



Pattern of Cutaneous Pathology among a Cohort of HIV/AIDS Patients Accessing Care in a Rural/Suburban Adult ART Clinic in Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author TATS designed the study, wrote the protocol, and wrote the first draft of the manuscript. Authors GMA and PE performed the statistical analysis and managed the analyses of the study. Author CA managed the literature searches. All authors read and approved the final manuscript.

Research Article

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ABSTRACT

Background: Cutaneous diseases are common in patients with HIV/AIDS however there are few documented reports of these lesions from some parts of world such as Nigeria and West Africa.

Objective: The aim of this study was to identify cutaneous pathologies in patients attending an adult outpatient (HIV/AIDS) clinic department in a rural/suburban centre in the south geopolitical zone of Nigeria.

Additionally it also aims to determine if there are differences in the pattern of presentation as compared to patients seen in other parts of the country and the world.

Methods/Design: This is a prospective observational study conducted in the adult antiretroviral (ART) clinic of Irrua Specialist Teaching Hospital Irrua Edo State Nigeria over a 12 month period involving HIV positive patients.

All patients with skin complaints are included in the study while other patients without skin complaints are generally excluded.

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Results: A total of 9460 patients were seen during this period in the clinic including old, new and repeat visits.

Four hundred and ninety patients had various dermatologic complaints at various times giving a 5.18% prevalence of the cutaneous pathology. The mean age of the patients was 38 ± 10 years with a male: female ratio of 1:1.4(140:350).

For easy of analysis these lesions were grouped into infective and non-infective pathologies. Infective pathologies dominated the main manifestation (viral- 37.1%, fungal 24.3% and bacterial 2.9%) and non-infective mainly neoplasms 5.7%, drug reactions 11.4% and others 18.6% (comprising post inflammatory hypopigmentation and hyperpigmentation, pruritic eruptions of HIV, and papularurticaria (insect bite reactions). Lesions are generally more florid and widespread in these patients particularly at lower CD4 counts.

Conclusion: Cutaneous manifestations of HIV infection are common even when not deliberately sought out for. They range from infections to neoplasms and drug reactions. They can be the main reason for initial presentation to the clinic and without prompt recognition and treatment patients care will be incomplete.

Keywords: Cutaneous; Pathology; HIV; Pattern.

1. INTRODUCTION

HIV infection predisposes to opportunistic infections and malignancies. This is reflected in all organs and systems in the body. Cutaneous manifestations are common in patients with HIV infection and tend to be more frequent as immunodeficiency progresses [1-3].

The effect of HIV on the skin has been poorly studied in sub-Saharan Africa that carries the bulk of the burden of the infection and where more than two-thirds of all HIV-positive people live in the world [4].

This is particularly applicable to Nigeria which has the largest black population in Africa. Clinical cutaneous manifestations of HIV infections has previously being documented in Nigeria by Ojukwu et al. [5] and lately by Umoru et al. [6] among paediatric HIV patients but such studies are few among adult patients and particularly in the rural areas where a large part of the population resides or retire to when their health starts to deteriorate. These may be due to the dirth of dermatologists available to review these skin problems which may be the presenting initial feature of HIV infection.

Viral and fungal skin infections are particularly common as the immune status wanes [5-7]. Also cutaneous drug eruptions assume an important dimension with treatment of both HIV infection itself as well as the opportunistic infections it predisposes to [8].

This study therefore aims to look at the pattern of cutaneous pathology in HIV infected adult patients accessing care in a rural/suburban setting in Nigeria and contribute to the available literature on the subject in this part of the world.

2. METHODOLOGY

This is a prospective observational study conducted in the adult antiretroviral (ART) clinic of Irrua Specialist Teaching Hospital, Irrua, Edo State, Nigeria.

All adult non pregnant HIV infected patients are offered specialist care in this clinic ranging from counselling to treatment for those require it (Pregnant women are generally referred to the PMTCT clinic for care till delivery before being transferred back to the adult clinic).

Patients with skin complaints are provided dermatologic consultation in the clinic apart from the other care. Averages of 200 patients are seen per week.

The study was conducted over a 12 month period from the beginning of January 2011 to the last working day in December 2011.

All patients with skin complaints are included in the study while other patients without skin complaints are generally excluded. A consent form is signed by patients after adequate explanation by the clinic nurses that they may be included in a study and patients that decline are not denied appropriate care.

Diagnoses were mainly clinical except for cases of neoplasms where histological confirmation of skin biopsy specimens was obtained.

Approval was obtained from the hospital research and ethics committee.

Statistical analysis was by the Epi info statistical software and P value was significant at $P < 0.05$.

3. RESULTS

A total of 9460 patients were seen during this period in the clinic including old, new and repeat visits. The mean age of the patients was 38 ± 10 years with a male: female ratio of 1:1.4.

Four hundred and ninety patients had various dermatologic complaints at various times. This gives a prevalence of 5.18% of all complaints. These are grouped together for ease of analysis into infective and non-infective pathologies.

The Table 1 below shows a summary of the general breakdown of the dermatologic complaints. Table 2 provides a breakdown of the cutaneous pathologies while Table 3 shows the viral skin pathologies. Table 4 shows the fungal skin pathologies encountered while Table 5 shows the bacterial conditions seen. Table 6 reveals the neoplastic conditions seen while Table 7 lists the cutaneous drug reactions encountered.

Table 1. Age and sex distribution of patients with dermatologic complaints

Age group in years	10-19	20-29	30-39	40-49	50-59	60-69	Total
	6	86	197	109	78	14	490
	M-4	M-16	M-60	M-25	M-26	M-9	M-140
	F-2	F-70	F-137	F-84	F-52	F-5	F-350

Table 2. Breakdown of cutaneous pathologies

Pathology	Frequency	Percentage %
Viral skin conditions	182	37.1
Fungal skin condition	119	24.3
Bacterial skin conditions	14	2.9
Neoplasms	28	5.7
Drug reactions	56	11.4
Others include post inflammatory hypopigmentation (23) and hyperpigmentation (23), pruritic papular eruptions of HIV (23), and papularurticaria (insect bite reactions) (22).	91	18.6
Total	490	100%

Table 3. Viral skin changes observed

Pathology	Frequency	Percentage %	Average CD4 count(cells/ul)
Plain viral warts	28	15.4	187±66
Genital warts	35	19.2	176±52
Herpes Zoster	49	27.0	281±67
Molluscumcontagiosum	14	7.7	30±13
PityriasisRosea	21	11.5	250±55
Herpes simplex	28	15.4	135±23
Varicella Zoster	7	3.8	277±56
Total	182	100	

Table 4. Fungal skin conditions

Pathology	Frequency	Percentage %	Average CD4 count
Onychomycosis	7	5.9	120±17
Tineacorporis	63	52.9	143±21
Pityriasisversicolor	14	11.8	317±33
Serborrheic dermatitis	28	23.5	58±13
Interdigital candidiasis	7	5.9	110±15
Total	119	100	

Table 5. Bacterial skin conditions

Pathology	Frequency	Average CD4 count
Genital ulcers(syphilitic & LGV)	14	70±21

Table 6. Neoplastic conditions

Pathology	Frequency	Percentage %	Average CD4 count
Kaposi sarcoma	21	75	38±08
Pyogenic granuloma	7	25	29±05
Total	28	100	

Table 7. Cutaneous Drug Reactions

Medication	Frequency	Percentage %	Average CD4 count
Cotrimoxazole	28	50	152±20
Nevirapine	28	50	233±13
Total	56	100	

4. DISCUSSION

The prevalence of cutaneous complaints found in this study was 5.18%. This is similar to the 5.4% prevalence found by Nnoruka in Enugu south east Nigeria [9]. This may be due to the similar sociodemographic characteristics of the studies. It however differs slightly from the 4.3% prevalence recorded by Yahya [10] in Kaduna North central Nigeria. This maybe a reflection of the different baseline prevalence of HIV infection in different parts of Nigeria.

The prevalence of cutaneous manifestations however appears to be higher in sister African countries of Cameroon [11] and Tanzania [12] as noted by Josephine et al and Pallangyo among their cohorts of patients studied. In other parts of the world similar results are also observed. For instance in the study by Sivayathorn et al. [13] in Bangkok the prevalence of skin infections in different groups of HIV patients studied were different. In AIDS patients it was 14.8%, while in symptomatic HIV patients it was 9.4% and it was 7.5% in asymptomatic HIV patients. This generally reflects increasing cutaneous pathology with waning immune system.

The slightly higher female preponderance of patients observed in this study may be due to the general increased female population of the patients compared to males. This has previously been observed in this centre [14]. Josephine et al. [11] however noticed a preponderance of males in their study and attributed this to the earlier attention that females are more likely to pay to their appearance and aesthesis compared to their male counterparts.

Viral skin conditions accounted for the lion share of the cutaneous pathologies at 37.1% in our study followed by fungal infections accounting for 24.3%. Herpes Zoster and plain viral warts accounted for the highest cutaneous viral lesions at 27% and 15.4% respectively of the viral skin manifestations. This is similar to what was observed by Josephine et al. [11] in which herpes zoster accounted for 28.1% of cutaneous features among their cohort of patients. Herpes zoster is also the commonest viral skin pathology reported from patients in Togo [15] and Dares- Salam [16].

Plain viral warts appears common in HIV patients from this part of Africa particularly in paediatric patients as has been previously reported by Umoru et al. [5] and Salami et al. [7] in Nigeria. Plain viral warts found are flat wart like lesions that present as scaly hyper- or hypopigmented confluent linear patches and mildly raised plaques are widely distributed on the hands, arms, and face.

There is increasing evidence that the major predisposing factor to the development of this viral infection is a dysfunction in cell-mediated immunity as a result of the HIV infection that is a potent suppressor of all forms of immunity [17]. These usually develop as the immune status of the patient continues to decline.

The main fungal pathology found in our study was Tinea corporis occurring in 52.9% of patients followed by seborrhoeic dermatitis occurring in 23.5% of the patients. The prevalence of Tinea corporis found in this study is similar to the 53.7% reported by Kaviarasan et al among their cohorts of studied HIV patients [18]. 23.58%), pityriasis versicolor (21.14%) and seborrhoeic dermatitis in 12.19%. Similar to our findings also Sivayathorn et al. [12] reported a prevalence of 21% seborrhoeic dermatitis their patients. It is however in contrast to what Pitche et al. [15] observed in Togo among their own group of patients and as well as by Mohammed et al. [16] in Tanzania.

Goodman et al. had observed that the prevalence of dermatophytosis was four times higher amongst HIV infected population and maybe extensive or appear atypical in HIV infected individuals [19]. Various studies has also shown the increasing incidence of dermatophytosis in HIV infected patients even at the early stages of infection and hence it becomes imperative for a dermatologist to have a good knowledge of cutaneous manifestations of fungal infections in those infected with HIV [20,21].

Kaposi sarcoma accounted for the bulk of neoplasms 5.7% seen in our study population with the common sites of the lesions being on the thighs, abdomen, back and face. This is lower than the 17.4% reported by Osimeet et al. [22] in Benin city Nigeria amongst HIV positive patients presenting with neoplasms. This may be a result of the urban setting of Benin City (and consequent increased prevalence of HIV infection) as against the rural setting of this study. However, Josephine et al. [11] reported a similar prevalence to our own among their cohort of patients. This is in sharp contrast with the zero prevalence reported from Bangkok [12] and Singapore [23]. This may be a reflection of the different geographical locations of the study populations and perhaps due to the greater prevalence of human herpes virus 8 (HHV8) infections than in other parts of the world [24-28]. Additionally in North America and Europe, Kaposi sarcoma is reported more among homosexuals than in heterosexuals [28,29]. This may explain why it is commoner in African HIV patients where the heterosexual route is the commonest route of transmission and acquisition of the infection and this has been noted by other workers as well [24-31].

The prevalence of cutaneous drug reactions seen in this study was 11.4% with cotrimoxazole and nevirapine being the major culprit drugs that patients reacted to. This is higher than the 3.9% prevalence reported by Josephine et al. [12]. Drug eruptions are particularly notorious among HIV patients as has been previously documented [8] sometimes even resulting in mortalities as noted by Hira et al. [32] in Zambia when certain anti tuberculosis agents are administered to these group of patients. Because cotrimoxazole and nevirapine are two core drugs necessary for the care of these patients, this type of reactions will still continue to be seen despite better anticipation and prevention of its occurrence.

5. CONCLUSION

Our study has also demonstrated that the cutaneous manifestations of HIV infection are common even when not deliberately sought for and they may range from simple infections such dermatophytosis to more sinister neoplasms such as Kaposi sarcoma and drug eruptions. They can occur at different stages of the illness but tends to occur more with waning immune status.

Finally, according to Garman et al. [33] because dermatologic manifestations may be the first clue of HIV infection, offering HIV testing to affected individuals can lead to early diagnosis and treatment of HIV infection and, ideally, a decrease in disease progression and transmission. Also the care of the skin in patients with HIV/AIDS will contribute significantly to a reduction in morbidity as well as improving the overall quality of life of these patients.

6. LIMITATIONS

This study was conducted among patients attending the outpatient department with cutaneous complaints. The observed prevalence will therefore likely be lower than if a deliberate search of cutaneous pathology is made without waiting for them to come out with their complaints.

CONSENT

All authors declare that written informed consent was obtained from the patients for publication of this study.

ETHICAL APPROVAL

All authors hereby declare that the study was examined and approved by the appropriate hospital ethics committee and was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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