

Sero-Epidemiology of HIV Infection among Abandoned Babies in Port Harcourt, Nigeria

¹C. I. Akani and ²O. Erhabor

Departments of ¹Obstetrics and Gynaecology, and ²Haematology, University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria

Reprint requests to: O. Erhabor, Department of Haematology, University of Port Harcourt Teaching Hospital, P. M. B. 6173 Port Harcourt, Nigeria. E-mail: n_osaro@yahoo.com

Abstract

Background: HIV infection is endemic in Nigeria and is an important cause of infant mortality and morbidity. This study was undertaken to determine the sero-epidemiology of HIV among abandoned babies in Port Harcourt, Nigeria.

Methods: One hundred and forty (n = 140) consecutively recruited abandoned babies mean age 11.5 ± 24.1 weeks made up to 79 males and 61 females, referred to the HIV screening unit from motherless babies home in Port Harcourt for pre-adoption HIV screening within a five years period (1999 – 2003) were screened for HIV using the WHO approved immunocomb HIV I & II kits (Organics, Israel) – an enzyme linked immunosorbent assay for the quantitative and differential diagnosis of HIV in serum or plasma. Initially reactive samples were continued using Genscreen HIV 1 & 2 (p24) antigen test (Bro Rad, France).

Results: HIV was detected in 19(13.6%) of babies tested. Sero-prevalence was highest in babies 9 – 16 weeks (25.0%). Males accounted for the highest infection burden (57.9%) compared to (42.1%) for females. Data indicated that the prevalence of HIV declined from 12.5% in 1999 to 8.3% in 2000 and increased subsequently to 20% in 2001 but declined steadily to 16.1% in 2002 and 14.3% in 2003. HIV-1 accounted for the predominant viral subtype among babies sero-positive for HIV (89.5%). Chi square analysis indicates that symptom at abandonment was an independent risk factor for HIV infection among abandoned babies ($\chi^2 = 40.97$; p = 0.0001).

Conclusions: This study demonstrates a high prevalence of HIV among abandoned babies in Port Harcourt. This calls for an urgent need for government, non governmental organization and faith-based organization to critically examine the issue of child abandonment and HIV infection by initiating care and support programme aimed at providing knowledge and information which emphasizes a combination of behavioural and social changes and providing a youth-friendly health services to control the HIV scourge.

Key words: Sero-epidemiology, HIV, abandoned babies, Port Harcourt

Résumé

Fond: L'infection de VIH est endémique au Nigéria et elle est une cause importante de la mortalité et de la morbidité infantiles. Cette étude a été entreprise pour déterminer la séro-épidémiologie de VIH parmi les bébés abandonnés à Port Harcourt, Nigéria.

Méthodes : Cent quarante (n = 140) bébés abandonnés et consécutivement recrutés avec l'âge moyen de 11.5 ± 24,1 semaines faisant 79 mâles et 61 femelles envoyés pour un test de VIH pré-adoption d'une maison pour les bébés abandonnés à Port Harcourt au cours d'une période de cinq ans (1999 - 2003) ont été examinés pour VIH en utilisant des kits d'immunocomb VIH I et II approuvé par OMS (Organics, Israël); une enzyme lié à l'analyse d'immunosorbant pour le diagnostic quantitatif et différentiel de VIH dans le sérum ou le plasma. Au commencement des échantillons réactifs ont été continués avec l'utilisation de VIH de Genscreen 1 et 2 (p.24) examen de l'antigène (Bro rad, France).

Résultats : HIV a été détecté dans 19(13,6%) des bébés examinés. la Séro-prédominance était la plus haute dans les bébés ages de 9 - 16 semaines (25,0%). Les mâles ont représenté la population la plus affectée par le fardeau d'infection (57,9%) comparé à (42,1%) pour des femelles. Les données ont indiqué que la prédominance de VIH a diminué de 12,5% en 1999 à 8,3% en 2000 et ont augmenté plus tard à 20% en 2001 mais a diminué solidement à 16,1% en 2002 et à 14,3% en 2003. VIH-1 a représenté le sous-type viral prédominant parmi les bébés séropositifs pour VIH (89,5%). L'analyse de chi-carrée

indique que le symptôme à l'abandon était un facteur de risque indépendant pour l'infection de VIH Parmi les bébés abandonnés ($\chi^2 = 40,97$; $p = 0,0001$).

Conclusions : Cette étude démontre une forte présence de VIH parmi les bébés abandonnés à Port Harcourt. Ceci réclame un besoin pressant de gouvernement, des organisations non gouvernementales et des organisations religieuses d'examiner critiqueusement la question de l'abandon d'enfant et l'infection de VIH en lançant les programmes de soin et de soutien visés à fournir la connaissance et l'information et les informations qui soulignent une combinaison des changements sociaux et comportementaux et qui fournissent des services de santé amicaux aux jeunes à la lutte contre le fléau de VIH.

Mots clés : Séro-épidémiologie, VIH, bébés abandonnés, Port Harcourt

Introduction

We are entering the third decade of what may be the most devastating epidemic in human history; HIV/AIDS. The disease is now the fourth largest cause of death, wreaking devastation on millions of children and on their families and communities throughout the world. It is documented that out of the 33 million people living with HIV/AIDS worldwide, two-thirds are in sub-Saharan Africa.¹

It is estimated that 13 million children are currently living with HIV/AIDS, 3.8 million children have died before their fifteenth birthday, nearly half a million of them in 1999; and of the ten countries worldwide with the greatest infection burden of HIV-infected children the top nine are in sub-Saharan Africa.² The rising HIV infection rates among women particularly in Africa expose children to increased HIV risk before they are born. The number of AIDS orphans is increasing at an unprecedented rate. At the end of 2001, 13 million children had lost at least one parent to AIDS and the number is expected to climb to 25 million by 2010.³ Reported rate of transmission of HIV from mother to child range from 15 – 25% in Europe and United States and 25 – 40% in some African and Asian studies.^{4, 5} In Nigeria the prevalence of HIV has increased from 1.8% in 1991 to 3.8% in 1993, 4.5% in 1999, 5.8% in 2001 and dropped to 5.0% in 2003.⁶

Abandonment of newborn babies dates back to the bible days with the story of Moses. In Nigeria, it is a common observation to find babies abandoned in the hospital after birth, in gutters and hidden places possible because the mother tested positive for HIV. The act of child abandonment is greatly influenced by socio-economic constraints. In this era of the HIV Pandemic, many of the abandoned babies are feared to be babies of HIV seropositive mothers who for fear of stigmatisation, discrimination and the burden of caring for an HIV positive child, abandon their babies. This is a report of the sero-epidemiology of HIV among abandoned babies, and highlights the health needs of these babies.

Materials and Methods

Study population

A consecutive sample of 140 abandoned babies referred to the University of Port Harcourt Teaching Hospital (a 500 bed tertiary health facility in Port

Harcourt a cosmopolitan city in the heart of the oil and gas industry in Nigeria) from the Port Harcourt motherless babies home for the purpose of pre-adoption HIV screening between January 1999 and December 2003 (A period of five years) were studied. Informed consent was obtained from operators of the home. Socio-demographic data such as estimated age; sex and presenting symptoms were recorded for each child.

Sample collection and laboratory methods

3 millilitres of whole venous blood was collected from each study subject and the serum sample were separated and stored at -20°C till the time of analysis. All sample were screened using the World Health Organization (WHO) approved enzyme immunoassay (EIA) based ImmunoComb HIV 1 & 2 kits (Organics, Israel) - an immunochromatographic test for the quantitative and differential diagnosis of antibodies to HIV 1 & 2. Initially reactive samples were confirmed using a second Genscreen HIV 1 & 2 antigen based test (Bio Rad, France).

Data analysis

Data analysis was performed using a statistical package for personal computers EPI - info software (Version 6). Descriptive statistics were used to summarize data. Chi square test was used to assess the significant differences between groups. A p-value of < 0.05 was considered significant for all statistical comparison.

Results

A total of 140 abandoned babies were screened for HIV within the period under review (1999 – 2003). This number was made up of 71 males (50.7%) and 69 females (49.3%), mean age of 11.49 ± 24.1 weeks. Of the total number screened 19 babies were sero positive for HIV giving an overall prevalence of 13.6%. Of the 16 babies tested in 1999 only 2 (12.5%) were HIV positive. In 2000 out of the 15 tested only 3 (8.3%) were positive. In 2001 out of the 15 tested only 3 were positive (20%). Of the 31 babies tested in 2002, only 5 (16.1%) were positive, while in 2003, 6 out of 42 babies tested were positive (14.3%). Figure 1 shows the trend in the prevalence of HIV among abandoned babies 1999 – 2003.

Although statistically not significant ($\chi^2 = 0.45$, $p = 0.50$), seroprevalence of HIV was higher among

males 11 (57.9%) compared to females 8 (42.1%). HIV seroprevalence was higher in babies 9-16 weeks old, although the difference was not statistically significant ($\chi^2 = 4.19$; $p = 0.38$) as shown in table 1.

HIV-1 was the predominant viral subtype 17 (89.5%) compared to 1(5.3%) respectively for HIV-2 and dual HIV 1 and 2 infection ($p < 0.05$).

Of the 140 babies tested, 22 (15.7%) were well while majority presented with neonatal jaundice 29

(20.7%), 27 (19.3) with neonatal sepsis while 25(17.7%) presented with fever. Among the 19 HIV-positive babies the predominant symptoms were persistent fever 6 (31.8%) and neonatal sepsis (26.3%). A significant difference was found using chi square analysis which indicated that presenting symptoms on arrival at abandoned babies homes was an independent risk factor for HIV infection among abandoned babies ($\chi^2 = 40.97$; $p = 0.0001$).

Figure 1: Trend in HIV prevalence among abandoned babies in Port Harcourt, Nigeria

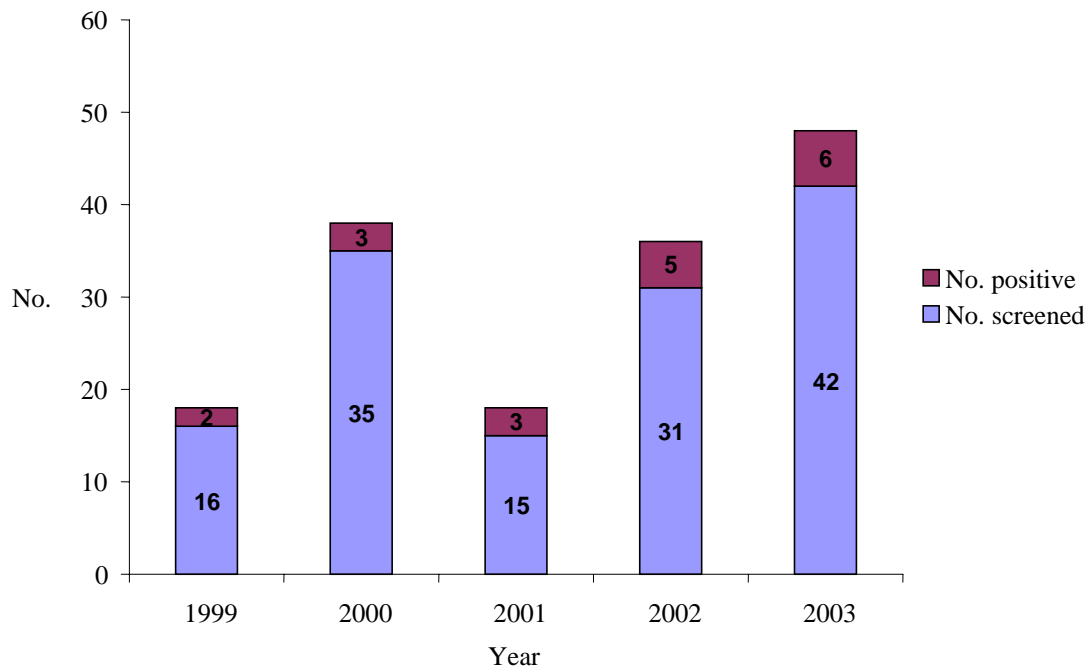


Table 1: Age distribution of HIV positive abandoned babies in Port Harcourt, Nigeria

Age (weeks)	No. screened for HIV	No. HIV positive	% HIV positive	P-Value
< 9	103	14	13.6	0.38
9-16	16	4	25.0	
17-24	6	1	16.7	
25-32	2	-	0	
> 32	13	-	0	
Total	140	19	13.6	

Discussion

The epidemic of AIDS caused by infection with HIV has remained a major public health problem globally wreaking devastation on millions of children, families and communities.

The overall prevalence of HIV infection among 140 abandoned babies tested was 13.6%. This prevalence rate is however substantially higher than the national prevalence of 5% and 6.6% in Rivers States reported in the 2003 sentinel surveillance report in Nigeria.⁴ The higher prevalence observed in this study may have been accounted for by the fact that these abandoned babies may be born of women who

engage in risky sexual behaviour including commercial sex workers and adolescents. In Nigeria as in the rest of the world, the age of sexual debut is decreasing as more young people engage in premarital sex and have multiple sex partner,⁸ coupled with the fact that traditional African values which places emphasis on chastity has been eroded and "permissive" western culture and attitudes to sexual issues adopted leading to teenage pregnancies and eventual abandonment of babies after delivery.⁹

The present study showed that the prevalence of HIV declined from 12.5% in 1999 to 8.3% in 2000 and increased subsequently to 20% in 2002 but declined steadily from 16.1% in 2002 to

14.3% in 2003. This observation is however at variance with population based prevalence in Nigeria, which increased steadily from 1.8% in 1993, 3.8% in 1996, 4.5% in 1999, 5.4% in 2001 and dropped to 5.0% in 2003.⁴ This study indicates that the incidence of vertical transmission of HIV has increased from 12.5% in 1999 to 14.3% in 2003. Most sero-epidemiological studies in developing countries show that the rate of vertical transmission of HIV is high and increasing⁴. This increasing prevalence of HIV among abandoned babies brings to bare the challenges associated with child adoption in Nigeria. Consistent with previous authors in Nigeria^{10,11} who found HIV-1 the predominant viral subtype we observed a higher prevalence of HIV-1 (89.5%) compared to (5.3%) each for HIV-2 and dual HIV-1 and 2 infections.

In conclusion this hospital-based study has confirmed a high prevalence of HIV among abandoned babies tested and highlights the importance of HIV screening for abandoned babies before transfer to foster parents. This brings to bare the challenge associated with child adoption in Nigeria. Government, non-governmental organizations and FBO's should embark on care and support programmes by providing young people with knowledge, information and youth-friendly health services in a bid to address the issue of child abandonment and HIV infection. The findings emphasize the need for capacity building of personnel working in motherless babies home to enable them cope with the challenges of the increasing incidence of child abandonment and HIV. There is a need to strengthen the family planning services for seropositive mothers who do not wish to have more babies. The issue of therapeutic termination of pregnancy in HIV-infected mothers in cases of unwanted pregnancies may need to be reconsidered.

References

1. Satcher D. The global HIV/AIDS epidemic. *JAMA* 1999; 281:1479

2. Piot P, Coll-Seck A. Preventing mother-to-child transmission of HIV in Africa. *Bull World Health Organ* 1999; 77: 869 – 870
3. USAID, UNICEF. Children on “the brink: a report on orphan estimates and programme strategies” accessed online at [www.unaids.org/barcelona/presskit/children on the brink.html](http://www.unaids.org/barcelona/presskit/children%20on%20the%20brink.html), July 16, 2002
4. Soderlund N, Zwi K, Kinghorn A, Gray G. Prevention of vertical transmission of HIV: analysis of cost effectiveness of options available in South Africa. *Br Med J* 1999; 318: 1650 – 1656
5. Working group on mother-to-child transmission of HIV-1 in Africa, America and Europe: results from 13 prenatal studies. *J Acquire Immune Defic Syndr Hum Retrovirol* 1995; 8: 506 – 510
6. Federal Ministry of Health. Summary findings from the 2003 National HIV seroprevalence sentinel survey in Nigeria. Information for Policy Makers 2004: 21-38
7. De Cock KM, Fowler MG, Mercier E et al. Prevention of mother-to-child HIV transmission in resource - poor countries: translating research into policy and practice. *JAMA* 200; 238: 1175 – 1182
8. Olayinka BA, Osho AA. Changes in attitude, sexual behaviour and the risk of HIV/AIDS transmission in South West Nigeria. *East Afr Med J* 1997; 74: 554 – 560
9. Adedoyin M, Adegoke AA. Teenage prostitution – child abuse: a survey of the Ilorin situation. *Afr J Med Sci* 1995; 24: 27 – 31
10. Erhabor O. The geometrically increasing prevalence of HIV infection and its attendant social implications in Port Harcourt, Niger. *Lab News J* 2001; 4: 27 – 29
11. Akinsete I, Akamu AS, Okanny CC. Trends in HIV sero-positivity among visa applicants in Lagos, Nigeria. A five-year survey 1992 – 1996. *Niger Postgrad Med J* 1998; 5: 69 – 72