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Socio-demographic Characteristics of a Cohort of HIV Positive Nigerian Children

Características Sócio-Demográficas de uma Coorte de Crianças Nigerianas HIV Positivas

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ABSTRACT

Objective: To describe the socio-demographic characteristics of and identify risk factors in HIV positive paediatric patients presenting at the Lagos University Teaching Hospital.

Methods: A descriptive questionnaire based cross-sectional study to assess socio-demographic characteristics of patients presenting to the Paediatric HIV clinic of the Lagos University Teaching Hospital over a 12 month period. The data were analyzed using the Epi-Info 2002 statistical software for windows.

Results: Majority of parents had below tertiary level of education; mothers, 72.7 % and fathers, 69.1 %. Seventy percent of the mothers were HIV positive thus mother to child transmission seems to be the most prevalent risk factor. Majority of the children, 68.1% were delivered at private hospitals and 78.2% through normal vagina delivery. History of previous hospitalizations reported in 58.2% with previous blood transfusion in 30.9%. Over one-third of the children, 40.0% weighed between 2.5 and 2.9kg at birth.

Conclusions: The literacy level, poor socioeconomic background and parental HIV status were major contributory factors in the children studied. Targeted interventions on barriers to care and knowledge of HIV infection should be an integral part of the HIV prevention program.

RESUMO

Objetivo: Descrever as características sócio-demográficas e identificar fatores de risco em pacientes pediátricos HIV positivos atendidos no Hospital de Ensino da Universidade de Lagos, Nigéria.

Métodos: Estudo transversal no qual foi aplicado um questionário para avaliar as características sócio-demográficas de pacientes infantis HIV durante um período de 12 meses. Os dados foram analisados com o software Epi-Info 2002.

Resultados: A maioria dos pais tinha abaixo do nível terciário de educação (mães, 72,7% e pais, 69,1%). Setenta por cento das mães HIV positiva, assim, a transmissão vertical parece ser o fator de risco mais prevalente. A maioria das crianças (68,1%) nasceu em hospitais privados e 78,2% oriundas de parto normal. Histórias de hospitalizações anteriores foram relatadas em 58,2% com a transfusão de sangue prévia em 30,9%. Mais de um terço das crianças (40,0%) pesava entre 2,5 e 2,9 kg ao nascimento.

Conclusão: O nível de alfabetização, baixo nível socioeconômico e status de HIV familiar foram os principais fatores que contribuíram entre as crianças estudadas. Intervenções orientadas sobre as barreiras à assistência e conhecimento da infecção pelo HIV deve ser uma parte integrante do programa de prevenção do HIV.

KEY-WORDS

Paediatric HIV/AIDS; Socio-demographic Background; Risk Factors.

DESCRIÇÕES

HIV/AIDS infantil; Contexto sócio-demográfico; Fatores de risco.

INTRODUCTION

The continuing worldwide epidemic of Human Immunodeficiency Virus (HIV) infection in adults has led to an increase in the number of HIV- positive children infected mainly through peri-natal route. However, despite therapeutic advances, the mortality rate in paediatric population continues to be high. Additionally as survival increases, attention would be focused on improving the quality of life through reduction of morbidity¹⁻⁷.

Nigeria is reported to be the tenth largest country in the world and the most populous in Africa. The estimated population of the country in 2003 stood at 126.2 million. In 2003, it was estimated that national median HIV prevalence was 5.0%⁸. Nigeria has the third highest burden of HIV in the world after China and India. The prevalence of HIV has been growing steadily since the first case of the infection was reported in 1986, from 1.8% in 1991, 4.5% in 1996 and 5.6% in 2001. It dropped to 5.0% in 2003, 4.4% in 2005 and 3.6% in 2007⁸⁻¹¹. Nigeria has over four million infected persons, making it the nation with the highest burden of HIV epidemic in Africa^{11,12}.

The UNAIDS Global update reports a decline in the incidence of HIV in 33 countries by over 25% between 2001 and 2009.¹³ Nigeria is one of the 22 countries in sub-Saharan Africa in this recent update. It has also been observed that the biggest epidemics in these regions have either stabilized or are showing signs of decline. Although this is a significant reduction, HIV continues to weigh on maternal and child mortality in some countries including Nigeria.¹⁰⁻¹⁴ These figures demonstrate that a positive behavior change can alter the course of the epidemic. While stigma and discrimination, lack of access to health services, bad laws can make epidemics worse. In both cases, the effects are often profound. Should the number of HIV positive births and HIV/AIDS cases in the general adult population increase, more persons would be in need of anti-retroviral treatment thereby putting serious strain on health resources. With increasing deaths from AIDS and AIDS related complications there will be increase in the number of orphans, thus raising new dimensions in the social burden of HIV/AIDS in Nigeria.

The present study assessed the socio-demographic characteristics of HIV positive paediatric patients attending the Lagos University Teaching Hospital Lagos, Nigeria. It is hoped that findings from this preliminary study will provide a guideline for planning preventive strategic programs on HIV whose objectives include positive behavior change and virtual elimination of mother to child transmission aimed at achieving the 2015 Millennium Development Goal 6: halting and reversing HIV.

The study was a descriptive investigation carried out at the special paediatric out-patient clinics of the Lagos University Teaching Hospital (LUTH), Nigeria. The LUTH is one of the foremost tertiary institutions providing medical and dental services as well as being engaged in the training of health personnel of different cadres.

Ethical clearance was obtained from the Research and Ethics Committee of the Lagos University Teaching Hospital. Informed consent was obtained from parents, caregiver or guardian of the patients.

All paediatric patients attending the special pediatric clinics of the LUTH were eligible for the study. Subjects were assigned a numerical code in order of participation in the study. No record was kept of the link between numerical code and patient identity, thus maintaining confidentiality. A convenience sample was used. Only children confirmed to be HIV positive from results of Elisa tests were recruited into the study. Interviews and data acquisition were carried out by two examiners.

The questionnaire was in three parts: Part A- socio-demographic background of parents; Part B- Data on child for information on birth history, birth weight, illnesses, hospitalizations and medications and Part C- clinical oral examination of the child. All relevant medical data was extracted from the hospital records. Information was recorded in the interviewer administered questionnaire.

The data was entered, edited and analyzed using the Epi-Info 2002 statistical software for windows. Frequency distribution tables were generated for all categorical variables. Means and standard deviation were determined for interval ratio data. Data was validated by examining frequency tables generated. Level of significance was placed at $p \leq 0.05$.

RESULTS

A total of 55 patients were seen during the study period. There were 29 (52.7%) males and 26(47.3%) females giving a male to female ratio of 1:0.9. The age of the children ranged from 6 months to 16 years with a mean of 4.4 years (+/- 3.47).

Over one-third of the children, 21 (40%) weighed between 2.5 and 2.9kg at birth followed by 3.0 to 3.5kg in 15 (27.3%) and 9 (16.4%) weighed more than 3.5kg and less than 2.4kg at birth respectively. Over three-quarters of the children, 43 (78.2%) were delivered by normal vaginal delivery and 12 (21.8%) by caesarian section.

Thirty seven, 67.3% of the children were delivered at Private or Industrial clinics, 12 (21.8%) in Government Hospitals and 6 (10.8%) at home, church or traditional birth places (Table 1).

Majority of the parents, 31 (56.4%) were in the 21-40 year age bracket. Over one-third of the fathers, 21 (38.2%) were from the Igbo tribe. Others were Yoruba,

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17 (30.9%), South-South 10 (18.1%) and Hausa 7 (12.7%). Majority of mothers, 25 (45.5%) were of the Igbo tribe while 17 (30.9%), 8 (14.5%) and 5 (9.0%) were Yoruba, South-South and Hausa ethnic groups respectively. On educational status, 30 (54.5%) of fathers had secondary level of education while 2 (3.6%), 6 (10.9%) and 17 (30.9%) had none; primary or tertiary level of education respectively. Majority of mothers, 29 (52.7%) had secondary level of education, 15 (27.3%) had tertiary or university education, while 7 (12.7%) each had none or primary level of education respectively. Majority of the mothers, 27 (49.1%) were in junior status jobs

while 10 (18.9%), 11 (20%) and 7(12.7%) were unemployed/housewife, in senior or intermediate occupational levels.

On HIV status, 19 (34.5%) of the fathers were HIV negative, 14 (25.4%) HIV positive and 22 (40%) refused to state their HIV status. Thirty-nine (70.9%) of the mothers were HIV positive and 16 (29.1%) were HIV negative. There was positive history of blood transfusion and previous hospitalizations in 17 (30.9%) and 32 (58.2%) children respectively. Twenty five (45.5%) were circumcised while 9 (16.4%) had scarification or tribal marks and 2(3.6%) have sickle cell anemia.

Table 1. Biodata and birth history of children studied.

| Characteristic | Variable | No. | % |
|------------------|---|-----|------|
| Age | Range 6months to 16 years s.d \pm 3.47yrs | | |
| | Mean = 4.4 | | |
| Sex | Male | 29 | 52.7 |
| | Female | 26 | 47.3 |
| Birth weight | <2.4kg | 9 | 16.4 |
| | 2.5-2.9kg | 21 | 40.0 |
| | 3.0-3.5kg | 15 | 27.3 |
| | >3.5kg | 9 | 16.4 |
| Mode of delivery | Caesarean section | 12 | 21.8 |
| | Normal vaginal delivery | 43 | 78.2 |
| Place of birth | Government hospital | 12 | 21.8 |
| | Private/Industrial clinics | 37 | 67.3 |
| | Church/Home/Traditional Birth Attendant | 6 | 10.8 |

Table 2. Socio-demographic characteristics of parents.

| Characteristic | Variable | No. | % |
|------------------------------|----------------------|-----|------|
| Age of parentes | 21-40 years | 31 | 56.4 |
| | 41-60years | 24 | 43.6 |
| Father's ethnicity | Hausa | 7 | 12.7 |
| | Igbo | 21 | 38.2 |
| | Yoruba | 17 | 30.9 |
| | South-south | 10 | 18.1 |
| | | | |
| Mother's ethnicity | Hausa | 5 | 9.0 |
| | Igbo | 25 | 45.5 |
| | Yoruba | 17 | 30.9 |
| | South-south | 8 | 14.5 |
| | | | |
| Father's educational status | None | 2 | 3.6 |
| | Primary | 6 | 10.9 |
| | Secondary | 30 | 54.5 |
| | Tertiary | 17 | 30.9 |
| Mother's educational status | None | 7 | 12.7 |
| | Primary | 7 | 12.7 |
| | Secondary | 29 | 52.7 |
| | Tertiary | 15 | 27.3 |
| Mother's occupational status | Unemployed/housewife | 10 | 18.9 |
| | Junior status jobs | 27 | 49.1 |
| | Intermediate | 11 | 20.0 |
| | Senior status | 7 | 12.7 |
| | | | |
| HIV status father | Negative | 19 | 34.5 |
| | Positive | 14 | 25.4 |
| | Refused to confirm | 22 | 40.0 |
| HIV status mother | Negative | 16 | 29.1 |
| | Positive | 39 | 70.9 |

Table 3: Possible associated risk factors in children studied.

| Factor | No. | % |
|-------------------|-----|------|
| Hospitalizations | 34 | 61.8 |
| Blood transfusion | 19 | 34.5 |
| Circumcision | 25 | 45.5 |
| Tribal marks | 9 | 16.4 |

Sum of percentages more than 100 because some children have more than one risk factor.

DISCUSSION

Mother to child transmission (MTCT) is a major source of infection in HIV-infected children. In the

present study it was found that over two-thirds of the mothers were HIV-positive. This could explain the source of the infection in these children, especially if preventive care was not appropriately instituted during the antenatal period. Only 12 (21.8%) of the children were delivered by caesarean section with 70.9% of the mothers being HIV positive. Caesarean section confers a more protective effect than vaginal deliveries. This is an indication that the mothers were not aware of their HIV status prior to delivery or did not present to centers where the necessary precautions would have been instituted to prevent or reduce vertical transmission.

An estimated 430,000 new HIV infections occurred among children under the age of 15 in 2008¹². In 2009, 370,000 children were infected and most of the infections are believed transmitted in-utero, during delivery or post-partum as a result of breastfeeding^{12,13}. Though this is a drop of 24% from five years earlier and may be due to the rapid expansion of delivery of effective advances in preventing mother-to-child transmission. However, this is being held back by inadequate access to antenatal and postnatal services. AIDS is the leading cause of death and disease among women aged 15 to 44 worldwide. In six hyper-endemic African countries, AIDS is responsible for more than 40% of child deaths¹⁰. The prevention of mother to child transmission of the human immunodeficiency virus will be easier if the factors promoting maternal infection in the society are controlled^{14,15}.

Education and socio-economic status are major components of health seeking behavior. The mothers in the present study had low to medium educational and socio-economic status. Studies have reported a high correlation between HIV and AIDS, poverty and low maternal education^{3,14}. Prevention initiatives should be targeted at all women but due to limitations in human, financial and technical resources; prioritization of efforts is important in order to achieve the desired goals.

Though majority of the mothers of the children in the present study were HIV positive, they were furthermore in relationships which put them at greater risk of HIV infection. A number of studies have reported that sexual intercourse within marriage or with a permanent partner puts many women at risk for HIV infection, most commonly from their husbands' or partners' extramarital liaisons^{3,16-19}. Women who are economically and socially dependent on their husbands or lovers have difficulty negotiating condom use and inquiring about their partners' extramarital liaisons, both key components of the widely promoted ABC approach-abstinence, be faithful, and condom use.

Moreover, structural factors such as labour migration involving separation of spouses, masculine sexual privilege, expectations of female sexual passivity, and domestic violence exacerbate women's HIV vulnerability³. Early in the sub-Saharan epidemic, wealthier men were among the first to become infected because their greater resources provided access to greater numbers of sexual partners. In line with more recent studies, risk is also an element of poverty and

economic gender inequality. Studies on pattern of risk behaviour have shown that majority of males and females had multiple sexual partners and heterosexual contact was the commonest mode of transmission. Male partner violence and high levels of male control in a woman's current relationship have been associated with HIV seropositivity in women^{3,20}.

Low birth weight has been associated with inadequate health care, poor nutrition, low socioeconomic status, low level of maternal education, alcohol and other substance abuse, including use of cocaine and heroin. However, several studies have shown that there are no significant differences in birth weight between newborns who were HIV-positive versus HIV negative^{16,21}. Most paediatric AIDS cases are often associated with use of intravenous drugs by one or both parents. The majority of patients in the present study had low birth weight. Though no conclusive association can be made between birth weight and HIV status from our study, however, low birth weight is an indicator of the general health of newborns, and a key determinant of infant survival, health and development. Low birth weight infants are at a greater risk of dying during the first year of life, and of developing chronic health problems²². Low birth weight influences the rate of vertical transmission

A number of risk factors were observed in the children studied: parental HIV status, parental sexual partners, blood transfusions, exposure to non-sterile instruments (circumcisions, scarifications, phlebotomy procedures) and some non-compliant parents. Though no direct significant association can be stated between these risk factors and the HIV status of these patients; these findings pose public health concerns needing urgent interventions.

While the major emphasis for public health HIV/AIDS programs has been on universal education and precautions, efforts targeted at high-risk persons or geographic areas are also important²². Promoting abstinence, male or female condom use, microbicides or reduced concurrencies all presume that beneficiaries will be choice-enabled. Policies and programs that enhance women's educational and economic opportunities should be put in place. Structural determinants that promote men's extramarital sex should be addressed. Men are twice as likely as women to bring HIV infection into a marriage, presumably through extra-marital sexual behaviour. Within sero-discordant marriages women become infected twice as fast as men, probably because of increased biological susceptibility. Married adults, particularly women, with HIV-positive spouses are at very high risk of HIV infection. Married couples should be encouraged to attend HIV counseling together so that sero-discordant couples can be identified and advised accordingly.³ Both husbands and wives should be included in prevention programs, interventions targeting marital HIV risk for effectiveness and sustainability. Perinatal prevention efforts are also critical and offer hope in reducing vertical transmission of HIV infection.

CONCLUSION

The literacy level, poor socioeconomic background and parental HIV status were major contributory factors in the children studied. Targeted interventions on barriers to care and knowledge of HIV infection should be an integral part of the HIV prevention program.

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REFERENCES

1. UNAIDS. Report on the Global AIDS Epidemic Update 2009, Geneva.
2. Bakeman R, Lumb JR. AIDS statistics and the risk for minorities. *AIDS Res* 1986; 2:249-52.
3. Carpenter LM, Kamali A, Ruberantwari A, Malamba SS, Whitworth JA. Rates of HIV-1 transmission within marriage in rural Uganda in relation to the HIV sero-status of the partners. *AIDS* 1999; 13(9):1083-9.
4. Spear GT, St John E, Zariffard MR. Bacterial vaginosis and human immunodeficiency virus infection. *AIDS Research and Therapy* 2007; 4:25.
5. Gupta M. Profile of clients tested HIV positive in a voluntary counseling and testing center of a district hospital, Udupi. *Indian J Community Med* 2009; 34(3):223-6.
6. Hopkins DR. AIDS in the minority populations in the United States. *Public Health Rep* 1987; 102:677-81.
7. Johnson B, Michael C, Marsh K, Levin K, Scott-Sheldon L. Interventions to reduce sexual risk for the human immunodeficiency virus in adolescents, 1985-2000. *Arch Pediatr Adolesc Med* 2003; 157:381-8.
8. Onah HE, Obi SN, Agbata TA, Oguanuo TC. Pregnancy outcome in HIV-positive women in Enugu, Nigeria. *J Obst Gynaecol* 2007; 27(3):271-4.
9. Oluwadare CT, Ayoola D. The challenge of ethnic diversity and HIV prevalence in Nigeria. *J AIDS HIV Res* 2012; 4(4):100-4.
10. UNAIDS. Issues Brief. AIDS dependency crisis, sourcing African solutions 2010.
11. Federal Ministry of Health Nigeria. Nigeria HIV AIDS 2007 Surveillance Report.
12. Orenuga OO, Obileye MF, Sowole CA, Agbelusi GA. Oral manifestations of paediatric HIV infection in a text book of HIV infection in the era of HAART and some of its associated complications. *Elaheh Aghdassi: Intechweb (Org)*. 2011. pp 163-92.
13. UNAIDS. Global AIDS Epidemic Update Report 2010.
14. Adejuyigbe EA, Fasubaa OB, Onayade AA. Sociodemographic characteristics of HIV-positive mother-child pairs in Ile-Ife, Nigeria. *AIDS Care* 2004; 16:275-82.
15. Sherry B, Embree JE, Mei Z, Ndinya-Achola JO, Njenga S, Muchunga ER, Bett Plummer FA. Socio-demographic characteristics care, feeding practices, and growth of cohorts of children born to HIV-1seropositive and seronegative mothers in Nairobi, Kenya. *Trop Med Int Health* 2000; 5(10):678-86.
16. Morse DL, Lessner L, Medvesky MG, Glebatis DM, Novick LF. IV. Geographic distribution of newborn HIV seroprevalence in

relation to four sociodemographic variables. *Am J Publ Health* 1991; 81(S):25-9.

17. Mullen PD, Ramirez G, Strouse D, Hedges LV, Sogolow E. Meta-analysis of the effects of behavioural HIV prevention interventions on the sexual risk behaviour of sexually experienced adolescents in controlled studies in the United States. *J Acquir Immune Defic Syndr* 2002; 30(Suppl 1):S94-S105.

18. Parikh SA. The political economy of marriage and HIV: The ABC approach, "safe" infidelity, and managing moral risk in Uganda. *Am J Public Health* 2007; 97:1198-1208.

19. Robin L, Dittus P, Whitaker D, Crosby R, Ethier K, Mezooff J, Miller K, Pappas-Deluca K. Behavioral interventions to reduce incidence of HIV STI and pregnancy: A decade in Review. *J Adolesc Health* 2004; 34(1):3-26.

20. Dunkle KL, Jewkes RK, Brown HC, Gray GE, McIntyre JA, Harlow SD. Gender-based violence, relationship power, and risk of HIV infection in women attending antenatal clinics in South Africa. *Lancet* 2004; 363:1415-21.

21. Miller AC, Jekel JF. Incidence of low birth weight infants born to mothers with multiple risk factors. *Yale J Biol Med* 1987; 60:397-404.

22. Oliveira Soeiro CM, Miranda AE, Saraceni V, Lucena NO, Talhari S, Lima Ferreira LC. Mother-to-child transmission of HIV infection in Manaus, State of Amazonas, Brazil. *Rev Soc Bras Med Trop* 2011; 44(5):537-41.

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