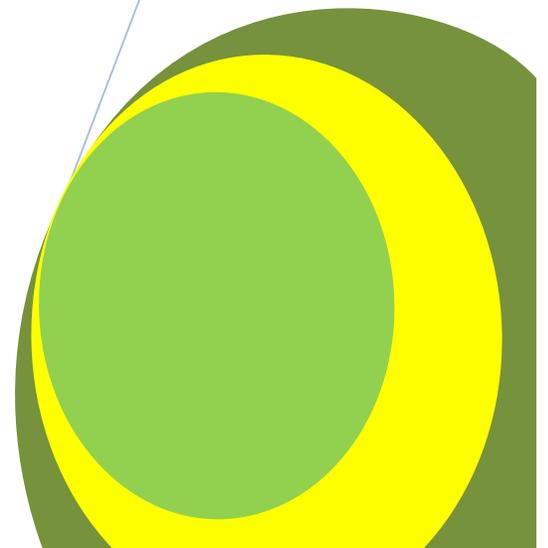
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## **HIV Infections in Mothers and their New-born Babies in University of Port Harcourt Teaching Hospital, Port Harcourt Nigeria**

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# HIV Infections in Mothers and their New-born Babies in University of Port Harcourt Teaching Hospital, Port Harcourt Nigeria

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## ABSTRACT

The strategic position of Nigeria in the global map of HIV calls for continuous and progressive study of HIV and its impact in the country particularly in pregnancy because of the risk of transmission to the foetus. Treatment of infected mothers is therefore very essential because of the dangers of transmitting the disease to their babies. The study was carried out to determine the prevalence of HIV antibodies in maternal and cord blood from pregnant mothers who presented at the University of Port Harcourt Teaching Hospital, Port Harcourt for delivery of their babies. Venous blood was collected from a total of 103 mother and neonatal cord pair at delivery. The sera were analysed by double ELISA techniques for HIV-1 and HIV-2. Eight (7.8%) out of the 103 mothers tested positive for HIV-1 and none for HIV-2. Five out of the eight mothers had antibody positivity in their babies' cord blood, showing a transmission rate of 62.5%. All the mothers delivered per vagina. The study shows that mother to child transmission is high in the study area compared to the WHO rate of 30%. This underlines the importance of enforcing the prevention of mother to child transmission policy among HIV-infected mothers in the environment.

**Keywords:** HIV, mothers, cord blood, new born babies.

## INTRODUCTION

HIV/AIDS still remains a major public health challenge in many countries particularly in the Sub-Saharan Africa. An estimated 34-47 million people were infected with HIV/AIDS in 2006, with approximately 4.3 million of these being newly diagnosed infections (UNAIDS/WHO, 2006). A more recent report shows an estimated 36.7 million people are living with HIV/AIDS in 2014 globally with 70% (25.8 million) of this number living in sub-Saharan Africa (UNAIDS, 2015). HIV/AIDS increasingly accounts for a large proportion of mortality among children below five years in the heavily affected countries and also affect mainly adults in their most productive years of life (15-49years). (UNAIDS, 2001).

The impact of HIV/AIDS in Nigeria is profound and multifaceted ranging from healthcare, political and social instability but the greatest impact is on the economy because HIV/AIDS attacks people mostly in their productive years and in resource-limited countries it is usually fatal. HIV fosters and promotes poverty, destabilizes the family structure and takes a great toll on the nation's economy (Bollinger et al, 1999; Chijioke-Nwauche et al, 2014). The major effects on the economy are seen on the increased costs and reduction in labour supply.

Nigeria is ranked second in the number of people living with HIV/AIDS after South Africa and accounts for about 9% of the global HIV burden (UNGASS, 2010). Since the first report of HIV/AIDS in Nigeria in 1986, the number of people living with HIV/AIDS steadily increased and the epidemic became established with an increase of HIV-seroprevalence from 1.8% in 1991 to 5.8% ten years later in 2001 (FMOH, 2005, Nasdi and Harry et al, 2006).

However the trend changed from an increase to a gradual drop. The drop in prevalence has continued up to date with a recent prevalence of 3.0% (NACA, 2015). However, fourteen states out of the thirty six states in the country reported prevalence higher than the national prevalence of 3.0% with Rivers State on top of the ladder with a staggering prevalence of 15.2%.

Despite the drop in national prevalence, Nigeria still has the second highest burden of HIV/AIDS globally with an estimated 3,391,546 people living with HIV. Reports however indicate that there has been a decline in the incidence of new infections (NACA, 2015). The decline in new infections has been steady however ; the number

of new infections is still higher in the females than in the males with a 54.3% of the total new infections of which majority are among young women between the ages of 15-24 years<sup>9</sup>(NACA, 2015).

In Nigeria, about 80% of HIV transmission is through the heterosexual route<sup>6</sup>(UNGASS, 2010) while blood transfusion with a 10% rate accounts for the second largest source of HIV infection.<sup>10</sup>(FMOH, 2009). Another major route of transmission is the mother to child accounting for about 360,000 children with HIV. Mode of transmission model studies show that high risk groups men that have sex with men (MSM 1%) and female sex workers (FSW 23%) significantly contribute to new HIV infection (Nwauche et al, 2006; UNGASS, 2010). Prevalence of HIV/AIDS is highest in the age group 35-39years (4.4%) and lowest in 40-44years and 15-19 (2.9%) from the (NARHS 2012) data.

In settings as obtained in Nigeria, where heterosexual transmission is common, women are more likely to be affected in the epidemic thereby increasing the burden of mother to child transmission.

The natural anatomy of women and social factors make them more vulnerable to HIV/AIDS and thereby cause the women to bear the greater burden of the disease epidemic both as victims and primary caregivers for the afflicted one (USAID, 2006). This higher risk of increased burden invariably increases the risk of infection to babies through mother to child transmission.

The high prevalence of HIV in women of reproductive age has led to a growing population of HIV-infected and affected children. It is estimated that one HIV- positive child is born every five minutes, in Nigeria(Eneh, 2007).With the new infections being predominant among young women which is the age-bearing period, there is increased danger of transmission from mother to child and invariably an increase in prevalence among children. Over 90% of HIV infections among infants and young children occur through Mother to Child Transmission which is defined as the transmission of HIV from a HIV-positive mother to her child during pregnancy, labour, delivery or breastfeeding. The transmission rate can be as high as 15-45% where there is no intervention to prevent that whereas with evidence-based comprehensive intervention, the rate can be reduced to less than 2% (WHO, 2015, UNICEF, 2015).

Many factors increase the probability of transmission; these include lacerations during childbirth, prolonged labour, cervical examinations, vaginal deliveries and routine episiotomies. This intervention to prevent transmission is called prevention of mother to child transmission (PMTCT). The principles on which PMTCT is built is based on providing lifelong ART to all pregnant and breastfeeding women irrespective of their CD4 cell count or clinical stage of the infection especially during the transmission risk period. (UNICEF, 2015). Adherence to the established guidelines is the key to preventing mother to child transmission. The only way to reduce the mother to child transmission is to adhere strictly to these measures.

## METHODS

A descriptive prospective study to evaluate the prevalence of HIV antibodies among women; new mothers of the antenatal clinic of the University of Port Harcourt, Teaching Hospital, Port Harcourt was carried out. A total of 103 women in their immediate post-partum state in the labour ward of the Hospital, were randomly recruited into the study. Participants were enrolled into the study as they presented for antenatal clinic at the hospital. Informed consent was obtained from the mothers as well as their willingness to collect cord blood sample from their babies. Five millilitres (5mls) of blood was collected from each mother by venepuncture and 5mls of blood was collected from the umbilical cord stump of her corresponding baby. Sera extracted from the collected blood samples from mothers and cord blood of the babies were screened and analysed by double ELISA techniques for the presence of HIV 1 and 2 in the Haematology department of the hospital. All the mothers delivered per vagina. The study was conducted between October and December 2004.

## RESULTS

A total of 103 paired samples of mothers and their cord blood were used for the study. Analysis of the results shows that eight out of the total number of 103 mothers in their immediate post-partum state tested positive for HIV-1 and none for HIV-11, giving a prevalence of 7.8%. Five out of the eight mothers had antibody positivity in their babies giving a transmission from mother to child of 62.5%.

## DISCUSSION

This study was carried out among mothers in their immediate post-partum stage. All the mothers delivered per vagina. The results show a HIV prevalence rate of 7.8% among mothers in the present study while the rate of antibody transmission from mother to child is 62.5%. This is an alarming figure which is much higher than the 15-45% that could be expected in the absence of any intervention.(WHO, 2015) However, we cannot establish any statistical significant figure because of the very small sample size. Despite the very small sample size, the results

of the study is an indication for stricter adherence to PMTCT as well as the advocacy and enlightenment campaign.

Reports of the National Agency for control of AIDS, shows that there is about 100% (31,688-63,350) increase in the number of pregnant women that received ARV prophylaxis, the number of PMTCT sites increased from 690 to 6546 between 2009 and 2013. This is an encouraging trend in the war against transmission of HIV/AIDS however, PMTCT coverage still remains low at 30.3%, well below the desired target. Therefore efforts of strengthening the PMTCT program in Nigeria should be increased particularly in Rivers State which has the highest seroprevalence rate of 15%.(NACA, 2015)

Another important aspect of the HIV policy is strong advocacy and awareness for HIV testing and counseling (HTC). Reports show that only 23.5% males and 29.2% females tested for HIV in the year 2012 and out of these number, only 63% and 68% females received their results and have their status known (NACA, 2015). There was however an increase of about 64.7% in 2014 of the number of persons counseled, tested and received their results, as well as an increase in the number of HIV testing sites. Despite this increase, the number of persons that have accessed HTC still remains very small in comparison with the total population.

## CONCLUSION

The prevalence of HIV among the pregnant mothers in this present study is 7.8% while the transmission rate to their babies is 62.5%. This high transmission rate calls for urgent intervention by both government and non-governmental organizations. The study reveals the fact that PMTCT is not yet fully functional in the study environment as at the time of the study. The current high prevalence of HIV in Rivers State of 15%, (NACA, 2015) calls for a more diligent and consecutive study to ensure that the transmission rate of HIV-positive mothers to their babies is brought to the most minimal level. The study underlines the importance of health education and awareness especially among women of child bearing age in the study area to improve the preventive measures designed to reduce the spread and transmission of HIV. The findings of the study reflect the state of PMTCT in the study site as at the time of the study. A current study with a larger sample size is very imperative to evaluate the present situation.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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