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THE RELATIONSHIP BETWEEN THE SEVERITY OF DISEASE AND PSYCHIATRIC MORBIDITY IN HIV POSITIVE PATIENTS AT A TERTIARY HOSPITAL IN NIGERIA

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Abstract

Background & aim: There are conflicting information on the relationship between the severity of Human Immunodeficiency Virus (HIV) disease and the occurrence of psychiatric morbidity in HIV positive patients; hence the need for this study within Niger Delta, Nigeria.

Method: 353 subjects enlisted into the study through systematic sampling were assessed using a questionnaire to containing socio-demographic and clinical variables, screened for psychological distress with a General Health Questionnaire and diagnoses made using Present State Examination. Data was analyzed using the statistical package for social sciences (SPSS).

Result: 241 out of 353 subjects completed the study (89 were HIV positive and 152, HIV negative). Two thirds of the patients were in the early stages of the disease. The mean duration of treatment for the patients in the earlier stages of the disease is significantly lower than those at the later stages. There is a higher prevalence of psychiatric morbidity among patients with co-infection (HIV types 1&2) compared to those with a single infection, in those at the late stage of the disease and those not receiving active anti-retroviral therapy.

Conclusion: Even though psychiatric morbidity becomes more prevalent the longer the disease, individual psychosocial and immunological factors may play a very crucial role in precipitating and modulating the expression of psychopathology in individual patients.

INTRODUCTION

Human immunodeficiency virus (HIV) infection leads to immune suppression which progresses terminally to death[1]. The introduction of the highly active anti-retroviral therapy (HAART) has changed the status of HIV infection from that of a rapidly fatal disorder to a chronic one comparable to hypertension and diabetes mellitus [2]. Consequently, people infected with HIV are living longer and healthier lives as a result of advances in anti-retroviral therapy, better medical care and prophylaxis of some of the initially fatal complications [3].

People living with HIV and AIDS are at an increased risk of co-morbid psychiatric disorders when compared to general population based rates [4]. Psychiatric morbidity associated with HIV infection includes mood disorders, substance use disorders, schizophrenia, anxiety disorders and personality disorders [5]. Cognitive disorders are reported to occur early during HIV infection while clinically evident AIDS-related dementia becomes apparent once the disease has advanced.

Several studies have tried to relate the psychopathology seen in the HIV/AIDS population to the different stages of the disease. However, differences in observations within this population have maintained a debate on the prevalence of psychiatric morbidity and severity of HIV disease.

However, there is a death of information on the relationship between the severity of HIV disease and onset of psychiatric morbidity in the HIV population from the African continent which hosts more than two-thirds of the global HIV population. This study therefore sought to investigate the relationships between the severity of HIV disease and the occurrence of psychiatric morbidity in HIV positive patients within the Niger Delta region of Nigeria.

Literature review

The critical events in HIV disease are associated with infection of subset of lymphocytes known as the T4 (helper) or cluster designation 4 positive (CD 4+) lymphocytes with gradual collapse of the body's ability to mount an appropriated cell mediated immune response. This results from a steady depletion of CD4t cell numbers throughout the course of HIV disease with consequent immune dysfunction[6,7].

There are reports that psychiatric disorders are more prevalent in the terminal stages of HIV disease than in the asymptomatic stages[8]. Indeed Lyketsoset al[9] reported a dramatic rise in depressive symptoms in AIDS patients when compared to those with stages 1 and 2 diseases. Other studies have also demonstrated higher rates of psychiatric morbidity in early HIV symptomatic patients than in HIV positive asymptomatic and HIV negative controls [10]. However, no reasons have been given for these observations.

On the other hand, other studies have reported lower rates of anxiety, mood disorders, suicidal ideations and suicide attempts in AIDS patients when compared to patients with early stage HIV disease or HIV negative controls[11,12,13]. The authors argues that these observations may result from denial, refocusing of life's goals and the psychological changes related to CNS impairment or that AIDS patients may have'worked through' the normal coping process involved in terminal illnesses and had gotten to the level of acceptance.

However, other studies have maintained that HIV status, CD4t count or stage of HIV disease are not by themselves strong productions of mood and anxiety disorders[14,15].

MATERIALS AND METHODS

This was a two-stage cross-sectional comparative study that was conducted at the retro-viral disease clinic and the general outpatient department of the University Port Harcourt Teaching Hospital.

Materials

Subjects who consented to participate in the study were assessed using a pretested specially designed questionnaire to elicit socio-demographic and clinical variables including age, gender, sexual orientation, type of HIV infection, CD4 count and stage of HIV disease. The subjects were also screened for psychological distress with the 12 -item general health questionnaire (GHQ – 12). A cut off point of 3 was adopted, and scores of 3 and above was indicative of psychological distress. Such subjects, who were regarded as cases, were thereafter assessed for psychopathology by using the 10th version of the present state examinations (PSE – 10). Symptoms from this instrument were then used to generate a diagnosis according to the definitions and criteria of ICD – 10.

Procedure

At the initial stage, a list of all the patients, attending both clinics was obtained from the medical records and this constituted the sampling frame. The sampling method adopted was systematic sampling technique (nth sample). The first patient to be interviewed was selected by balloting, and subsequent ones systematically of 1 in 5 until the quota was satisfied.

Three hundred and fifty three subjects were recruited into two groups over a four month period. The first group (group A) was recruited from the retroviral disease (RVD) clinic of the University of Port – Harcourt Teaching Hospital and included all confirmed HIV seropositive patients who had no past histories of neurological or psychiatric disorders and who were not chronically ill. The second group (group B) ware recruited from the general outpatient department (GOPD) of the same hospital, and included all confirmed HIV seronegative patients without a history of a chronic medical or psychiatric disorder. Subjects in both groups were between the ages of 18-60 years and gave informed written consent to participate in the study.

Ethical consideration
Permission for the study was obtained from the ethical committee of the University of Port-Harcourt Teaching Hospital to ascertain that the methodology of the study did not contravene laid down regulations for experiments involving human beings. Patients were duly informed, and the objectives of the study explained to them.

Statistical analysis
Data was pre-coded to ensure accuracy and was analyzed using the 15th version of the statistical package for social sciences (SPSS – 15). Tables were generated according to objectives and the t – test and analysis of variance (ANOVA) were used to analyze parametric variables, while the chi – square and fisher's exact test were used for non-parametric variables where applicable. For risk factors analysis, variables with significant association with psychiatric mobility during bivariate analysis were entered into the regression equation. A reference category was also entered to facilitate interpretation of odds ratios. All analyses were set at 0.05 level of significance two-tailed test.

RESULTS

This study recruited 353 subjects, however, only 241 subjects completed the study. Among the 241 subjects that completed the study, 89 were HIV positive and receiving care at the retroviral disease clinic of the University of Port Harcourt Teaching Hospital while 152 subjects were HIV negative and were attending the general out-patient department of the same hospital for varied minor ailments.

Findings from this study show that the majority of HIV positive patients had co-infection with HIV types 1 and 2 as shown in table 1. The table further shows that about two-thirds of the patients were in the early stages of the disease (stages 1 and 2), while just over a quarter of them had CD4t counts less than 200/mm^3.

Table 2 shows the duration of HIV diagnosis. According to the table, there were significant differences between the mean scores of duration of diagnosis and mean duration of treatment $F=63.0$, $P<0.001$.

Table 3 shows the association between psychiatric morbidity and stage of HIV disease as well as duration of illness. This table shows that the prevalence of psychiatric morbidity tended to increase with an advance in the stage of HIV disease, but this observation did not attain statistical significance. It also shows that psychiatric morbidity was commoner in HIV patients with a diagnosis of less than 23 months compared to those with a longer period of diagnosis. However, this difference was not statistically significant.

Table 4 further shows other clinical correlates of psychiatric morbidity in HIV patients. According to the table, there was a higher prevalence of psychiatric morbidity among patients with co-infection with HIV types 1 and 2 in relation to patients with type 1 or 2 alone. Psychiatric morbidity was also more prevalent in patients with late stage disease compared to those in the early stages of the disease and among patients with low CD4t counts relative to those with higher counts. The table also shows that psychiatric morbidity was more prevalence in patients who were not receiving highly active anti-retroviral therapy (HAART) compared to patients who were receiving treatment. However, none of the observed differences were of statistical significance.

Table 1: Pattern of HIV Infection among the Respondents

Variable	patient N (%)
Type of HIV Infection	
1	21(23.6)
2	1(1.1)
1and2	67(75.3)
Total	89(100)
Stages of HIV Disease	
Early (1 and 2)	58(65.2)
Late (3 and 4)	31(34.8)
Total	89(100)
CD4+ Counts	
≤200	24(27)
200 – 499	39(43.8)
≥500	26(29.2)
Total	89(100)
Mean CD4+count	364/mm^3

Table 2: Duration of HIV Diagnosis and Mean Duration of Treatment in Months

Duration of Diagnosis (in months)	Mean	SD
1-12	4.42	4.03
13-36	23.00	7.72
37-60	42.29	13.26
≥61	42.00	42.42
	p <0.001	

Table 3: Comparison of psychiatric morbidity with stage and duration of HIV disease

Stage of HIV Disease	Psychiatric Morbidity Yes N(21) n(%)	No N(68) n(%)	x^2	P value
1	5(14.3)	30(85.7)	3.22	0.36
2	6(26.1)	17(73.9)		
3	3(37.5)	5(62.5)		
4	7(30.5)	16(69.5)		
Duration of HIV (in months)				
1-23	9(24.4)	28(75.6)	0.02	0.9
>23	12(23.1)	40(76.9)		

Table 4: Clinical correlates of psychiatric morbidity in HIV patients

Variable	Psychiatric morbidity present N=21 n(%)	Psychiatric morbidity absent N=68 n(%)	x^2	P value
HIV type				
1	3(14.3)	18(85.7)		
2	---	1(100)	1.72	0.42
1&2	18(26.9)	49(73.7)		
HIV stage				
1&2	11(18.9)	47(81.1)		
3&4	10(32.3)	21(67.7)	1.98	0.16
Mean CD 4 count				
<364	15(30.0)	35(70.0)	2.6	0.1
≥364	6(15.4)	33(84.6)		
Sexually Transmitted Infections				
Yes	3(12.0)	22(88.0)	2.59	0.16
No	18(28.1)	46(71.9)		

Median Duration of Diagnosis (in months)				
1-23 months	9(24.3)	28(75.7)	0.02	0.9
>23 months	12(23.1)	40(76.9)		
Use of HAART				
Yes	20(23.3)	66(76.7)	0.16	0.6
No	1(33.3)	2(66.7)		
Duration of HAART Use (in Months)				
0-24	14(23.7)	45(76.3)	0.00	0.97
>24	7(23.3)	23(76.7)		
Family history of Psychiatry Disorder				
Yes	2(33.3)	4(66.7)	0.34	062
No	19(22.9)	64(77.1)		

DISCUSSION

This was a two stage case control study that provided information on the relationship between the severity of disease and prevalence of psychiatric morbidity in HIV positive patients attending the retroviral disease clinic of the University of Port Harcourt Teaching Hospital in Port Harcourt Nigeria.

The findings from this study show that about three of every four patients had a HIV co-infection with HIV-1 and HIV-2. This finding is in keeping with a previous study carried out in this centre which reported that a co-infection with HIV-1 and HIV-2 accounted for over 90% of HIV infections in this region[4]. However, this contradicts other reports that have suggested that HIV-2 is a commoner cause of HIV disease in the West African sub-region[1,17]. The heterogeneous nature of the study location which is a cosmopolitan city of an oil producing state encourages cross-border trade and may attract persons who are reservoirs of the more widespread HIV-1 to live and work there. It is therefore not surprising that the prevalence of psychiatric morbidity was higher in patients that had HIV disease caused by HIV-1 and HIV-2.

A majority of the patients in this study were in the early stages of HIV disease (stages 1 and 2), however, psychiatric morbidity was more prevalent in patients who were in the later stages of the disease (stages 3 and 4). Similarly, psychiatric morbidity was more prevalent in patients' with CD4t counts less than 364/mm^{3}when compared to those with higher counts suggesting that psychiatric morbidity was more prevalent in more severe disease. However, it must be reported that these associations were not significant.

This study also noted that psychiatric morbidity was more prevalent in patients who were not receiving any anti-retroviral therapy compared to patients who were currently receiving highly active anti-retroviral therapy. This finding may suggest that anti-retroviral therapy ameliorates the deleterious effects of HIV and protects against psychopathology, but this observation was not significant and can therefore not be generalized.

The relationship between the duration of illness and occurrence of psychiatric morbidity in HIV disease remains obscure. While this study noted a higher prevalence of psychiatric morbidity in patients with a diagnosis of HIV disease of less than twenty three months compared to those that had been diagnosed for a longer period, it must be noted that diagnosis of HIV infection does not correspond with time of infection with the virus. Individual psychosocial and immunological factors may play a more crucial role in this regard.

In conclusion, while this study observes an increasing prevalence of psychiatric morbidity with advanced stage and severity of HIV disease in HIV positive patients the clinical stage of HIV disease, CD4t counts, duration of disease and use of highly active anti-retroviral therapy do not determine the occurrence of psychiatric morbidity in this clinical population.

Limitations

This study was limited by a number of factors such as;

1. This was a hospital based study. A community based survey would have given a better representation of the general population.
2. The cross-sectional nature of this study does not permit causal inferences. A longitudinal study may provide a better evaluation of psychiatric problems in this group of patients.

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