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Neuropsychiatric Manifestation in HIV/AIDS

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Abstract
Aim: *To study the neuropsychiatric manifestations in patients with HIV / AIDS.*
Design: *Cross – sectional study*
Methods: *50 male & female HIV positive / AIDS patients in the age range of 18-60yrs of age without any past psychiatric / organic brain disorder/ current alcohol & substance dependence were assessed using semi-structured socio-demographic Performa, Mini international neuropsychiatric interview (MINI PLUS) and Mini mental status examination (MMSE) to diagnose psychiatric disorders and cognitive impairment at Department of medicine, RIMS hospital, Imphal between 2009-2010.*
Results: *Participants were mostly above 35yrs old (74%), male (70%), Hindu (72%), married (88%), above matriculate (68%), employed (68%) residing in urban area (72%) who acquired HIV infection through sexually (66%) and IVDU (34%). Diagnosis represented in the sample were the MDD 38% (P=0.000), GAD 34 %(P=0.002), Social phobia 34 %(P=0.002), Panic disorder (12%). PTSD (10%), Melancholia (10%), Dysthymia (8%), Psychosis (3%) & Agoraphobia (2%). Suicidal intent was expressed by 26%.*
Conclusion: *This study suggest that the rates of psychiatric manifestation in HIV positive/ AIDS patients are significantly higher than the general population which emphasizes the need to recognize the psychiatric morbidity among people living with HIV / AIDS.*

Introduction

Since its appearance in 1981, HIV/AIDS has infected more than 60 million people and claimed over 22 million lives.[1] In 2009; 33.3 million people were living with HIV/AIDS, 15.9 million women and 2.5 million children are infected and there were 1.8 million deaths due to AIDS in 2009. The rate of new infection is 2.6 million. The established number of people living with HIV/AIDS in India is 2.31million of which 39% are female and 3.5% children with highest prevalence rate of HIV in Andhra Pradesh, Maharashtra, Tamil Nadu, Karnataka, Manipur and Nagaland (NACO 2007).[1] In addition to impairment in immune functions, evidence has suggested that HIV is neurotropic. It should therefore be anticipated that neuropsychiatric complication might be common in HIV positive individuals during all phases of HIV infection.[2] The most common neurologic manifestations are

minor cognitive and motor disorder (MCMD) and HIV-associated dementia (HAD).[3] The documented prevalence is 15 to 30% in US and Europe while India is reported to be about 1-2% of HAD.[4] The diagnosis of HAD is established in patients with symptoms ranging from apathy, depression to mania, and psychosis in absence of any medical causes.[5]

Patients suffering from severe organic disorders are found to be burdened by higher prevalence of mental disorders which could rise up to 30 – 50 %.[6] Due to the prolonged life expectancy achieved by the newer antiretroviral regimens, the risk for mental disorders in HIV-positive patients is in the range of individuals suffering different chronic conditions.[6] Psychiatric patients are high risk for acquiring HIV infection. On the other hand, patients infected with HIV are more susceptible to develop psychiatric illness.[7] Moreover; once the person is infected the course of the disease may be influenced by his and her well being. Secondary mania may also be linked to medications such as zidovudine, didanosine and efavirenz overdose. Thus, while HIV medications have been sporadically reported as causative agents for mania, they play a pivotal and life saving role in the treatment of this disease and may actually demonstrate a protective effect against mania in late stages HIV disease.[8]

The multiple challenges posed by the HIV antibody test notifications, emergence of the symptoms of the disease, vocational and lifestyles alterations; changes in interpersonal relationships and the burden of complex medications are highly stressful.[9] This morbidity might spoil the efforts carried out at primary prevention and frequently diminishes coping capacity. Also, it is associated with higher mortality and lower antiretroviral treatment compliance, and causes severe impairment of the quality of life among HIV-infected individuals.[6] Therefore, the present study was undertaken to study the neuropsychiatric manifestation in HIV/AIDS which will help in developing effective intervention to improve the quality of psychological wellbeing of the people living with HIV/AIDS.

Materials and Methods

The study was conducted in 50 consecutive sample of confirmed cases of HIV seropositive both male (35) and female (15) between 18-60 years attending RIMS hospital. Most of the participants (33) were taken from ART centre and 17 inpatients from department of Medicine without any past psychiatric / organic brain disorder/current alcohol & substance dependence who consented to be included in the study sample. All the participants were interviewed using semi-structured questionnaire that includes information regarding socio-demographic characteristics, mode of acquiring HIV infection, length of HIV illness, status of the HAART use and levels of CD4 count. MINI Plus and MMSE were administered to diagnose DSM-IV/ ICD-10 psychiatric disorders. The data were analyzed using SPSS version-17 to obtain the distribution of socio-demographic variables and frequency of neuropsychiatric manifestations. Ethical clearance was granted by the institute ethical committee, RIMS, Imphal.

Results

Majority of the participants were married (88%) and above 35years of age (62%). Males constitute the two-third of the study population (70%) but psychiatric disorders were slightly more common in females (80%). A significant proportion of participants were urban Hindus (72%) who had attained matriculate or above educational standards (68%). A substantial percentage (68%) of them were employed or earning their livelihood by other means. Housewife constitutes 20% who acquired HIV infection through their husband. The per capita income of 50% of the participants was less than five thousand per month. Majority (66%) acquired HIV infection through sexual contact while 34% of individuals had a past history of intravenous drug use. Most of the participants (50%) had duration of seropositivity

of less than one year with substantial proportion (56%) of them not taking HAART. Fifty four percent of the study population had baseline CD4 cell count above 200 while 22% have count below 200. However, CD 4 cell count of 24% was not available.

Psychiatric Diagnosis

Table 1: Proportion of psychiatric disorder that is pure and co-morbid with another psychiatric illness

	Number of psychiatric diagnosis				Total
Total No. of HIV positive individuals	One diagnosis	Two diagnosis	Three or more diagnosis	No diagnosis	
	17(34%)	07(14%)	12(24%)	14(28%)	50

Table 1 shows that significant proportions of the participants (72%) were having one or more psychiatric diagnosis where as 28% were not having any of the diagnosis. A considerable degree of overlap of psychiatric illness was also observed with fourteen percent (14%) and twelve percent (12%) of participants reporting two and three or more of another psychiatric illness. Only 34% of individuals had one (pure) psychiatric diagnosis.

Table 2: Distribution of psychiatric disorders among HIV seropositive individuals:

Psychiatric disorders	Psychiatric Morbidity		Chi-square Value	P=value
	Present	Absent		
MDD current	19(38%)	31(62%)	11.918	0.001
MDD past	05(10%)	45(90%)	0.176	0.675
Melancholia	05(10%)	45(90%)	2.160	0.142
Dysthymia	04(8%)	46(96%)	1.691	0.193
Suicidal intent	13(26%)	37(74%)	6.832	0.009
Panic current	06(12%)	44(88%)	2.652	0.103
Panic lifetime	05(10%)	45(90%)	2.160	0.142
Social phobia	17(34%)	33(66%)	10.017	0.002
Agoraphobia	01(2%)	49(98%)	0.397	0.529
PTSD	05(10%)	45(90%)	2.160	0.142
GAD	17(34%)	33(66%)	10.017	0.002
Psychosis	03(6%)	47(94%)	1.241	0.265

Table 2 shows the commonest psychiatric diagnosis recorded among the seropositive patients was major depressive disorder, current - 19 (38%) followed by social phobia and generalized anxiety disorder with 17(34%) patients each. There were 5(10%) cases each of MDD past and melancholia. Dysthymia were found in 8% of the HIV seropositive. Rates of other anxiety disorders such as panic disorder-current (12%), panic disorder-past (10%), agoraphobia (2%), and post-traumatic disorder (10%) were lower compared to GAD & social phobia. Three patients (6%) had psychosis secondary to mood disorder. Suicidal ideation was found in 13(26%) seropositive patients. A statistically significant relationship between the major depressive disorder-current (P-0.001), social phobia (P-0.002), generalized anxiety disorder (0.002), suicidal ideation (P=0.009) and HIV infection were found using chi-square analysis.

Table: 3: MMSE in HIV seropositive

MMSE Score	No. of individuals	Mean score	Psychiatric morbidity
0-10 (severe)	00	28.58	00
11-19(moderate)	01(2%)		01
20-24(mild)	02(4%)		02
25-30(normal)	47(94%)		33
Total	50		36

Discussion

The commonest psychiatric diagnosis recorded among seropositive individual was current Major depressive disorder (38%) which is in agreement with the finding of Israelski DM, Prentiss D et al.[10] A very high statistically significant relationship was observed between the MDD current (P=0.001) and HIV infection. Out of 19 patients who screened positive for MDD current, 5 patients had melancholic features (10%) and 3 had psychotic features secondary to mood disorder. Satapathy R & Krishna M et al.[11] also found very high rates of depressive disorder (40%).

Among the anxiety disorder spectrum, the most common psychiatric diagnosis was generalized anxiety disorder and social phobia which accounted for 17 (34%) cases each. Statistical analysis shows significant relationship between the GAD (P=0.002) and HIV seropositivity. According to Chandra PS et al[12] using hospital anxiety and depression scale found 36 percent of the patients scored above the cut-off level of diagnosis for anxiety disorders. Out of which majority fulfilled the diagnostic criteria of GAD. Post-traumatic disorder accounted for 10% which correlates with the study of Olley B et al.[13] found that PTSD was one of the most prevalent disorders at baseline and follow up 14.8% and 20% respectively. This correlation shows that little difference in percentages of PTSD presentation in our study may be due to study design and less number of study population though overall presentation of PTSD as compared to MDD and suicidal ideation was lower. There is a great overlap of Psychiatric illness in the single patient conforming to the presentation of two (14%) or three or more (24%) psychiatric comorbidity. Israelski et al[10] while in his observation said that 38% of the study population screened positive for two or more disorders with high percentages meeting the criteria for depression. Sewell MC et al[14] also reported that 28% of the anxiety disorders were comorbid with other Axis I disorders at baseline.

Suicidal ideation was seen in 26% of study population which correlates with the finding of Chandra PS et al.[12] who reported 20% of depressed patients expressed death wishes, 12% reported suicidal ideation and 8% had suicidal attempts. In this study 58% of the depressed patients and 52% of GAD expressed suicidal ideation. A very high statistically significant relationship between the MDD (P= 0.000) and suicidal ideation was observed. A relationship between the GAD and suicidal ideation was also found to be significant (P=0.002). Chandra PS et al[12] also stated in his study that HIV infected persons attempt suicide either due to discrimination or fears of it, depression being the most common cause (73%) of suicidal ideation followed by anxiety (29%).

Majority of the patients under study population were not taking HAART (56%) while 44% were taking HAART. There was no significant difference in the rates of psychiatric disorder in the two groups. Jeannette R et al[15] found that depressive symptoms were seen more on those patients who did not receive HAART. This would mean that ART played significant role not only in decreasing the viral load but may also help in increasing the coping skills motivational strategies and decreasing psychiatric co-morbidity.

In this study, MMSE score was more than 25(normal) in most of the individuals (94%) which correlates with the findings of Nebhinani et al.[16] and Sebit MB et al.[17] MMSE score of one patient was less than 19(moderate) and two

patients scored between20-24(mild). Perry S[18] stated early intellectual impairment caused by HIV may be quite mild and asymptomatic; it may escape detection by the standard mini mental state examination and recommended MMSE supplemented with evaluation of graphomotor tasks to uncover a subtle deficit or neuropsychological testing if suspicion remains high.

To conclude, this study shows that psychiatric disorders were observed in 72% of the study population with considerable degree of overlap which is higher than the rates found in the general population. 38% of the individuals screened positive for two or more psychiatric diagnosis while only 34% had one psychiatric diagnosis. Therefore health personnel providing HIV treatment need to be much more aware of the mental health issues involved, including how to treat psychiatric difficulties/ or refer. Similarly, people working in mental health need to be highly vigilant with regard to the possibility of HIV infection and to refer where necessary.

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