

# Does screening of pregnant women prevent mother to child transmission of HIV?

## A study in nsukka urban area of Enugu State, Nigeria.

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### Abstract

**Background:** One of our best opportunities for progress against AIDS lies in preventing mothers from passing on the HIV virus to their children. Worldwide, close to 2,000 babies are infected with HIV every day, during pregnancy, birth or through breast feeding. Most of those infected will die before their fifth birthday. The ones who are not infected will grow up as orphans when their parents die of AIDS. New advances in medical treatment give us the ability to save many of these young lives. Hence, pregnancy provides a unique opportunity for implementing prevention strategies against HIV infection, through early intervention and possibly prevent the transfer from mother to child.. Hence this research, Does screening of pregnant women prevent mother to child transmission of HIV?

**Methods:** From January 2007 to June 2008, A total of 2956 pregnant women that registered for antenatal clinics in a missionary hospital in nsukka were counselled and tested for HIV virus. Rapid test method were used, three different kits was employed for the test. CD4+ count was done for the positive clients and subsequent recommend for appropriate ART treatment or prophylaxis.

**Results:** A total of 2956 pregnant women were recruited in the study. Twenty six (0.8%) pregnant women tested positive, out of these number eighteen (69.2%) of the positive candidates has CD4+ count  $\leq$  230 cells/ $\mu$ l . this were later placed on ARV prophylaxis till birth after proper adherence counselling.

**Conclusions:** The result show that statistics was significant, also the screening has provide an avenue to prevent the child from contacting the virus during labour or breastfeeding, the figure may look very small , but in HIV prevention a single life is very much important because through one person the virus can wipe a whole generation. the researcher therefore suggested that screening should be encourage for all pregnant women after due counselling.

**Keywords:** HIV Screening, prevention, PMTCT, pregnant women.

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### Introduction

Two decades have now rolled by, since the first case of AIDS was diagnosed in Nigeria in 1986. In that period, many individuals, families, communities, businesses and Nigeria at large has felt the devastation of the epidemic. There is no community or aspect of the nation that

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has not yet been affected. Nigeria's burden of care/epidemic now ranks third in the world. About 3.8 million people are estimated to be living with the virus in the country [1]. The epidemic has not shown signs of slowing down and the prevalence remains unacceptably high at 5.0%, as reflected by the 2005 adult sero-prevalence survey[2].

The global HIV/AIDS pandemic is a major public health problem. At present, there is no cure and most activities are aimed at reducing HIV transmission, voluntary counselling and testing (VCT) is one of the strategies employed in the effort to control the global HIV/AIDS pandemic [3]. Voluntary counselling and testing has been found to be effective in changing high risk behaviours and more than 40% reduction in unprotected intercourse among individuals who received VCT, compared to those who received health information only has been reported [4]. Unfortunately, the majority of Nigerians do not know their status and this proportion is highest in countries worst affected by the epidemic [5]. HIV/AIDS prevention and control strategies in addition to the encouragement of behavioural modification and provision of antiretroviral drugs are essential ingredients in the fight against HIV/AIDS. Strategies that are most appropriate are the early detection of the virus, reduction in casual sex, proper blood screening and prevention of mother to child transmission are much desired in pregnant women.

Pregnant women with HIV are at risk of transmitting HIV to their infants during pregnancy, birth, or breast feeding and without interventions between 20% and 45% of infants may become infected. Well over 90% of children under 15 years living with HIV are believed to have been infected through mother to child transmission [6]. Despite numerous statements of political commitment, a well-defined set of interventions and the know-how required to implement them, the vast majority of pregnant women in need of PMTCT services do not receive them, the latest data from the end of 2005 estimating that only 11% of infected pregnant women in Africa received antiretroviral prophylaxis for PMTCT [7]. Intrapartum single dose zidovudine to mother, and then to infant within 72 hours of birth, is the cornerstone of the PMTCT approach in much of Africa: it is 40% efficacious in preventing HIV transmission, easy to use, safe and cheap. Generally majority (90%) of HIV-positive children acquired the virus from their mother; 90% of infected children live in sub-Saharan Africa [7]. The rate of HIV-1 transmission from mother to child ranges from 25-40% in less developed countries, and from 15-40% in less developed countries, and from 15-25% in more developed countries [8]. Child could contact during pregnancy, delivery or breast-feeding.

Hence this research is to assess the important of screening pregnant women attending antenatal clinics to prevent mother to child transmission (PMTCT).

### **Materials and Methods**

In this cross-sectional study from January 2007 to June 2008, A total of 2956 pregnant women attending antenatal clinics in a missionary hospital Nsukka for medical services were counselled for HIV and testing. About 95 percent of all pregnant women referred to antenatal clinics, accepted to participate in this study. All the clients that agreed for the testing were properly counselled, and the technicalities in HIV follow up if any were eventually positive were clearly stated during counselled period, all the clients satisfied with the pre-testing counselling they were therefore refer to HCT centre in the same hospital where testing were conducted. Finger prick method were used for blood collection, this was done to all the pregnant women for HIV testing. Testing was performed using three different kits. The Stat pak and determine were used routinely. Double check gold was used for confirmation and also serve as a tire breaker. CD4+ count were done for the seropositive clients for possible placement on antiretroviral drug if any of them fall within the acceptable range for ART after complete drug adherence counselling and accept to start the medication.

### **Results**

A total of 2, 956 pregnant women attending antenatal clinics between January 2007 – June 2008 were enlisted and tested for HIV antibodies. Eighteen (18) cases found tested positive to all the two test kits used. CD4+ test was done for all the seropositive pregnant women and their range of CD4+ were obtained for possible placement on prophylaxis antiretroviral therapy.

### **Discussion**

Transmission of HIV infection from mother to child is a major concern for developed as well as developing countries [9]. In Nigeria with an estimated if 4.5% population with HIV, This call for all adults and the people with risk factor for screening pregnant women inclusive. From the study it is estimated that about 0.6% of the total pregnant women screened at the centre, only 18 were positive, out of this number 13 were eligible for ART prophylaxis according WHO standard. The importance of this early detection is to enable prompt attention and to put in place measure to safe guide the infant not to contact the virus during delivery or during breastfeeding. The WHO standard was that any pregnant women that are eligible should be placed on prophylaxis as well given a single dose of niverapine during

labour. The new born baby is also to be given niverapine within the first 72 hours follow by zidovuldine depending on the method feeding the mother adopt. Statistics has shown that most of the infant that are positive to HIV acquired the virus during birth [10]. Mother-to-child transmission is the leading cause of HIV infection in children. It remains a major public health problem worldwide, with the greatest burden in resource-poor settings. Infants and children with HIV are more likely to become ill and die shortly after birth [10]. PMTCT programs provide a package of services that ideally include: counseling and testing for pregnant women; short-course preventive ARV regimens to prevent mother-to-child transmission; counseling and support for safe infant feeding practices; family planning counseling or referral; and referral for long-term ART for the child. In addition, where possible, these programs serve as an entry point for full ART services for the entire family, thus protecting the family unit and preventing the tragedy of a generation of orphans [11].

One of our best opportunities for progress against AIDS lies in preventing mothers from passing on the HIV virus to their children. Worldwide, close to 2,000 babies are infected with HIV every day, during pregnancy, birth or through breast feeding. Most of those infected will die before their fifth birthday [12]. The ones who are not infected will grow up as orphans when their parents die of AIDS. New advances in medical treatment give us the ability to save many of these young lives. And we must, and we will, through this early detection such as in HCT.

Statistic has shown that in March 31, 2005, the Emergency Plan had provided support for counseling and testing of over 2 million pregnant women. As of the same date, Emergency Plan PMTCT efforts had provided support for short-course preventive ARVs for 198,400 HIV-positive pregnant women in the focus countries. The timely use of such ARVs decreases the likelihood of mother-to-child transmission [13]. While it is not possible to measure directly the number of paediatric infections averted with Emergency Plan support, it is possible to make estimates based on the number of women who have received a preventive ARV intervention [14]. An international consensus has developed on an algorithm to calculate the number of infections averted. In order to arrive at an estimate, a background transmission rate of 35% for all HIV-positive delivering mothers and a reduced transmission rate of 16% for mothers receiving short-course preventive ARVs were assumed, based on research on mother-to-child transmission in the developing world. The difference, 19%, was then applied to the number of women receiving preventive ARVs in the focus countries, yielding an estimate of 37,600 infections averted with Emergency Plan support for the fifteen african countries between 2002-2005 out of these number, Nigeria account for 776 [15].

The research here strongly suggested that all pregnant mothers should be advised to go for HIV screening, because this will help out reducing the transmission rate especially to the innocent infants. On the other hand, according to the American guidelines for screening of HIV and AIDS, pregnancy is an indication for HIV testing [16]. Studies have shown that in Iran Southeast, prevalence of HIV infection in total population is 0.02%, the study showed that HIV seroprevalence rate was 0.05% in pregnant women. In this situation, The author said, it is difficult to say, there is no indication for HIV testing on each pregnant women, he then suggested that HIV testing should be done if there is a history of a risk factor. Our study here in Nigeria especially in the research is carried it is very imperative to strongly recommended that every pregnant women should be advised to go for screening. Through this method transmission through mother to child could be seriously reduced and the spread, poverty and vulnerability of children will be reduced.

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