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PATTERN OF HIV/AIDS INFECTION IN IRRUA, A RURAL COMMUNITY IN NIGERIA.

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ABSTRACT

This study aims to observe the pattern of HIV infection in Irrua Hospital records of patients diagnosed and managed with HIV/AIDS between January 2001 and December 2004 were retrieved and subjected to statistical analysis. The results show that females have statistically significant lower age; more incidence of double infection with HIV1&2; and more clinical anaemia(low PCV values) compared to their male counterparts.

Women are more likely to be HIV infected than men of similar ages for biological and cultural reasons.

HIV also passes more easily from men to women than vice versa hence double infection is common.

Anaemia is commoner in females because of incidence of marrow failure due to longer survival after HIV infection in women. Efforts should therefore be made to check the spread of this dreaded infection.

Key words. Hiv. Rural.Irrua. Male/female.

INTRODUCTION

The seroprevalence of HIV in Nigeria varies according to the population groups studied and figures differs from place to place(1) The average national HIV prevalence rates in Nigeria based on sentinel surveillance study using antenatal records to represent the general population shows a steady increase from 1.8% in 1990, to 3.8% in 1993, to 4.5% in 1995 and 5.4% in 1999(2) These indicates that approximately 2.6 million Nigerians are HIV positive and may subsequently go on to develop full blown AIDS. Young people are most vulnerable, and in the 1999 study people aged 20-24years had the highest rates of infection (3)

The pattern of HIV infection in the rural area and its impact on the community is different from that in the urban setting (4) Its epidemiology and clinical manifestation also varies between the male and female sexes (5)

This study aims to see the pattern that exists in this rural area where our centre is located and the reasons for any such observed trend. This becomes important since the overwhelming majority of people with HIV infection live in the developing world and these number continues to rise in countries like Nigeria where poverty, poor health systems ignorance, nut-headness, and limited resources for prevention and care fuel the spread of the virus.

METHODOLOGY

This is an hospital based study conducted at the Irrua Specialist teaching hospital, Irrua in Esan central LGA of Edo state, Nigeria.

The hospital records of all patients managed on the medical wards with clinical features of immunosuppression and that subsequently tested positive to HIV ELISA antibody between January 2001 and December 2004 were retrieved and information was collected on a previously

designed questionnaire to ease data collection. Demograhic characteristic of the patients such as age, sex, occupation were considered. Types of virus involved and complications were also considered.

The information obtained was subjected to statistical analysis using Epi-info 6 and a p-value <0.05 was taken as significant. A comparison of the features in the males and females was done.

RESULTS

A total of 134 patients fulfilled the above criteria. There were 68males and 66 females. The mean age of the patients was 38.53±5.3years. The males were found to have a higher mean age of 44.19±9.19years compared to the females with a mean age of 32.87 ±3.24years(P-value <0.005). Most of the females were in the twenties while most of the males were in the late thirties and forties.

Table 1. Demonstrates the age distribution of patients in years.

Age group(in years)	Males	Females	Total
20-29	0	33(50%)	33(25%)
30-39	17(25%)	21(32%)	38(28%)
40-49	38(56%)	0	38(28%)
50-59	9(13%)	8(12%)	17(13%)
60-69	4(6%)	4(6%)	8(6%)
Total	68(100%)	66(100%)	134(100%)

Table2. HIV Status and the prevalence in both sexes. It is worthy of note that HIV2 seropositivity was zero in males.

HIV STATUS	MALES	FEMALES	Total
HIV1	36(53%)	8(12%)	44(33%)
HIV2	0	4(6%)	4(3%)
HIV1&2	32(47%)	54(82%)	86(64%)
TOTAL	68(100%)	66(100%)	134(100%)

The mean packed cell volume(PCV) in both males and females was 26.3±8.49but there was a statistically significant lower value in the females with a mean value of 22.19±2.12 compared with that of the males of 30.50±3.43.Three of the female patients actually presented with features of anaemic heart failure.

The commonest presenting pathology or illness in both groups was pulmonary Tuberculosis (diagnosed clinically and radiologically).

The Erythrocyte Sedimentation Rate was consistently elevated in both groups especially with co-morbid pulmonary tuberculosis.

DISCUSSION

There is an equal prevalence of HIV infection in both sexes based on the result of this study in this centre however the age at presentation and the clinical manifestations are different.

The females are considerably younger than their male counterparts with an average age difference of about a decade. This is not totally unexpected since worldwide, about half of all HIV infections are estimated to occur in young people under 25years(6). In developing countries, 60% of all HIV infections occur in 15-24year olds, with a female to male ratio of 2:1 in this age group(7). Girls and young women are especially vulnerable to HIV infection. They marry, or have sexual intercourse with older more sexually experienced men. Older men may approach school girls for sex, since they believe that these girls are still virgins and therefore less likely to be already infected with HIV. Girls are more likely than boys to have been sexually abused at home. This may lead them to run away and eventually to find themselves in commercial sex work. Other girls maybe tempted to leave home by promises of work in another country or region, only to find that the work is actually prostitution. Even those employed legitimately in factories or offices may be targeted for sex by more powerful male bosses.

Globally (8) women have less access to education, have less power to refuse unwanted sex, and to negotiate safer sex, and maybe unaware of having a sexually transmitted disease(STD). In Africa, women aged 15-24years are more likely to be HIV infected than men of similar ages for biological and cultural reasons (9). Other factors include poverty that makes high risk behaviour necessary as a means of survival by selling sex or street hawking of wares which exposes them to sexual abuse or commercial sex; loss or disintegration of their family system (often due to migration or forced displacement) leading to loss of control by parents, schools and the adult community; migration into urban areas where standards of living, role models and peer groups are in conflict with traditional norms and values; unavailability of or access to accurate information; and absence of health and social services to help young people due to restrictive policies and legislation.

The result of our study also shows that females have a higher rate of double infection with HIV 1 & 2 (82%) to males (47%). A combination of factors appears to be at work here, including the fact that HIV passes more easily from men to women through sex than from women to men(10). Nicolosi et al found male to female transmission of HIV to be 2.3 times greater than vice versa(11).

Furthermore, male to female transmission is more effective than female to male. Women are slightly more vulnerable physiologically to HIV infection than men. The area of mucous membrane exposed during intercourse is larger in the woman than in the man, and the mucous membrane surface of the vagina (compared to the penis) can more easily be penetrated by virus. Young girls are more vulnerable than women in the 18-45year age group (12). their immature cervix and relatively low vaginal mucous production present less of a barrier to HIV. A woman who is menstruating is likely to be at higher risk to HIV through sexual intercourse . Another possible factor for a more effective male to female transmission is the active carriage of HIV in the ejaculate.

Anaemia is a prominent feature among the females in this study. The PCV value was

significantly lower in females than in their male counterparts and as shown in the study, three of them actually presented in anaemic heart failure. This is also not totally unexpected as HIV infection is dominated by peripheral blood cytopaenias (13). Anaemia occurs in approximately 60-70% of AIDS patients(14) and it is a common manifestation of HIV disease. The pathophysiology of haematologic complications involves multiple defects in haematopoiesis such as decreased numbers of bone marrow progenitors; HIV infection of marrow progenitors with resulting abnormal maturation and proliferation; deficient production of haematopoietic growth factors by the bone marrow and HIV induced factor that inhibit normal heamatopoiesis (15). The reason why women seems to be affected more than men is not fully understood. A combination of factors are clearly involved such as the difference in age patterns of HIV infection in men and women (16). Women tend to become infected far younger than men for both biological and cultural reasons (9,16). The second factor involves survival time from infection to death. The older the patient before HIV infection, the shorter the time between infection and death. Therefore, African women , who as a rule become infected younger than their male counterparts can expect to live longer with HIV on average than men and therefore experience more organ failure such as bone marrow failure leading to aneamia.

The finding of pulmonary tuberculosis(PTB) as the main presenting illness is not surprising as PTB is the most common AIDS defining illness in Africa(17) and this has threatened to overwhelm the tuberculosis control programme in some centres in this country(18) This devastating effect on TB programmes has resulted in over 100% increase in TB cases in some setting(17-18) which thus creates an increased demand for diagnostic services, anti-tuberculous drugs, hospital beds and other supplies and services in areas such as ours where they are already in short supply(18).

In conclusion the pattern of HIV infection found in this centre is comparable to that found in other centers in sub-Saharan Africa and all efforts to check the continued spread of this most dreaded viral infection must be vigorously pursued.

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