

PREGNANCY OUTCOME IN HIV SEROPOSITIVE WOMEN IN ABAKALIKI, NIGERIA

By

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SUMMARY

Objective: To study the seroprevalence and the effect of HIV infection on pregnancy outcome.

Methods: From January 2000 to December 2004, 231 HIV seropositive women and 200 HIV seronegative matched groups from Abakaliki, Nigeria were recruited into a prospective study and followed until delivery.

Results: The HIV seroprevalence was 5.4%. All the HIV seropositive women were asymptomatic and 12.7% (n=30) defaulted (including 80% of previously diagnosed cases) during the antenatal clinic follow-up and were excluded from further analysis. Majority (52.5%) of the seropositive women were at the peak (20-29 years) of their reproductive years and women of low parity were commonly affected. The seropositive women are significantly more likely than control to have recurrent vulvovaginitis, positive syphilis serology, perineal tear, postpartum haemorrhage, puerperal infection, birth asphyxia and increased perinatal mortality ($P<0.05$). There was no difference in the incidence of low birth weight and congenital abnormality ($P>0.05$) in both groups. Delay in management contributed to maternal morbidity and perinatal mortality among the HIV seropositive mothers. Only six (2.9%) of the mothers and none of babies had antiretroviral therapy because of irregular supply in the hospital.

Conclusion: There is need for the Obstetrician to ensure proper management of HIV seropositive mothers and for government to make the subsidized antiretroviral drugs widely available so as to reduce mother to child transmission of HIV virus.

Key Words: HIV, Pregnancy, Outcome.

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INTRODUCTION

In recent years, the HIV epidemic has become a public health issue of global significance. This condition, although preventable has generated a lot of worries and anxiety because it has no cure yet. In Nigeria, with adult HIV prevalence of 5.8 percent¹, there is need to keep the epidemic in check so as not to worsen the socioeconomic problems of the country.

As more women of childbearing age are being infected with HIV, the Obstetricians need to improve their knowledge of the infection so as to play their role in the management of these HIV seropositive patients. Child bearing in these HIV seropositive women is a major concern due to the effect of HIV on the mother as well as mother-to-child transmission. Some studies^{2,3,4,5} have associated HIV seropositivity in pregnancy with higher rates of spontaneous abortion, stillbirth, sexually transmitted diseases, medical complications and low birth weight. However, other studies^{6,7} found no difference between the HIV seropositive and seronegative women in terms of adverse pregnancy outcome.

This paper examines the prevalence of HIV in pregnancy, socio-demographic factors and pregnancy outcome among HIV positive women and compared them with the findings among seronegative matched group.

MATERIALS AND METHODS

This study was carried out at Federal Medical Centre Abakaliki, Ebonyi state, Southeast Nigeria between January 2000 and December 2004. This is one of the two tertiary institutions in the state and serves Abakaliki and environs. From January 2000 the Obstetrics and Gynaecology department of the hospital has been offering routine, confidential HIV testing

to all pregnant women presenting to the hospital, after counselling. It is the hospital policy to administer Antiretroviral Therapy to women in labour and their babies within 72 hours of delivery in order to reduce mother to child transmission of HIV. Also, decision to commence Antiretroviral Therapy during pregnancy is done in conjunction with the physician based on the CD4 cell count. However, commencement of the drug is dependent on the ability of the patient to provide them because they are occasionally not available in the hospital pharmacy. The Antiretroviral syrup for the babies is only available in Federal Government designated hospitals and only made available for babies delivered in such hospitals.

The subjects of this study consisted of all pregnant women who registered for prenatal care as well as unbooked emergency cases with a confirmed HIV positive diagnosis before pregnancy or in the index pregnancy. "Unbooked" in this case are pregnant women who did not register for antenatal care in our hospital. For the 'unbooked' mothers, history of pregnancy complications was obtained from them on presentation. Within the study period 231 newly diagnosed HIV seropositive pregnant women and 5 old cases from the prenatal clinic of the hospital were recruited into the study. We took as control 200 pregnant HIV seronegative women matched for age, educational level, parity and social class with the HIV seropositive mothers, each registering for prenatal care immediately after a pregnant HIV seropositive mother. Both groups were followed up until delivery. Information was collected on the patients' socio-demographic characteristics, antenatal attendance, various pregnancy outcomes including mode of delivery, foetal weight, perinatal

and maternal complications. The various variables were compared between the two groups.

The results are expressed as percentages; mean \pm standard deviation. The student 't' and chi-square were used as appropriate to test the level of significance in the differences observed between the two groups. A P-value of <0.05 was taken as significant. Data analysis was done with Graph Pad Prism software.

RESULTS

Of the 4260 pregnant women seen during the study period, there were 231 new and 5 previously diagnosed HIV seropositive cases, giving a prevalence of 5.4%. Thirty (12.7%) of these HIV seropositive pregnant women (including 4 of the previously diagnosed cases) defaulted in antenatal clinic follow-up and did not deliver in the hospital. The remaining 206 seropositive women were followed up until delivery and the outcome of their pregnancy analysed.

The socio-demographic characteristics of these HIV positive pregnant women as well as those of control are shown in table 1. The age range 20-29 years constituted majority (53.4%) of HIV positive women. They were mostly (n=201) Christians and 92.2% (n=190) of them were married. Twelve percent of them had no formal education, while 15%, 48.1% and 24.8% had primary, secondary and tertiary education respectively. They were of mixed socioeconomic class and women of low parity (0-1) were in the majority. There were a total of eleven (11) 'unbooked' HIV seropositive mothers.

Table 2 showed that these HIV positive pregnant women are significantly more likely than control to have recurrent vulvovaginitis (41.7% Vs 9.0%; $P<0.0001$), positive syphilis serology (15.5% Vs 2.0%; $P<0.0001$), perineal tear

(7.8% Vs 1.5%; $P<0.05$), postpartum haemorrhage (10.2% Vs 3.0%; $P<0.05$) and puerperal infections (12.6% Vs 2.0%; $P<0.0001$). There was statistically significant difference in the mean duration of hospital stay between the HIV positive mothers and control that had normal delivery ($P<0.0001$) but no difference in both groups that had caesarean section ($P>0.05$).

The perinatal complications are highlighted in table 3. The infants of HIV seropositive mothers are at higher risk than control of some adverse perinatal outcome including birth asphyxia (12.1% Vs 4.0%; $P<0.05$), admission to Newborn Special Care Unit (14.1% Vs 3.5%; $P<0.05$) and increased perinatal mortality (5.3% Vs 1.0%; $P<0.05$). There was however, no significant difference in incidence of low birth weight or frequency of congenital abnormality ($P>0.05$). None of the seropositive mothers was on antiretroviral therapy throughout pregnancy, but six (6) of them received antiretroviral (Nevirapine) therapy intrapartum. The babies did not receive antiretroviral syrup in the immediate postpartum period.

DISCUSSION

The HIV seropositivity prevalence of 5.4 percent found in this study is within the adult HIV prevalence in Nigeria¹. The epidemic, which has extended beyond the commonly classified 'high risk' groups, has substantial impact on the social and economic development of the country. The implication of this is that provision of medical care for seropositive pregnant women will become a significant part of the obstetricians work and cost of management will constitute an additional burden on the lean economy of these patients.

Following the diagnosis of HIV infection in pregnancy, 12.7 percent of the women defaulted in antenatal clinic follow up. Significantly, almost all (80%) previously diagnosed cases defaulted. Fear of stigma and societal discrimination⁸ may be a factor in this regard. The issue of default from antenatal care by HIV positive mothers is a major problem as the unborn baby and the seropositive mother will not benefit from proper care and the necessary counselling. Most of them that defaulted will invariably present in labour elsewhere as unbooked cases in attempt to conceal their HIV seropositive status. This exposes the health workers to occupational hazard especially where universal precautions are not applied on all patients. The fact that HIV/AIDS affect people at the peak of productive and reproductive years is well demonstrated in this study. By decreasing the size of the workforce, it increases the cost of achieving set developmental goals because the work output of persons living with HIV/AIDS is bound to diminish as the disease progresses.

The seropositive mothers in this study were significantly more likely to have recurrent vulvovaginitis, positive syphilis serology, perineal tear, postpartum haemorrhage and puerperal infections as previous studies^{5, 9} have highlighted. Although most pregnant women with HIV are asymptomatic, study⁷ has shown that progression of disease including development of opportunistic infections may occur during gestation and that serious bacterial infections follows with CD4 count of less than 300 cells/mm³. It is instructive to note that some of the perineal tear and subsequent postpartum haemorrhage in this study could have been averted as they occurred while extra precautionary protective measures were being applied. Also delay in management

decision on seropositive patients especially where such decisions might increase risk of exposure to the health worker further increased maternal morbidity. The difference observed in the two groups in terms of hospital stay for normal delivery was partly because of increased maternal morbidity and partly because of time it takes on counselling the mother on baby care and proper initiation of artificial feeding with infant formula. Although elective caesarean section was the recommended mode of delivery for most seropositive women in a large survey in England¹⁰, all the seropositive women in this study had caesarean section for purely obstetric indication. The aversion for caesarean section in our environment¹¹ and the cost will definitely make it unpopular as a means of reducing mother-to-child transmission in our environment.

Contrary to previous report¹², there was no significant difference in birth weight in the two groups. The high perinatal mortality noted among infants of seropositive mothers was attributable to higher incidence of birth asphyxia, which often may be iatrogenic. This necessitated their admission into Newborn Special Care Unit.

In conclusion, the occurrence of HIV/AIDS in pregnancy in our environment is becoming a public health problem and the role of the Obstetricians is to ensure proper management of these seropositive patients, reduce foeto-maternal complications, mother-to-child transmission and above all ensure that all health care workers adopt universal precaution to minimize the risk of occupational transmission of HIV. Also, there is need for government to make the subsidized antiretroviral drugs available in all hospitals.

REFERENCES

1. 2000 Sentinel Seroprevalence Surveillance Report. National AID/HIV/STD Control programme. Federal Ministry of Health and Social Services, Nigeria.2001
2. De-Cock K.M, Zadi F, Adjorlolo G, et al. Retrospective study of maternal HIV-1 and HIV-2 infections and child survival in Abidjan, Cote d' Ivoire. *BMJ* 1994; 308 (6926): 441-443.
3. Braddick M.R, Kreiss J.K, Embree J.B, et al. Impact of maternal HIV infection on obstetrical and early neonatal outcome. *AIDS* 1990; 4(10): 1001-1005.
4. Minkoff H.L, Henderson C, Mendez H, et al. Pregnancy outcome among mothers infected with human immunodeficiency virus and uninfected control subjects. *Am. J. Obstet. Gynecol* 1990; 163(5 pt 1): 1598-1604.
5. Chamiso D. Pregnancy outcome in HIV-1 positive women in Gandhi Memorial Hospital Addis Ababa, Ethiopia. *East Afr. Med. J.* 1996; 73(12): 805-809.
6. Kumar R.M, Uduman S.A, Khurranna A.K. Impact of maternal HIV-1 infection on perinatal outcome. *Int. J. Gynaecol. Obstet.* 1995; 49(2): 137-143.
7. Dinsmoor M.J. HIV infection and pregnancy. *Clin. Perinatol.* 1994; 21(1): 85-94.
8. Obi S.N, Ezeonu P.O, Ezegwui H.U. Level of HIV/AIDS awareness, the attitude and acceptability of HIV Screening among pregnant women in Abakaliki, Nigeria. *Orient J. Med.* 2002; 14(1-4): 9-12
9. Leroy V. Ladner J, Nyiraziraje M, et al. Effect of HIV-1 infection on pregnancy outcome in women in Kigali, Rwanda, 1992-1994. *AIDS* 1998; 12(6): 643-650.
10. Brook M.G, Taylor G.P, Dale A, et al. Management of HIV and pregnancy in England's North Thames Region 1999: a survey of practice of 21 hospitals. *HIV Med.* 2000; 1(3): 143-148.
11. Ezechi O.C, Fasubaa O.B, Kalu B.E.K, et al. Caesarean Section: Why the Aversion? *Trop. J. Obstet. Gynaecol.* 2004; 21(2): 164-167.
12. Temmerman M, Chomba E.N, Ndinya-Achola J, et al. Maternal human immunodeficiency virus-1 infection and pregnancy outcome. *Obstet. Gynecol.* 1994; 83(4): 495-501.
13. Oyedeji G.A. Socioeconomic and cultural background of hospitalized children in Ilesha. *Nig. J. Paediatr.* 1985; 12: 111-117.

Table 1
SOCIO-DEMOGRAPHIC CHARACTERISTICS OF HIV POSITIVE MOTHERS AND CONTROL

AGE (years)	HIV positive (n=206)		HIV negative (n=200)	
	No.	(%)	No.	(%)
<20	8	3.9	10	5.0
20-29	110	53.4	105	52.5
30-39	74	35.9	70	35.0
40-49	14	6.8	15	7.5
PARITY				
0-1	80	38.8	75	37.5
2-3	50	24.3	45	22.5
4-5	42	20.4	40	20.0
≥6	34	16.5	40	20.0
EDUCATIONAL STATUS				
None	25	12.1	20	10.0
Primary	31	15.0	28	14.0
Secondary	99	48.1	100	50.0
Tertiary	51	24.8	52	26.0
SOCIAL CLASS¹³				
I	48	23.3	44	22.0
II	50	24.3	46	23.0
III	36	17.5	38	19.0
IV	42	20.4	44	22.0
V	30	14.6	28	14.0

Table 2
MATERNAL COMPLICATIONS

PARAMETER	HIV POSITIVE (%)	HIV NEGATIVE (%)	X ² /t-test	P-value
Recurrent vulvovaginitis	86 (41.7)	18 (9.0)	57.11	<0.0001
Positive syphilis serology	32 (15.5)	4 (2.0)	23.0	<0.0001
Spontaneous abortion	11 (5.3)	7 (3.5)	0.81	0.3679
Perineal tear	16 (7.8)	3 (1.5)	8.94	0.0025
Blood loss (>500ml)	21 (10.2)	6 (3.0)	8.46	0.0036
Puerperal infection	26 (12.6)	4 (2.0)	16.73	<0.0001
Hospital Stay in Days (mean ±SD)				
Caesarean section	10 (±2.3)	9.8 (±1.5)	1.041	0.2987
Vaginal delivery	4.2 (±1.5)	3.0 (±1.0)	9.510	<0.0001

Table 3
PERINATAL COMPLICATIONS

PARAMETER	HIV POSITIVE (%)	HIV NEGATIVE (%)	X ² /t-test	P-value
Birth asphyxia	25 (12.1)	8 (4.0)	8.995	0.0027
Low birth weight (<2500g)	32 (15.5)	20 (10.0)	2.783	0.0933
Admission into neonatal unit	29 (14.1)	7 (3.5)	14.050	0.0002
Congenital abnormality	2 (0.9)	1 (0.5)	0.306	0.5797
Perinatal mortality	11 (5.3)	2 (1.0)	6.166	0.0130

Editor's Comments: We are grateful to Dr. Samuel Obi for the frankness of this article and the courage he demonstrated in reporting his findings. This article demonstrates vividly the travails of the HIV seropositive pregnant women, not only at Federal Medical Centre, Abakaliki, but probably at numerous other maternities in this country and the world at large. Some of the maternal complications – perineal tear and blood loss- and some of the perinatal complications (birth asphyxia) suggest that the women and their newborn babies did not receive the best obstetric care possible at this centre during delivery. Ostensibly this is as a result of the “extra precautionary protective measures applied” to limit the risk of exposing the health workers (and possibly other patients) to HIV infection. There are ethical issues involved here and these need to be thoroughly examined by the management of obstetric units, with a view to improving the quality and quantity of care extended to HIV seropositive pregnant women. What are the options available to these units' managements and what are the hopes of this group of pregnant women? There seem to be no simple solutions to these problems. Readers' comments on this article and this issue are welcome.