

Full Length Research Paper

Human immunodeficiency virus (HIV) seroprevalence and pregnancy outcome among obstetric population in Abakaliki, Southeast Nigeria

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Human immunodeficiency virus (HIV) infection has become a pandemic worldwide especially among the obstetric population where prevention of mother to child transmission (PMTCT) of the infection is still a major challenge. The objective of this study is to determine the prevalence of HIV seropositivity and pregnancy outcome among obstetric patients in Abakaliki, Southeast Nigeria. A retrospective review of all deliveries at the Federal Medical Centre (FMC), Abakaliki, Ebonyi State over a period of three years (January 2006 to December 2008) was done. The records of all HIV positive patients who delivered in the hospital were retrieved for detailed analysis. One thousand eight hundred and sixty six (1866) deliveries were conducted during the period. Of these, 94 patients were HIV positive giving a seroprevalence rate of 5.04%. Seventy percent were between 25 and 30 years. Majority (90%) had some form of education while 10% were illiterates. Most diagnoses (93.3%) were made in pregnancy, 73.3% received antiretroviral therapy and 86.7% delivered vaginally. Thirty percent of the babies were exclusively breastfed. Maternal mortality ratio was 3,300 per 100,000 births, while perinatal mortality was 67 per 1,000 for this group of patients. It is concluded that the seroprevalence rate is high with associated adverse maternal and perinatal outcome. Routine screening by the general populace is advocated, as most diagnoses were made during antenatal care. There is also need to educate our women on safe delivery and breastfeeding options.

Key words: Human immunodeficiency virus (HIV) seroprevalence, maternal outcome, perinatal outcome, Abakaliki, Southeast Nigeria.

INTRODUCTION

Since the first reported case of Acquired Immune Deficiency Syndrome (AIDS) in 1981, the Human Immunodeficiency Virus Infection (HIV)/AIDS has become a global pandemic (Johnson, 1992). In Nigeria, as is the case in most sub-Saharan African countries, available data suggest a rising incidence, as the national seroprevalence rate has increased from 1.8% in 1991 to 4.4% in 2005 (Federal Ministry of Health (FMOH), 2007). In 2007, it rose to 5.4% although it dropped slightly to 4.6% in 2009 (FMOH, 2009). The more significant mode of transmission in sub-Saharan Africa is heterosexual (Misiri et al., 2004). The other mode of transmission is the vertical or mother to child transmission (MTCT) which

may occur during pregnancy, labour/delivery and during breastfeeding (Moore et al., 2002).

The risk of mother to child transmission of HIV infection in pregnancy is still high in developing countries including Nigeria, where there are still deficient standards for care. In developing countries, there are still poor antenatal care, late diagnosis, lack of antiretroviral therapy, marked increase in viral load, poor or haphazard interventions for the prevention of mother to child transmission (PMTCT) of HIV. Without interventions, the risk of perinatal transmission in Sub-Saharan Africa ranges from 25 to 45%, and about three quarters of these occurs around the time of delivery (Segurado and Paiva, 2007; Mock et al., 1999; Basse et al., 2007). Adverse pregnancy outcomes that may occur in patients with HIV infection include high maternal and perinatal mortality, low birth weight, prematurity, spontaneous miscarriages, puerperal sepsis

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Table 1. Sociodemographic characteristics of patients.

| Variable | N | % |
|-------------------------|----|------|
| Age (years) | | |
| ≤5 | - | - |
| 16-20 | 8 | 13.3 |
| 21-24 | 8 | 13.3 |
| 25-29 | 22 | 36.7 |
| 30-34 | 20 | 33.3 |
| ≥5 | 2 | 3.3 |
| Occupation | | |
| Civil servant | 12 | 20 |
| Trader | 10 | 16.7 |
| Student | 10 | 16.7 |
| House wife | 8 | 13.3 |
| Farmer | 4 | 6.7 |
| Police officer | 4 | 6.7 |
| Not indicated | 12 | 20 |
| Education status | | |
| Illiteracy | 6 | 10 |
| Primary | 18 | 30 |
| Secondary | 22 | 36.7 |
| Tertiary | 14 | 23.3 |
| Post graduate | - | - |
| Parity | | |
| Primigravidae | 20 | 33.3 |
| 1-4 | 34 | 56.7 |
| ≥5 | 6 | 10 |

and neonatal sepsis (Mock et al., 1999; Bassey et al., 2007). These adverse outcomes occur more often where there are no interventions.

At the Federal Medical Centre, Abakaliki, no work has been done, to the best of our knowledge, to assess specific interventions for HIV positive pregnant women, and particularly their pregnancy outcomes. This study will attempt to address these issues.

MATERIALS AND METHODS

This was a retrospective descriptive study carried out at the Federal Medical Centre, Abakaliki, Southeast Nigeria from 1st January, 2006 to 31st December, 2008. Case notes of all patients that delivered during the period and were HIV seropositive were retrieved for detailed analysis. Information sought included their sociodemographic characteristics, parity, booking status, time of commencement of antiretroviral therapy, mode of delivery and infant feeding options, events in labour and maternal/perinatal outcome. The results obtained were analyzed using frequency tables and simple percentages. The Federal Medical Centre, Abakaliki is a tertiary health care facility situated on the

Table 2. Interventions in pregnancy.

| Variable | N | % |
|---|----|-------|
| GA (weeks) at diagnosis of HIV infection | | |
| Before pregnancy | 4 | 6.70 |
| ≤13 | - | - |
| 14-26 | 14 | 23.30 |
| 27-35 | 28 | 46.70 |
| ≥36 | 14 | 23.30 |
| Patients on antiretroviral therapy | | |
| Yes | 44 | 73.30 |
| No | 16 | 26.70 |
| Mode of delivery | | |
| Spontaneous vaginal delivery | 52 | 86.7 |
| Caesarean section | 8 | 13.3 |
| Infant feeding options | | |
| Exclusive breastfeeding | 18 | 30 |
| Artificial formula | 24 | 40 |
| Not indicated | 18 | 30 |

GA: Gestation age

Southeast Geopolitical Zone of Nigeria. It also serves as a referral centre for both government and private health care facilities within and outside the state. Most women register voluntarily for antenatal care in the centre, a process that is carried out weekly. The hospital is located in the Abakaliki Metropolis, the capital of Ebonyi State of Nigeria. The inhabitants of Abakaliki are mainly the Igbos and other migrant workers. Ebonyi State is one of five states in the Southeast geopolitical zone of Nigeria created in 1996 from the old Abakaliki division of Enugu State and old division of former Abia state. It has 13 local governments Areas. Ebonyi state with an estimated population of about 4.3 million, lies between 7° 3' N Longitude 5° 4' E with a land mass approximated at 5,932 square kilometers. The state has boundaries in the North with Benue State, East with Cross River, South with Abia state and West with Enugu State. About 75% of the populations dwell in the rural areas with farming as their major occupation.

RESULTS

There was a total of 1866 deliveries during the study period of which 94 patients were HIV positive giving a HIV seroprevalence of 5.04%. However only 60 case notes were suitable for analysis. 54 (90%) of the cases registered for antenatal care (booked) while 6 (10%) did not register (unbooked).

Table 1 shows the sociodemographic characteristics of HIV positive patients. HIV seropositivity was common among patients aged between 25 to 29 years representing 36.7%. Majority were civil servants, traders, students and housewives accounting for 66.7%. Ten percent of the patients did not have formal education while 23.3% had tertiary education. Forty patients (66.7%) were multiparae.

Table 2 shows some interventions during pregnancy.

Table 3. Events in labour.

| Variable | N | % |
|--|----|-------|
| Interval between rupture of membrane and delivery (h) | | |
| >4 | 6 | 11.50 |
| <4 | 46 | 88.50 |
| Administration of nevirapine prophylaxis | | |
| Mother | | |
| Yes | 42 | 70 |
| No | 18 | 30 |
| Baby | | |
| Yes | 46 | 76.70 |
| No | 14 | 23.30 |

Total N= 52

The diagnosis of HIV infection was made in 4 (6.7%) patients before pregnancy, while many of the diagnosis (46.7%) were made between 27 to 35 weeks gestation. Forty-four (73.3%) patients were on antiretroviral therapy. Fifty-two (86.7%) patients had spontaneous vaginal delivery while 8 (13.3%) had caesarean section. The common indication for caesarean section was to prevent vertical transmission of HIV infection. Twenty-four (40%) of the babies were fed with artificial formula while 18 (30%) were exclusively breastfed. Eighteen (30%) patients did not indicate their infant feeding option.

Table 3 shows events in labour. Fetal membranes rupture- to- delivery interval was more than 4 h in 6 (11.5%) patients and less than 4 h in 46 (88.5%) patients. Forty-two (70%) patients received a single dose of 200 mg nevirapine while 46 (76.7%) babies had a single dose of 2 mg/kg nevirapine within 72 h of birth. There were 2 maternal deaths due to post-partum haemorrhage and pre-eclampsia resulting in case fatality rate of 3.3% or maternal mortality ratio of 3,300 per 100,000 births for these group of women. There were also 4 perinatal deaths giving a case fatality rate of 6.7% or perinatal mortality ratio of 67 per 1000.

DISCUSSION

The HIV/AIDS pandemic is the most serious health crisis in the world today (Mock et al., 1999). The prevalence rate of 5.04% among pregnant women in this study is higher than the National prevalence rate of 4.6% (FMOH, 2009) and also higher than those reported from other centres in Nigeria (Basse et al., 2007; Fawole et al., 2002; Ojukwu and Ibekwe, 2005; Ikechebelu and Udigwe, 2006). It is also much higher than those reported from the developed countries (Guay and Miiro, 1990; Lehtovirta et al., 2005). However, the prevalence is lower than that reported from the Eastern and Southern parts of

Africa (Hasnain, 2004; Guay and Miiro, 1990). This prevalence rate may not be a true representation, as many of the women in our environment do not book for antenatal care; they prefer to deliver in church and homes of traditional birth attendants. The most recent National HIV sentinel survey showed that the HIV seroprevalence rate in the state is 2.8 (PMTCT, Nigeria, 2007), a lower figure when compared to the prevalence in this study. The referral nature of the hospital may account for this.

Majority of the patients were multiparous and between the age ranges of 25 to 34 years which also form the bulk of the reproductive age group of average Nigerian women (Ojukwu and Ibekwe, 2005). HIV infection cuts across educational barriers, as ninety percent of the patients in this study had some form of formal education. Some studies have revealed that African women of child bearing age are particularly vulnerable to HIV infection as a result of their lifestyle, and this led to an increase in the number of paediatric HIV infections resulting from MTCT (Akani et al., 2005).

The diagnosis of HIV was made in the antenatal clinic (ANC) in majority of the patients. Routine HIV screening after counseling with the right to opt out during ANC may have contributed to this finding, especially in developing country like Nigeria where ANC setting is a major source of healthcare for women of child bearing age. It is suggested that routine screening outside pregnancy should be encouraged to help prepare them well for pregnancy or even help them take decisions about their future reproductive carriers.

Majority of the patients had antiretroviral therapy while their babies had single dose nevirapine within 72 h of delivery. This may probably be due to free antiretroviral drug in the hospital. Several clinical trials have documented the efficacy of antiretroviral drugs in reducing perinatal transmission of HIV (Connor et al., 1994; Wiltor et al., 1999; Guay et al., 1999). Currently, the Nigerian

National guidelines on PMTCT recommends highly active antiretroviral therapy (HAART) as standard of care for treatment of maternal HIV infection and prevention of mother to child transmission of HIV. All HIV positive pregnancy women receive prophylactic ART irrespective of CD4 count, viral load or clinical stage of the disease. All HIV exposed infants must receive daily nevirapine for 6 weeks irrespective of infant practice. It is sad that 16 (26.7%) patients did not receive antiretroviral therapy. This may probably be due to ignorance and stigmatization that are prevalent in our environment. Poor documentation in the case notes of patients could also be a contributory factor. Some Nigerian studies have shown that poor record keeping is still rife in some of our hospital (Ameh and Shehu, 2002). Fear of ostracization and stigmatization by health staff may contribute to the HIV patient declining to declare their status and/or delivering in homes of traditional birth attendance or church. Most patients (86.7%) delivered vaginally. This is not surprising as there is serious aversion to caesarean section in this part of Nigeria.

It was noted that 24 (40%) patients chose artificial formula as infant feeding option despite the high cost especially in our environment. Several studies reveal that only a minor percentage of women breastfeed exclusively (Egbonu et al., 2004) as shown in this study where 30% chose to breastfeed exclusively.

This study has shown that the prevalence of HIV infection among women who deliver in our centre is high and the antenatal clinic is the most important setting for diagnosis of HIV and the commencement of PMTCT intervention strategies. Encouraging our women to avail themselves of early registration for antenatal care, regular clinic attendance and compliance to antiretroviral drugs, and hospital delivery with strict compliance to safe delivery options are areas that need emphasis.

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