HIV in Pregnancy: Experience at Abeokuta, Nigeria.

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Abstract

Background: *The human immunodeficiency virus (HIV) pandemic remains a major threat to public health. Measures to minimize mother to child transfusion remain a major focus of research.*

Objectives: *To determine the prevalence of HIV in pregnancy in our obstetric clinic population and evaluate the effects of HIV infection on the course and outcome of pregnancy.*

Materials & Methods: *A case-control study of all HIV-positive pregnant women who delivered at the Federal Medical Centre, Abeokuta between January, 1997 and June, 2000. Selected characteristics including age, parity, gestational age at booking, weight gain in pregnancy, duration of pregnancy and the infants' characteristics were compared between seropositive and negative women.*

Results: *Sixteen women had HIV infection among a total of 2,442 women booked during the study period. The prevalence of HIV infection in pregnancy was 0.7%. Following diagnosis, eight of the HIV positive women defaulted from ante-natal care None opted for anti-retroviral therapy. There were no statistically significant differences in the haematocrit at booking (p=0.9), the weight gain in pregnancy (p=0.2), birth-weights between the two groups. All the women had vaginal deliveries. There were significant differences in the infants' Apgar scores and perinatal mortality rates were higher in the HIV positive group. All the mothers chose to breastfeed their infants.*

Conclusion: *HIV infection in this population is associated with birth asphyxia and a high perinatal mortality rate. The survivors are also at great risk of vertical transmission during breast-feeding.*

Key Words: HIV, Pregnancy, Vertical Transmission, Birth Asphyxia. [Trop J Obstet Gynaecol, 2002, 19: 00-00].

Introduction

Of all the complications of pregnancy, HIV infection during pregnancy is currently the most topical. It is attracting attention and interest for epidemiological and obstetric reasons. HIV screening of the antenatal population has constituted the bulk of HIV sentinel surveillance in Nigeria. Seroprevalence in this group is presumed to reflect the picture in the general population [1,2]. This assumption is supported by available data that show almost half of the thirty-three million people living with HIV are women in their reproductive years [3]. In recent years, the HIV pandemic has become a public health issue of global significance. The developing world contributes the majority of affected people. Two-thirds of infected adults and over ninety percent of the world's HIV-infected children are Africans [4]. Against this background comes the alarming report that serial sentinel surveillance in Nigeria indicates an increasing trend in the prevalence of the infection.

During pregnancy, HIV infection poses greater challenges with regard to pregnancy complications, management and mother-to-child transmission. Some adverse outcomes associated with HIV infection in pregnancy include spontaneous abortion, low birth weight and stillbirth; and vertical transmission is implicated in over 90% of infections in children [4].

This paper compares the course and outcome of pregnancy in HIV positive women with sero-negative women managed in a Nigerian tertiary health institution. The constraints to management, and their obstetric and public health implications are discussed.

Materials and Methods

This is a retrospective case-control study. The medical records of all HIV positive women booked and delivered at the Federal Medical Centre, Abeokuta between January 1, 1997 and June, 2000 were retrieved. This constituted the study group. Two HIV negative women, matched for age and parity were selected as controls for each HIV positive woman who delivered. The birth register served as the sampling frame.

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For every HIV infected woman who delivered, one HIV negative woman of comparable age and parity was selected above and below her so that there were two controls for each case.

All booked women were managed according to the unit's policy on HIV antenatal testing. They all had an HIV testing at the booking visit. Unbooked women also had HIV testing at presentation. Prior to testing, the women had group counselling during the health talk, and individually at the initial consultation. Blood samples were screened by the ELISA technique. Confirmation of diagnosis was either by repeat ELISA or Western Blot. The results of women who tested positive were communicated to the managing obstetrician ensuring strict confidentiality. The women were given post-test counselling with emphasis on HIV testing for the male partner, safe sexual practices, anti-retroviral therapy, mode of delivery and infant's nutrition.

Selected variables recorded for comparison between infected and uninfected patients in the present study included the women's age, parity, gestational age at booking, weight, intra-partum and post-partum events. The status of the infant, Apgar score and birth weight were also recorded.

Data entry was done using dBase IV software [5] and statistical analysis done with SAS (1988) software [6]. The student's *t*-test was employed to compare means.

Results

Two thousand four hundred and forty-two women were booked in the unit during the study period. Sixteen women tested positive for HIV in the same period, giving an HIV seropositive prevalence rate of 0.7%. Following diagnosis of HIV infection, eight (50%) of the infected women defaulted from antenatal care. The remaining eight HIV positive women who delivered during the period under review constituted the study group. They were matched with sixteen HIV negative women who served as the control group. All women in both groups were married. None of the HIV positive women requested for a termination of pregnancy. None of the affected women could afford the cost of anti-retroviral therapy.

The characteristics of the HIV positive and HIV negative women are compared in Table 1. There were no statistically significant differences between the two groups in their mean age and the mean number of living children. Though HIV positive women tended to book earlier compared with HIV negative women, but this difference was not statistically significant. The HIV positive women also gained less weight during pregnancy. The differences in weight gain did not however reach levels of statistical significance. The mean gestational age at delivery was similar in both groups. The mean interval between membrane rupture and delivery was significantly shorter in HIV positive women.

Table 1

Obstetric Characteristics of the Patients

	HIV +ve Mean (SD) N = 8	**HIV –ve** Mean (SD) N =16	*p*
Mean Age (years)	27.6 (4.7)	29.4 (6.2)	NS
Mean Number of Living Children	2.1 (1.5)	2.6 (1.0)	NS
Mean GA at Booking (weeks)	22.3 (9.7)	25.9 (6.4)	NS
Mean Weight Gain (kg)	3.2 (2.9)	4.8 (6.4)	NS
Mean GA at Delivery (weeks)	38.8 (1.5)	38.6 (1.8)	NS
Mean Membrane Rupture -Delivery Interval (hours)	5.8 (7.9)	21.4 (21.6)	0.01
Mean Apgar Score at 1 Minute	3.8 (3.8)	6.5 (2.2)	0.04
Mean Apgar Score at 5 Minutes	4.9 (4.9)	8.9 (2.5)	0.01
Mean Birthweight (kg)	2.9 (0.4)	2.9 (0.5)	NS
Mean Post-Partum Hospitalization (days)	2.7 (1.1)	2.9 (1.7)	NS
Perinatal Mortality	200 per 1000	0	

NS: Not statistically significant.
GA: Gestational age

The infants of HIV positive women were at a higher risk of birth asphyxia. The infants of HIV positive women had significantly lower mean Apgar scores at I minute and 5 minutes, compared to infants of HIV negative women. The mean birthweights were similar in both groups. The haematocrit at booking was not significantly different between the two groups (Table 2). HIV did not appear to predispose to complications during pregnancy. The reported complications in the HIV positive women were one case each of pregnancy induced hypertension and urinary tract infection. Pregnancy induced hypertension in one woman was the only other complication reported in HIV negative women.

All women in the control group had spontaneous vaginal deliveries. One of the HIV positive women had an emergency caesarean section; all other HIV positive women had normal deliveries. There was no

operative vaginal delivery in either group. One of the eight HIV infected women delivered a set of twins. Episiotomy was performed in 56.3% of HIV negative women and in 47.1% HIV positive women. There was a macerated stillbirth and an early neonatal death in the HIV positive group.

Table 2

Haematocrit Values in the Patients

Haematocrit (%)	HIV +ve Number N = 8	HIV –ve Number N =16	*p*
< 25	2	5	
26-29	4	3	
> 30	2	8	
Mean (SD)	28.8 (8.2)	29.2 (5.0)	0.9

The perinatal mortality rate in the study group was thus 200 per 1000 births. There was no perinatal mortality in the control group. There was no significant difference in the average length of post-partum hospitalisation. All the HIV positive mothers opted to breastfeed their babies. Only two of the spouses of HIV positive women presented for counseling and testing. Both were seronegative.

Discussion

Serial HIV sentinel surveillance reports indicate an increasing trend in Nigeria. Available data for major urban areas show a national range of between 2.7% and 8.0% with a median of 4.5% [7]. Seropositivity prevalence of 0.7% found in this study portrays the population as having one of the least prevalence rates in the country. However, given the evidence that prevalence among pregnant women may fall below the level in the general population by a factor of 0.75 [8], there is the possibility of higher rates in the general population. Following the diagnosis of HIV infection in pregnancy, half of the women defaulted from antenatal care. This is probably attributable to the stigma and discrimination associated with the condition.

Whereas HIV infection is reported to have minimal effect on pregnancy outcome in developed countries [9,10], adverse pregnancy outcomes have been reported from Africa [11,12]. Higher rates of spontaneous abortion and ectopic pregnancy have been documented in HIV positive women [4]. Premature delivery, though not shown to be more common in HIV positive women in the current study, had been shown to be high in previous reports [11,13]. The small sample size of the present study may be responsible for not finding such a trend. Findings in this study also do not support the higher incidence of low birth weight among HIV positive women reported from other African countries [14,15]. The observed incidence of stillbirth is supported by the reported increased stillbirth rates [11].

The high perinatal mortality associated with HIV infection deserves further investigation. The higher incidence of birth asphyxia among infants of HIV positive women may be iatrogenic. Mother to child transmission will be presumably high in this cohort of patients, given the exposure to all the risk factors viz prolonged membrane rupture (> 4 hours), vaginal delivery and prolonged breastfeeding. In the circumstance, the rationale of antenatal HIV testing becomes questionable, moreso since the current focus with respect to antenatal testing is on the potential benefit for the individual woman [16]. This study has certainly highlighted more disadvantages than advantages associated with the testing: high default rates, higher predisposition to birth asphyxia and perinatal mortality. This observation confirms the initial criticism of antenatal testing as stigmatising the women without leading to implementation of appropriate health strategies [17].

Some of the benefits of testing, including modification of sexual habits and anti-retroviral therapy, were not seen in this group of patients. Only two of the patients' spouses were counselled and/or tested. Knowledge of a patient's HIV status may unfortunately produce a false sense of security in the attending health care workers.

From the foregoing, though the seroprevalence may still be low in the population, an explosion of the problem is foreseen in the next few years unless urgent measures are taken. It is noteworthy that decreasing prevalence among pregnant women has been reported in communities where behaviour change has been associated with aggressive AIDS education campaigns [18].

We do not advocate abandonment of antenatal testing. However, it can only impact positively when social and financial support are mobilised for the affected women Very importantly, there is an urgent need for collaborative effort in AIDS research in our population in relation to surveillance, community involvement, provision of affordable therapy and active government commitment. In a poor resource setting such as ours, alternative low cost strategies require urgent consideration. Suggested options include vitamin supplementation, behaviour modification, birth canal cleansing and modification of infant feeding practices, including avoidance of breastfeeding or heat treatment of expressed breast milk [4]. The introduction of update workshops and the

use of universal precautions in all cases should receive urgent attention with a view to reducing nosocomial infections. Overall, the AIDS pandemic is a disaster waiting to explode in our population. Aggressive public health education campaigns, combined with bold policies, are urgently needed to contain its rapid spread.

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