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Spectrum of clinical diseases in HIV-infected adults at the Lagos University Teaching Hospital: a five-year experience [1992 – 1996]

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Summary
The study was conducted to document the spectrum of clinical diseases in HIV infected patients at the Lagos University Teaching Hospital (LUTH) over a period of five years: 1992 – 1996.

Patients with symptoms suggestive of HIV infection in both in and out-patients at LUTH were studied. Their blood specimens were screened for HIV infection using enzyme immunosorbent assay (EIA) technique and positive results were confirmed by western blotting techniques. The following were documented: risk factors, clinical history and physical findings.

Of the 5,010 patients screened in a five-year period, 759 (15.15%) were found to be HIV positive. Of these 759 patients, 406 (53.5%) were young adults in their third decade (20-30 years). Heterosexual intercourse was the major risk factor in these patients (76%). Progressive loss of weight occurred in 77.8%, prolonged fever in 73%, chronic cough in 50%, painless lymphadenopathy in 40%, chronic diarrhoea in 35%, Kaposi's sarcoma in 0.52% and non-Hodgkin's lymphoma in 0.65%.

It appears the scourge of AIDS has eventually hit Nigeria. There is the need for reinvigoration of preventive efforts but some energy has to be channeled towards patient care.

Keywords: *Clinical, diseases, HIV, infection.*

Résumé
L'etude a été conduite afin de documenterie spectre des maladies cliniques chez les patients ayant le VIH au centre hospitalier universitaire de Lagos (LUTH) pendant une periode de 5 ans de 1992 – 1996. Les patients presentant les sympotmes suggerant une infections de VIH en utilisant la technique de l'Enzyme Immunosorbant Assay (EIA), et les resultats positifs ont été confirmé par la technique du Western Blot. Les information suivants ont été documenté. Les facterurs de risque, histoire clinique, et resultats physiques. Sur 5010 patients examinés pendant une periode de 5 ans, 759 (15,15%) ont été trouvé positif au VIH. Des 759 patients, 406 (53,3%) ont été des jeune adultes dans leur troisième decenie (20-30 ans). Les relations sexuelles heterosexuelles ont été le risque majeure de les patients (76%). La perte progressive de poids a été constaté chez 77,8%, La fievre prolongé chez 73%, la toux chronique chez 50%, lymphadenopathy sans paine chez 40%, la diarrhe chronique chez 35%, kaposi's sarcoma chez 0.52% et le Non-Kodgkin's lymphoma chez 0.65%.

Il apparait que le spectre du SIDA a deja eventuelement frappé le Nigeria. I'l ya un besoin de revigorer les efforts de preventiosn; mais des efforts sont aussi necessaire d'etre arienté aux soins vers les patients.

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Introduction

The scourge of AIDS has reached epidemic proportion, particularly in sub-saharan Africa. There is growing evidence of rising levels of HIV infection and AIDS in most part of the continent. In 1990, the level of infection in the general population of Zaire, Uganda and Nigeria, as reported to WHO [1] was 8.79%, 19.6% and 0.0%, respectively. According to WHO projection [2] in 1990, 3 million women were estimated to be HIV infected (about a third of the ten million estimated to be infected worldwide). Of these 3 million women, 2.5 million were said to be in Africa alone [3]. By 1996, it was believed that 14 million adults and children in Africa had been infected with HIV [3], representing about 63% of the world's total number of HIV infected individuals (22.6 million). There is therefore the need for continuous monitoring of the spread of the disease and frequent evaluation of the preventive program.

Lately, most Nigerians, including health personnel, despite the alarming statistics as above, were still sceptical about the claim that AIDS might be of public health importance in Nigeria. It is believed that most of the clinical features of AIDS as described by the WHO are common features of diseases of poverty and chronic infections that are prevalent in developing countries including Nigeria. This lack of awareness of deliberate non-challance of our clinicians in addition to what WHO [3] has described as logistic constraints and poor case recognition may be responsible for under-reporting of AIDS cases. For example, the official cumulative cases of AIDS in Nigeria as at June 1996 was put at 5,509 [3]. This represents only 0.03% of the estimated cases (151,000) for the country for the same period [4]. The disparity between these figures is unlikely to be due to effectiveness of preventive programs but gross under-reporting of cases. In fact, as at 1990, no case of AIDS was reported to WHO from Nigeria [1], whereas we know that the first case of AIDS in this country was documented as far back as 1986 [4].

Up to now, most studies from Nigeria have concentrated on seroprevalence of HIV infection in different population groups [5,6]. The present study is focussed on the documentation of clinical features of AIDS in Nigeria with respect to age, sex, risk factors, presence of major and minor signs of illness and presence of AIDS defining illnesses as described by WHO [7].

Patients and methods

Patients

Outpatients and inpatients with symptoms suggestive of AIDS using WHO case definition were screened for HIV infection by an enzyme immunosorbent assay (EIA) technique. Positive results were confirmed by western

blot technique. Patients' clinical history, risk factors and physical findings were documented.

Patients with pulmonary tuberculosis were confirmed radiologically and by sputum smear test. Malignancies – non-Hodgkin's lymphoma and Kaposi's sarcoma – were confirmed histologically.

HIV-Testing Algorithm in LUTH

1. All samples were screened with an EIA based technique. Between 1992 and 1995, this was carried out using Wellcozyme and Du-Pont test kits and the results read spectrophotometrically. For most part of 1996, testing was done with the more expensive immunocomb test kits and results read visually.
2. Samples that tested positive were re-screened in duplicates using test kits other than the one used for initial testing. If found positive again, the sample is described as being repeatedly positive.
3. Repeatedly positive samples were tested using Western-blotting test kit which is regarded as confirmatory for HIV infection.

Results

Seroprevalence of HIV antibodies in symptomatic LUTH patients

Over a five-year period, a total of 5,010 patients were tested for HIV antibodies. Of these, 759 (15.15%) tested positive. The lowest level of seropositivity was found in 1992 when 79 (6.7%) of 1,167 patients screened in that year tested positive. Subsequent results were 20.89%, 14.8%, 17.37% and 17.78% in 1993, 1994, 1995 and 1996 respectively. Approximately 90% and 10% of the patients tested positive for HIV-1 and HIV-2 respectively. No person tested positive for both viruses over the five-year period – Table 1.

Table 1: Result of HIV testing of LUTH patients with symptoms suggestive of AIDS (1992 – 1996)

Year	Total screened	No. of positives HIV-1	HIV-2	Total	Percentage
1992	1,167	70	9	79	6.7
1993	579	109	12	121	20.89
1994	554	74	8	82	14.8
1995	1,186	185	21	206	17.37
1996	1,524	245	26	271	17.78
Total	5,010	683 *(89.98)	76 *(10.01)	759	15.15

**Proportions of HIV-1 and HIV-2 among HIV infected patients.*

Age distribution

Age distribution of the 759 AIDS patients seen is shown in Table 2. Among them 406 patients representing 53.5% of the total were aged between 21 and 30 years. Teenagers are next affected as 205 (27%) of 759 patients were in the age bracket 11 to 20 years. Only one (0.13) patient was aged above 50 years (58 years). In all, 28 (3.69%) paediatric patients were also seen during this period. People in the 4th decade (11.8%) were more frequently affected than those in the 5th decade (3.6%)

Table 2: Age distribution of 759 AIDS patients seen in LUTH between 1992 and 1996

Age in Years	No of Patients	Percentage (%)
2 – 10	28	3.69
11 – 20	205	27.01
21 – 30	406	53.50
31 – 40	90	11.80
41 – 50	29	3.82
51 – 60	1	0.13

Risk factors

The risk factor as seen in these patients are presented in Table 3. Of the 759 patients, 503 were males and 256 were females with a male: female ratio of approximately 2:1. 388 (51%) were married and 371 (49%) were single. Multiple heterosexual intercourse was a major risk factor as 577 (76%) of the 759 patients gave a history of having more than one sexual partner. Also 221 (29%) gave a history of having been treated for genital infections in the past five years. About 10% gave a history of blood transfusion, 6% of the patients denied all known risk factors including homosexuality or intravenous drug use.

Table 3: Risk factors in 759 AIDS patients seen in LUTH: 1992 – 1996

Risk factors	No. of patients	Percentage
Multiple heterosexual partners	577	76.00
Homosexuality	-	-
Intravenous drug use	-	-
History of STD	221	29.15
History of blood transfusion	73	9.96
Positive partner	39	5.16
No identifiable risk factor	45	5.93

Clinical manifestation

The clinical features of the 759 AIDS patients are presented in Table 4. The commonest symptom was progressive loss of weight which occurred in 591 (77.86%) of the 759 patients. Prolonged fever was also common (73%) followed by chronic cough in 50%. Generalized painless lymphadenopathy and chronic diarrhoea were also frequent – 40% and 35%, respectively. Skin lesions were seen in about 35% of the patients. Of these pruritic dermatitis was the commonest, 25% followed by Herpes Zoster in 9.88% Nine (1.18%) patients presented with periorbital herpes lesions (Herpes Zoster Ophhalmicus). Pulmonary tuberculosis diagnosed by sputum smear positivity and chest roentgenoraphy was found in 15% of cases while 50 (6.64%) of the patients had oropharyngeal candidiasis diagnosed clinically by inspection of the oral cavity.

AIDS defining illnesses – Kapoi's sarcoma, non-Hodgkins lymphomas and cervical cancer – were uncommon presentation in this series. [Table 4.] The major neurological manifestation was peripheral neuropathy.

Table 4: Clinical features of 759 AIDS patients

Clinical Features	No. of patients	Percentage
Major Criteria		
Progressive weight loss	591	77.86
Prolonged fever	555	73.12
Chronic diarrhoea	266	35.05
Minor Criteria		
Chronic cough	381	50.19
Pulmonary tuberculosis	115	15.15
Pruritic dermatitis	190	25.03
Herpes zoster	75	9.88
Oropharyngeal candidiasis	50	6.58
Generalised painless lymphadenopathy	303	39.92
Others		
Kaposi's sarcoma	4	0.52
NHL	5	0.65
Cervical cancer	1	0.13
Herpes Zoster ophthalmicus	9	1.18
Genital ulcers	61	8.03
Peripheral neuropathy	14	1.84

Discussion

In this study, only 15.5% of suspected AIDS patients were found to be seropositive for HIV infection. This finding will suggest that WHO criteria are not being strictly applied in the selection of symptomatic patients for HIV testing or that, the WHO criteria may not be specific in defining AIDS illnesses in our environment. Berkley (6) had fond that among 348 HIV infected patients, 115 (21%) had none of the five major clinical criteria of HIV infection used in the provisional WHO Banjul Clinical AIDS definition.

Age distribution of AIDS cases in this study is similar to HIV seroprevalence for the population of Uganda by age and gender as compiled by the Center for International Research, U.S. Bureau of the Census. In this Uganda report, people in their third decade are mostly affected. For the female population, 26% and 17% were in the age range of 20-24 and 25 –29 years, respectively, or 43% for 20-29 years. For the male population of the same age range, seroprevalence rate was about 39%. The prevalence of the disease (53%) in the third decade (as fond in the present study) does not necessarily imply that preventive energy should be targeted at this age group alone. Rather, more attention should be given to the teenage group since the majority of people who become symptomatic in their third decade may have acquired the infection in their teenage years.

In most parts of the world particularly at the outset of AIDS pandemic, more males are affected than females. In most African countries however, women were more affected than the men as was the experience in Uganda. Central African Republic Equitorial Guinea and Gabon. Our present finding of male female ratio of 2:1 is, however similar to the findings in Cote d'Ivoire with the same sex ratio. Single persons in this study are not more likely to be infected than married persons. This pattern was also observed in the Ugandan study

Like in most other African countries, our study has confirmed that the predominant mode of HIV transmission is by heterosexual intercourse. Factors which have been advanced for this predominance include large volume of commercial sex workers in Sub-Saharan Africa [13], sexual promiscuity, presence of many other cofactors of infection particularly other sexually transmitted diseases and economic pressures forcing women into prostitution.

Although unprotected sexual intercourse constitutes the major mode of spread of HIV infection, blood-borne HIV infection is by no means rare. N'galy had estimated that 10% of AIDS cases in Africa are attributable to transfusion with HIV infected blood [14]. A Ugandan study [8] quoted a value of 9%. The present finding of 9.88% is in agreement with these observations. The route of infection in 5.9% of our patients were not identifiable. Such observations are not rare [8,13] but possibilities include receiving injections in the market place, use of contaminated barbing instruments, ritual skin piercing and outright denial by the patient of any risk factor. Data on homosexuality and anal sex are scanty in Africa [8] and none was documented in this study. Weight loss is a common feature of advanced HIV infection [15] and it was thought initially to be a feature of HIV infection per se [16] consequent on slight increase in Resting Energy Expenditure (REE) in immunosuppressed individuals. It is now believed that the weight and lean body mass are normal in HIV infected persons until an opportunistic infection supervenes [17]. Marked loss of weight is a common finding in the present study with 77% of the patients having this symptom. Other factors which may predispose to wasting in these patients include: (a) the starvation response [15] caused by a combination of voluntary reduction in food intake to reduce diarrhoea and anorexia related to malabsorption (b) cachectic response in which REE is further raised as a result of inappropriate cytokine release [18].

Prolonged fever, continuous or intermittent, is one of the three major criteria of WHO AIDS defining symptoms. It is the second commonest presenting symptom in our series. The cause of this symptom has been attributed to monocyte macrophage functional derangement in patients with HIV infection [19]. The monocytes produce increased amount of tumor necrosis factor [20] (cachectin), the cytokine which is thought to mediate profound wasting and prolonged fever in this condition [19].

Chronic cough (present in 50% of the present series) is not an uncommon feature in AIDS and is regarded as a minor sign of the disease by WHO [7]. In a review of 196 cases of AIDS in Kinshasa, cough was a presenting symptom in 37% of the patient's [21]. The cause of persistent cough is uncertain but a prospective cohort study of 1116 persons with HIV infection [22] may suggest that upper respiratory tract infection (which occurred in 33%) and acute bronchitis (which occurred in 16%) may be the major causes of the persistent cough.

The association between HIV and tuberculosis is well described [23]. In any given population, the frequency of clinical tuberculosis will be determined by the pre-existing prevalence of positive skin tests. Thus, in the Dominican Republic, prevalence rate was 15% [24], in Uganda 2.6% [25], in Nairobi 19% [26] and in Abidjan 35% [27]. A prevalence level of 15% has been documented in the present study.

Chronic diarrhoea, generalised painless lymphadenopathy, skin lesions and oropharngeal candidiasis are not uncommon features of AIDS in Nigeria as reported by others [5,28,29]. Associations of

Kaposi's sarcoma [30] and non-Hodgkin's lymphoma [31] with AIDS were described as early as 1982. It has been stated that in Africa, 10-20% of AIDS patients have their condition first indicated by Kaposi's sarcoma [12]. This is not our experience as only 0.52% of our patients had Kaposi's sarcoma. It is also believed [12] that approximately 3% of AIDS diagnoses in all risk groups and in different geographic locations were through initial diagnosis of non-Hodgkins lymphoma. The present data suggest a much lower occurrence in Nigeria. It is evident sfrom our experience that AIDS is now a public health problem in Nigeria. It is important that health care workers be aware of the diversity of presenting symptoms and indicator diseases.

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