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Pattern of Neurological Disorders among HIV Seropositive Adult Nigerians with Psychiatric Moridity

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Abstract: The neurological complications of HIV infection are still an unresolved problem and contribute importantly to patient morbidity and mortality. Myriads of neurological conditions can complicate HIV/AIDS. These include directly HIV-associated complications, opportunistic infections and neoplasms. Neurological complications can also be provoked by so called immune reconstitution phenomena. Overall, secondary disease of the CNS occurs in approximately one-third of patients with AIDS. Neurological conditions could coexist with psychiatric illnesses especially in a setting of immunosuppression as seen in HIV/AIDS. This study aims to determine the pattern of neurological comorbidity among HIV seropositive psychiatric patients in a tertiary centre in Nigeria and hence contribute to the existing (albeit scanty) knowledge base of NeuroAIDS in Africa. All patients presenting at the neuropsychiatry Out-patient Clinics and the Accident and Emergency department of the University of Port Harcourt Teaching hospital between January 2003 and December 2005 were studied prospectively for neurological comorbidity and screened for HIV infection. One thousand six hundred and eleven psychiatric patients were seen and tested for HIV seropositivity over the study period. 61(3.8%) were found to be positive for HIV I and/or II. 31 (50.8%) had no neurological deficit, 29(46.0%) had acute/subacute encephalitis, 13 (21.3%) had peripheral neuropathies, 7 (11.5%) each had Cranial nerve palsies (I, V, VII), dysarthria /aphasia, AIDS dementia complex and epilepsy, 6 (9.8%) each had diffuse headache, meningism and amnestic syndrome, 4 (6.8%) had hemiparesis/hemiplegia, while 3 (4.9%) each had severe hemicranial headache and myopathy. There is a high incidence of neurological comorbidity among psychiatric patients with HIV infection. Mental health practitioners need to be alert to this possibility especially where life threatening conditions exist. In most African countries, economic and medical resources are less than adequate to deal with a problem of this magnitude.

Key words: Neurological disorders, seropositive adults, HIV, psychitric moridity, AIDS, Nigeria

INTRODUCTION

The Human Immunodeficiency Virus (HIV) infection and its resultant Acquired Immunodeficiency Syndrome (AIDS) remains a complex and incurable disease devastating individuals, communities and nations. Since the start of the epidemic, over 20 million people have died. Globally, the number of people living with the virus continues to grow, reaching 40 million at the end of 2004 and trends indicate that left uncheck the epidemic will continue to increase (UNAIDS, 2005). Over two third of this 40 million infected people reside in Sub-Saharan Africa where the epidemic has compounded healthcare needs, further stretching the already thin healthcare facilities in place.

The neurological complications of HIV infection are still an unresolved problem and contribute importantly to patient morbidity and mortality. Myriads of neurological conditions can complicate HIV/AIDS (Howlett *et al*., 1989). Most important are the directly HIV-associated complications, which comprise HIV-associated encephalopathy, myelopathy as well as peripheral neuropathies and muscle diseases. Next are opportunistic infections and neoplasms which include tuberculous meningitis, toxoplasma encephalitis and JC-virus related progressive multifocal leukencephalopathy, cryptococcosis, cytomegalovirus infection, HTLV-1, acanthamoeba infestation and primary CNS lymphoma. Finally neurological complications are provoked by so called immune reconstitution phenomena. Overall,

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secondary disease of the CNS occurs in approximately one-third of patients with AIDS. The availability of Highly Active Antiretroviral Therapy (HAART) is however rapidly changing the frequency and distribution of these neurological complications, Sub-Saharan Africa being once again disadvantaged by the problem of limited access to HAART in most countries. Both this limitation and poor treatments for opportunistic infections associated with HIV have become the main sources of neurological morbidity and mortality in Africa (Tadesse *et al*., 2005).

HIV/AIDS patients experience a lot of psycho-social difficulties and may present first to the psychiatrist. On the other hand, psychiatric illnesses are often characterized by behaviours that put patients at risk of being HIV infected. At risk behaviours like sharing of needles and sexual promiscuity are frequently encountered amongst psychiatric patients for example injection drug users. Sexual transmission and related sex behaviours, including exchange of sex for drugs or money, have been independently associated with injection and non-injection drug use (Windle, 1997; Zhao *et al*., 2006). Neurological conditions could coexist with psychiatric illnesses especially in a setting of immunosuppression as seen in HIV/AIDS.

This study aims to determine the pattern of neurological comorbidity among HIV seropositive psychiatric patients in a tertiary centre in Nigeria and hence contribute to the existing (albeit scanty) knowledge base of NeuroAIDS in Africa.

MATERIALS AND METHODS

All patients presenting at the neuropsychiatry Out-patient Clinics and the Accident and Emergency department of the University of Port Harcourt Teaching hospital between January 2003 and December 2005 were studied prospectively for neurological comorbidity. Following a detailed history, full mental and physical examination was carried out by two of the authors independently (S.P.C and A.E.G). Psychiatric diagnosis was established by American Psychiatric Association Diagnostic and Statistical Manual (DSM IV) (2000). Neurological diagnosis was made on clinical grounds only as there were no facilities then for nerve conduction studies, electromyography and neuroimaging studies.

Patients were screened for seropositivity to HIV after informed consent was obtained from the patient or reliable relation where patient had no insight. Patients who tested positive for HIV I and/or II were referred to the Heamatology department for CD4 positive T-lymphocytes count, full blood count, serum electrolyte, urea and creatinine estimation, liver function test and viral hepatitis screening before being commence on antiretroviral therapy by the heamatologist when necessary.

RESULTS

One thousand six hundred and eleven psychiatric patients were seen and tested for HIV seropositivity over the study period. 61(3.8%) were found to be positive for HIV I and/or II. 25(41%) of these admitted to prior knowledge of their status but had failed to seek any orthodox antiretroviral medications prior to presentation. The other 36(59%) claimed they were not aware of their status prior to been diagnosed. There were 28 male and 33 female HIV seropositive patients, giving a male to female ratio of 1:1.2. The age sex distribution of these patients is as shown in Fig. 1, with age range 22-33 years been the predominantly affected age group. 33(54.1%) of the patients were single, 17 (27.9%) were married while the other 11(18%) were divourced or separated from their spouses.

The occupational distribution of the patients is as shown in Table 1.

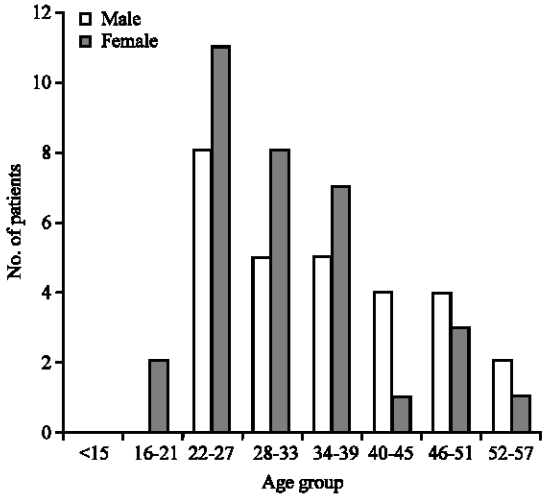

Fig. 1: Bar chart of age-sex distribution of HIV seropositive psychiatric patients

Table 1: Occupational distribution of HIV seropositive psychiatric patients

Occupation	No. of patients	(%)
Lecturers	5	8.2
Oil industry workers	7	11.5
Civil servants	3	4.9
Businessmen and women	9	14.8
Bankers	4	6.6
Students	6	9.8
Commercial sex workers	9	14.8
Unemployed	9	14.8
Commercial drivers /motor park touts	9	14.8
Total	61	100

Table 2: Distribution of neurological comorbidity among HIV seropositive psychiatric patients

Neurological diagnosis	No of patients N (%)	Rank order
No neurological deficit	31 (50.8)	1
Acute/subacute encephalitis	29(46.0)	2
Peripheral neuropathies	13 (21.3)	3
Cranial nerve palsies(I, V, VII)	7 (11.5)	4
Dysarthria /Aphasia	7 (11.5)	4
Epilepsy	7 (11.5)	4
AIDS dementia complex	7 (11.5)	4
Diffuse headache	6 (9.8)	5
Meningism	6 (9.8)	5
Amnestic syndrome	6 (9.8)	5
Hemiparesis/Hemiplegia	4 (6.8)	6
Severe hemicranial headache	3 (4.9)	7
Myopathy	3 (4.9)	7

The commonest psychiatric diagnosis recorded among the seropositive patients was moderate to severe depression- 17(27.9%) patients. This was followed by organic psychosis and substance abuse disorders with 11(18%) patients each. There were 7(11.5%) cases of schizophrenia, 9(14.8%) of anxiety disorder and 6(9.8%) of acute reactive psychosis. The distribution of findings on neurological examination of these patients is as shown in Table 2. All cases of AIDS Dementia Complex (ADC) had CD4 positive T-lymphocyte cell counts less than 200cell/ microlitre. Patients with CD4 positive T-lymphocyte cell count less than 200 tended to have more neurological comorbidity/symptoms (more than five) compared to those with higher CD4 positive T-lymphocyte cell counts.

Twenty one (34.4%) of the HIV seropositive patients were managed as in-patients in view of severity of their illness while the other 40(65.6%) were seen on out-patient basis. 5(23.8%) of the in-patients died (% mortality), 4(19%) were lost to follow up while the other 9 (42.9%) are still alive and receiving treatment. One (2.5% mortality) of the out-patient's died, 9 (22.5%) were lost to follow up while the other 30(75%) are sill on treatment and follow up.

DISCUSSION

Neurological complications of HIV contribute significantly to patients' morbidity and mortality. Central nervous system complications of HIV like AIDS dementia complex and encephalitis can present initially at mental health services. In most developing countries, there is a glaring absence of facilities for neuroimaging (except in few urban centres where the cost is often prohibitive), stereotactic brain biopsy and other diagnostic modalities required for accurate diagnosis of neurological disease. There is thus a need for a high index of suspicion amongst mental health practitioners in settings like this, where clinical data and temporal evolution is relied upon heavily to make diagnosis.

Although diagnostic facilities necessary for the accurate diagnosis of neurological disease are not available in most of Africa and autopsy reports have been few, neurological complications have been reported in as much as 60% of HIV infected patients (Levy *et al*., 1985; Koppel *et al*., 1985). 49.2% of all HIV seropositive patients in this study had one or more neurological complication. The most frequent complication found amongst our patients was acute/subacute encephalitis often with altered conciousness and irrational behaviour hence necessitating presentation at our clinics. This finding is comparable to that of Atangana *et al*. (2003) in their study in Cameroon.

Peripheral neuropathy remains the most important neurological complication of HIV and its treatment. It occurs at both the asymptomatic and symptomatic stages of HIV infection. The most common syndromes are distal symmetric polyneuropathy, inflammatory demyelinating polyneuropathy, polyradiculopathy, mononeuropathy, mononeuropathy multiplex and autonomic neuropathy (Zanett *et al*., 2004). Cranial nerve palsies are also frequently associated with HIV infection as seen in our patients. Facial nerve palsy is frequently reported among HIV infected patients with cranial nerve palsy and should prompt an HIV test (Balogou *et al*., 1998). In this series, electroneuromyography was not conducted on the patients hence some patients with early clinically asymptomatic neuropathy could have been missed. This can explain why peripheral neuropathy was not the most common neurological complication here. Additionally, altered consciousness and irrational behaviour are easily recognized as 'brain' disorders and hence could increase their chances of presenting first to neuropsychiatric services as observed in our study.

Seizure disorders were found in 11.5% of the HIV seropositive patients. Majority of patients with HIV infection and new onset seizures have secondary brain lesion as the cause of the seizures. Majority of these seizures have a high rate of occurrence. Cerebral toxoplasmosis, cryptococcal meningitis, tuberculoma, AIDS dementia complex and progressive multifocal leucoencephalopathy top the long list of potential causes of seizures in HIV infected patients (Chadha *et al*., 2000). All these complications can also result in headache. Meningism in an HIV infected patient should always prompt the clinician to investigate for opportunistic chronic meningitides especially tuberculous meningitis in most developing countries (Silber *et al*., 1999).

HIV-associated dementia complex occurs in about 20-50% of HIV-1-infected individuals (Atwood and Berger, 1993; McArther *et al*., 1993). There is a dearth of prospective studies on the incidence or prevalence of

HIV dementia in the Nigerian population especially in the Niger Delta area. The prevalence of HIV dementia among HIV positive patients in this study was 11.5%. Neurocognitive dysfunction in AIDS manifests as degrees of dysfunction from minor (no significant loss of daily function) to profound HIV-associated dementia.

CONCLUSION

This study has shown that there is a high incidence of neurological comorbidity among psychiatric patients with HIV infection. Mental health practitioners need to be alert to this possibility especially where life threatening conditions exist. In most African countries, economic and medical resources are less than adequate to deal with a problem of this magnitude. There is thus a need to continue present efforts at preventing spread of HIV infection in the continent. The need to put in place diagnostic facilities for neurological diagnosis even if on a regional basis in developing countries where the burden of HIV infection predominates cannot be overemphasized. Early appropriate treatment with antiretroviral therapy will also go a long way in preventing the onset of these neurological complications.

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