Original Research Article

Psychiatric Co-Morbidity among Patient with Acquired Immuno- Deficiency Syndrome

Gautam Kumar[1] (Junior Resident), Siddharth Rathore[2] (Assistant Professor), Chandrakant Salve[3] (Assistant Professor), Abhay Jain[4] (Professor and HOD) & Ritika Jain[5] (Junior Resident)

Department of Psychiatry, RD Gardi Medical College, Ujjain (M.P.)[1,2&4]
General Medicine, RD Gardi Medical College, Ujjain (M.P.)[3]
Department of Paediatrics, RD Gardi Medical College, Ujjain (M.P.)[5]

Corresponding Author: Gautam Kumar

Abstract
To determine the prevalence and kind of mental morbidity in HIV-infected patients who are visiting a specialist HIV clinic for the first time. To evaluate the relationships between mental co-morbidity and several sociodemographic variables (age, gender, education) and disease-related variables (illness duration, HIV/AIDS stages, CD4 count, HIV-TB and other co-infections, and other opportunistic infections) and association between mental co-morbidity and treatment continuation variables including poor adherence and default history. This study included 171 individuals who consistently sought medical attention at the RDGMC, Ujjain Hospital General HIV Clinic. These individuals had a preliminary screening to determine the incidence of mental comorbidity in those receiving therapy for AIDS patients. A total of 56.14% were determined to have a mental disease, while another 16.94% had an active drug use problem. The patients' lifetime rates of alcohol abuse (14.61%), nicotine drug misuse (2.33%), anxiety disorder (4.67%), and generalised depression (24.56%) frequently occurred before they were diagnosed with a disease or learned whether they were HIV positive. Screening, assessing, and treating for these disorders is essential and need to be done methodically given the high frequency of mental illnesses in HIV-infected individuals seeking medical treatment. This is best accomplished by having a psychiatric team present within HIV medical clinics as opposed to being associated with such clinics.

Keywords: - HIV/AIDS stages, CD4 count, HIV-TB, mental illnesses, psychiatric and alcohol abuse.

1. INTRODUCTION

Acquired immunodeficiency syndrome (AIDS) is known to produce serious psychiatric adverse effects. Early research identified opportunistic infections of the central nervous system as a cause of organic mental diseases with affective, delusional, or dementia-like traits (CNS). These studies identified a main AIDS dementia complex in patients without a detectable central nervous system tumor or opportunistic infection (Abers et al., 2014). Early studies connected organic psychological illnesses with neoplastic consequences, or opportunistic infections of the central nervous system, to depressive, hallucinating, adjustment, and anxiety disorders. These studies found a fundamental AIDS dementia complex in individuals with AIDS who do not have an identified central nervous system cancer or opportunistic

infection. About 50% of AIDS patients eventually develop significant cognitive impairment. Identifying behavioural factors that may affect the progression and recovery from human immunodeficiency virus (HIV) infection, describing the implications and processes of AIDS and associated illnesses, and assessing the effectiveness of interventions aimed at these behavioural outcomes and processes are important aspects of mental health research (Owe-Larsson et al., 2009). Such understanding would assist with comprehension of neuropsychiatric and mental conditions that may limit primary prevention efforts, lessen coping mechanisms, or impair medication adherence in people with and without AIDS. There are still a number of unanswered questions because the majority of studies on people with HIV have used admitted AIDS patients who were allocated for psychiatric assessment. Despite new research showing that HIV-infected individuals, regardless of their AIDS severity, experience psychological challenges in controlling uncomfortable symptoms including fever, despair, and anxiety due to the prospect of disease progression (Jallow et al., 2017). Examine the lifetime incidence of mental diagnoses in AIDS patients with mental co-morbidity in order to address these problems.

2. MATERIALS AND METHODS

clinical investigation carried out at RDGMC, Ujjain. All patients presenting to the outpatient and inpatient facilities of the Department of Medicine with a clinical diagnosis of AIDS patients comprise the study's population. The first group was made up of 171 patients who were HIV-positive but psychiatric comorbidity in people undergoing treatment for Acquired immunodeficiency syndrome patients. Full medical and psychiatric histories were obtained for each subject. In addition to basic demographic data, the psychiatric evaluation consisted of an interview which lasted approximately one hour; information was obtained on current psychological symptoms, past and present psychiatric history, and family, personal and social history (Ayehu et al., 2017). Finally, a formal mental status examination, familiar to most psychiatrists, was employed. The interview was conducted by a psychiatrist with extensive experience caring for HIV-positive patients. Psychiatric diagnoses were based on Hamilton rating scale for anxiety and depression (Bossola et al., 2012), Multi-dimensional scale of perceive social support (Stewart et al., 2014), Karnofsky's performance scale (Odell et al., 19995), Morisky medication adherence scale (Sternhell and Corr, 2002). Physical examination, routine laboratory tests (HIV Opportunistic infection (Tan et al., 2012), Drug adherence, CD4 count, Nicotine dependence syndrome, Alcohol dependence syndrome, Anxiety and depressive disorder (Castaldelli-Maia et al., 2020; Talam et al., 2008; Duko et al., 2019; Brown et al., 1992) and other appropriate tests such as CT scans and MRI were conducted as necessary. Statistical analysis is to be done using computer software, to evaluate the prevalence of psychiatric illnesses in people undergoing treatment for HIV/AIDS will be given as percentage, Chi square test was used to assess the relationship between psychiatric co morbidity and different sociodemographic factors and disease related factors (duration of illness, stages of HIV/AIDS, CD4 count, HIV- TB coinfection), to assess the relationship between psychiatric co morbidity and negative behavioural factors like poor adherence and history of defaulting and factors like support systems, functional level of patients (Deribew et al., 2013). P value was taken to be significant if It was <0.05.

3. RESULTS

Socio-Demographic Factors and Presence of Psychiatric Illnesses
A total of 176 patients were approached for the study. Of these, 2 patients did not consent to participate in the study and another 3 patients were acutely ill, so were not included in the study. The remaining 171 patients consented to participate in the study. Informed consent was obtained from all these participants. Majority (81.28%) belonged to Hindu religion and 18.71% were ill iterate and 49.12% had primary level education. Majorities (46.19%) were unskilled worker, 17.4% were unemployed, 20.46% were semi-skilled workers, and 28.07% were skilled workers and professions were 5.26%.28 (45.16%) out of the 62 females were unemployed, while 21(20.38%) of the 103 males were unemployed. About 56.14% of spouse HIV status were positive and 28.65% spouse HIV status were negative at p=0.004 (Table 1).

Table 1 Study of Socio-Demographic Factors and Presence of Psychiatric Illnesses

Socio-demographic variable		N	Percentage (%)	Psychiatric Illnesses		Chi square	P value
				Present	Absent		
Age	18-44	122	71.35	1	0	2.85	0.23
	45-64	40	23.39	58	63		
	65or more	9	5.26	15	25		
Sex	Male	103	60.23	59	44	3.28	0.018
	Female	62	36.25	37	25		
	Transgender	6	3.50	0	6		
Religion	Hindu	139	81.28	65	74	3.258	0.05
	Muslim	27	15.78	8	19		
	Christian	5	2.92	2	3		
Education	Illiterate	32	18.71	12	20	2.049	0.78
	Primary school	84	49.12	32	52		
	Secondary	33	19.29	15	18		
	Graduate	20	11.69	8	12		
	Post-graduation	2	1.16	2	0		

						Chisquare	P value
	Unemployed	19	17.4	12	7		
Occupation	Unskilled worker	79	46.19	39	40	3.246	0.25
	Semi-skilled worker	35	20.46	13	22		
	Skilled worker	48	28.07	27	21		
	Profession	9	5.26	4	5		
Socio-economic status	Upper-middle	14	8.18	9	5	4.65	1.58
	Lower-middle	32	18.71	17	15		
	Upper-lower	78	45.61	44	34		
	Lower	47	27.48	25	22		
Marital status	Married	105	61.40	75	30	3.54	1.25
	Single	32	18.71	12	20		
	Widowed	25	14.61	14	11		
	Separated	9	5.26	3	6		
Type of family	Nuclear	94	54.97	58	36	3.98	0.005
	Joint	71	41.52	51	20		
	Broken	6	3.50	6	0		
Spouse HIV status	Positive	96	56.14	34	62	4.25	0.004
	Negative	49	28.65	20	29		

Association between stages CD4 Count, Ages of HIV, Duration of illness, Drug adherence, HIV opportunistic infection, ART regimen, presence of medicical co-morbidities and presence of psychiatric illness

HIV/AIDS disease related factors – CD4 count, HIV stages, duration of illness, presence of HIV-opportunistic infection, adherence and drug regimen were analyzed for association with presence of psychiatric illnesses. Of these, HIV stage (stage4) was statistically significantly associated with presence of psychiatric illnesses (chi squared=8.67, p=<0.005) and for CD4 count (chi squared=3.48,p=0.002) Duration of treatment was significantly associated with presence of psychiatric illnesses. Person had poor drug adherence was statistically significantly associated with presence of psychiatric illnesses (chi squared = 8.67, p = 0.053) and the association between psychiatric illness and duration of illness and anti-retroviral therapy regimens is statistically significant. Presence of HIV Opportunistic infection and medical co-morbidities are not statistically significant (Table 2).

Table 2 Association between types of variables and presence of Psychiatric illness

Variables	N	%	Psychiatric illness		Chisquare	P value
			Present	Absent		
CD4 Count						
>500	92	53.80	62	30	3.48	0.002
350-500	32	18.71	22	10		
200-350	29	16.95	15	14		
<200	18	10.52	15	3		

HIV stage						
1	135	78.94	58	77	8.67	0.005
2	14	8.18	9	5		
3	13	7.60	11	2		
4	9	5.26	9	0		
Duration of illness						
<1year	29	16.95	26	3	8.65	0.001
1-5years	46	26.90	15	31		
5-10Years	58	33.91	15	43		
>10years	38	22.22	20	18		
Drug adherence						
High	63	36.84	42	21	6.45	0.003
Medium	34	19.88	18	16		
Low	12	7.01	2	10		
HIV opportunistic infection						
TB	37	21.63	32	5	1.23	0.75
Candidiasis	12	7.01	9	3		
Others	11	15.54	8	3		
ART regimen						
Tenofavir+amivudine+Efavirenz	107	62.57	54	53	6.35	0.058
Zidovudine+Lamivudine+Nevirapine	44	25.73	9	35		
Others	15	11.4	10	4		
Presence of medical co- morbidities						
DM	31	18.12	14	17	0.53	0.91
SHT	9	5.26	4	5		
DM+SHT	6	3.50	6	0		
APD+Jaundice+Asthma+Anemia+Cancer	5	2.92	3	2		

Opportunistic infection in the study population

Presence of HIV Opportunistic infection was analysed not statistically significant association exists with presence of psychiatric illness and TB patients were maximum observed around 21.63 % (Figure 1).
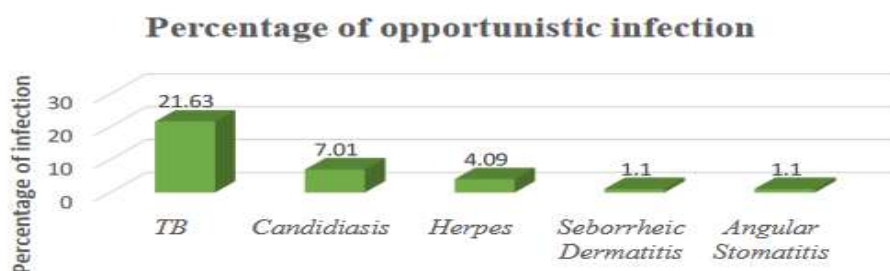

Figure 1 Association between presence of HIV opportunistic infection and presence of psychiatric illness

Prevalence of psychiatric illnesses

The depressive, adjustment and anxiety disorder were observed in patients. The maximum depression of mild symptoms was observed with 51.35%. 8% of alcohol dependency observed in risk zone IV with frequency 12 and 2.33% of nicotine dependency was noticeable. 2.92 % of total patient's psychosis were detected (Table 3).

Table 3 Prevalence of psychiatric illnesses in the study population

Psychiatric illness		N	Percentage %
Depressive disorder	Mild	19	51.35% of depression
	Moderate	13	35.51% of depression
	Severe	5	13.51% of depression
	Total	37	24.56% of total patients
Adjustment disorder	With depressive symptoms	14	% of adjustment disorder
	With anxiety symptoms	3	% of adjustment disorder
	Total	17	9.94% of total patients
Anxiety disorder	Mild	4	50% of anxiety
	Moderate	4	50% of anxiety
	Severe	0	0% of anxiety
	Total	8	4.67% of total population
Alcohol dependence syndrome	Risk zone I	3	2% of alcohol dependence
	Risk zone I	6	4% of alcohol dependence
	Risk zone I	4	6% of alcohol dependence
	Risk zone I	12	8% of alcohol dependence
	Total	25	14.61% of total patients
Nicotine dependence syndrome	Very low	0	0% of NDS
	Low	0	0% of NDS
	Medium	2	0 of NDS
	High	2	50 of NDS
	Very high	0	50 of NDS
	Total	4	2.33% of total patients
Psychosis		5	2.92% of total patients
Past history of psychiatric illness		5	2.92% of total patients
Family history of psychiatric illness		27	15.78%of total patients

Association between psychiatric illness Multi-dimensional scale of perceive social support, Karnofsky's performance scale and Morisky medication Adherence scale

In the analysis of support system and psychiatric illness, patients with low support system had statistical significance Multi-dimensional scale of perceive social support at P = 0.005 (Table 4), Karnofsky's performance scale at P = 0.005 (Table 5) and Morisky medication Adherence scale at P = 0.005 (Table 6). Majority of the patients had high support system and had lower prevalence of psychiatric illness and statistically significant.

Table 4 Association between psychiatric illness and support system in HIV/AIDS disease

Psychiatric illness	Multi-dimensional scale of perceive social support			Chi Square	P value
	Low	Medium	High		
Present	13	25	37	4.28	0.005
Absent	19	25	62		

Table 5 Association between psychiatric illness and functional ability of patients with HIV/AIDS disease

Psychiatric illness	Karnofsk's performance scale			Chi Square	P value
	A	B	C		
Present	42	22	11	3.26	0.005
Absent	76	11	9		

Table 6 Association between psychiatric illness and cognitive functioning in HIV/AIDS disease

Psychiatric illness	Morisky medication Adherence scale			Chi Square	P value
	Low	Medium	High		
Present	65	27	4	4.33	0.005
Absent	32	27	16		

4. DISCUSSION AND CONCLUSION

In our study, we discovered that psychological disorders were significantly more common (45%) among HIV/AIDS patients. Psychiatric comorbidity is typically linked to poor treatment compliance. Treatment adherence and HIV/AIDS outcomes in this population can be greatly improved by addressing the psychological condition. In our study, depression is the most prevalent psychiatric morbidity (24.56%), followed by alcoholism (14.67%), adjustment (9.94%), anxiety (4.67%) and nicotinic (2.33%) disorders. Planning mental health care for HIV positive people should take this into consideration. Both diagnosing and treating depression are easy processes. This subpopulation has a much higher prevalence of depression than the general population. Due to the higher frequency of alcohol consumption, this cohort of HIV-positive individuals may be regarded as a particularly vulnerable subpopulation among those who are male, single, and suffering from psychiatric disease. In order to administer care, it could be important to spot early indicators of a cycle of noncompliance, disease progression, and mental illness. This is indicated by the relationship between low CD4 counts (chi square 13.48; p value 0.004) and medical co-morbidity (31.54%) and psychiatric illness (56.14%). In the analysis of support system and psychiatric illness, patients with low support system had statistical significance Multi-dimensional scale

of perceive social support at P = 0.005, Karnofsky's performance scale at P = 0.005 and Morisky medication Adherence scale at P = 0.005. Excellent liaison services between the medical experts treating the disease and mental treatment can raise the quality of life for those with HIV/AIDS. This hospital-based cross-sectional study provides data on the prevalence of mental comorbidity (Springer et al., 2012). Conclusions on factors linked to mental comorbidity may be better served by an analytical and longitudinal study and personality qualities were not examined. In order to meet the psychosocial demands of HIV, a number of strategies for offering support have shown promise. Individual, family, or group counseling, stress management and coping skills sessions, educational sessions, home visits, and respite care are some of these approaches. Counseling and testing, which can be a substantial form of peer support for people with mental health conditions, are one promising strategy for treating the emotional reaction to HIV test findings. According to preliminary research, joining post-test clubs improves treatment adherence and increases felt social support. Co-morbid mental diseases can, however, be properly identified in order to enhance overall health outcomes, according to persuasive research. More thought and research are certainly needed to effectively direct future solutions for this most vulnerable group of people.

Acknowledgements

Conflict of Interest
The authors declare no conflict of interest.

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