



Review Article

JMR 2016; 2(6): 174-176
November- December
ISSN: 2395-7565
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Neuropsychiatric Morbidity in HIV/ AIDS

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Abstract

Human-immunodeficiency (HIV) virus is a neurotropic virus that enters the central nervous system by crossing blood brain barrier early in infection. HIV virus independently infects and destroys neuronal cells causing neuropsychiatric morbidity ranging from psychiatric illnesses to cognitive deficits. Several research studies have consistently reported higher prevalence of neuropsychiatric manifestations in patients with HIV/ AIDS. Further, there is an urgent need to sensitize health care providers regarding the relationship between HIV/ AIDS and neuropsychiatric morbidity to empower them to screen for psychiatric diseases. An early identification and treatment of psychiatric conditions in patients with HIV will help to improve compliance to anti-retroviral therapy, & coping with stress of living with HIV thereby improving quality of life. The review discusses prevalence of psychiatric morbidity in patients with HIV/ AIDS.

Keywords: Neuropsychiatric, Morbidity, HIV & AIDS

INTRODUCTION

Acquired immunodeficiency syndrome first emerged as public health issue in 1981, after clustering of unusual opportunistic infections and cancers were reported in men who have sex with men.^[1,2] The acronym "AIDS" was coined in 1982 to describe the syndrome of unusual origin in persons with the risk behaviors and the causative agent human immunodeficiency virus initially designated HTLV-III (Human T-lymphotropic virus III) was isolated in the laboratory of Jean-Claude Chermann, at the Pasteur institute, Paris in 1983.^[2]

The international committee on taxonomy of viruses recommended the current name "Human Immunodeficiency Virus" in 1986 and two strain were identified, HIV-1 and HIV-2 which is transmitted by sexual contact with infected person, blood transfusion and the use of blood products, sharing of needles and syringes especially in intravenous drug abusers, skin piercing, vertical transmission from infected mother to the fetus during pregnancy with the probability of transmission linked to the level of viral replication.^[3] In 1985, enzyme-linked immunosorbent assay (ELISA) was developed as a sensitive test to appreciate the scope and evolution of HIV.^[2,3] Since the plasma viral loads are highest during acute infection and late stages of disease, newly infected individuals are often unaware of their serostatus and thus may unintentionally expose others to HIV infection.^[1]

The hallmark of the HIV infection is the slow depletion of T-lymphocytes which is crucial for effective humoral and cellular immune responses predisposing the individual to host of opportunistic infections with viruses, bacteria, fungi and protozoa. HIV infection can be divided into three phases: acute flu-like symptoms with rash and fever associated with high level of viral replication, relatively asymptomatic periods of infection that may last for years and the late stage of HIV infection, AIDS characterized by a generalized lymphadenopathy and AIDS related complex (ARC) with variety of manifestation including cytomegalovirus (CMV), epsteinbarr virus (EBV), herpes simplex virus, john cunningham (JC) virus, cryptococcosis, pneumocystis jiroveci, toxoplasmosis, tuberculosis and uncommon tumours such as kaposi sarcoma and non-Hodgkin lymphoma.^[2,3]

According to the current Centres of Disease Control and Prevention (CDC) classification system for HIV infected adolescents and adults, any HIV infected person with a CD4 T cell count of <200/microlitre has AIDS by definition, regardless of the presence of symptoms or opportunistic disease.^[4]

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Since its appearance in 1981, HIV/AIDS has infected more than 60 million people and claimed over 22 million lives. Moreover, the global rate of HIV/AIDS infection is growing.^[5] 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.^[5] According to UNAIDS, 95 percent of all HIV/AIDS cases had been in developing nations. Approximately 22.5 million people in Sub-Saharan Africa (SSA) are living with the HIV/AIDS virus, which is the leading cause of death in the region. In several SSA nations more than 30 percent of the populace is HIV/AIDS positive and in some regions, AIDS has reduced life expectancy by as much as 50 percent. Though prevalence rates are low in India and China, the figures are deceptive. As many as 2.31 Million people in India and 1 million in China are HIV positive, and the epidemics are growing.^[5]

Neuropsychiatric manifestation of HIV/ AID

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.^[6] Postmortem neuropathologic examinations have revealed the presence of virus in cortical and subcortical structures, namely the frontal lobes, the subcortical white matter and the basal ganglia and the virus can be isolated from the CSF and can also be found in brain tissue which suggests that the virus can cross blood brain barrier by a Trojan-horse-type mechanism using macrophages it infects. Once in the brain, HIV targets and infects the glial cells from which it later secretes neurotoxins that lead to neuronal damage and death.^[7]

The most common neurologic manifestations are minor cognitive and motor disorder (MCMD) and HIV-associated dementia (HAD).^[7] The documented prevalence is 15 to 30% in US and Europe while India is reported to be about 1-2% of HAD.^[8] The joint conference of the National Institute of Mental Health and the National Institute of Neurological Disorders and Stroke on June 13, 2005, identified and defined criteria for three levels of HIV associated neurocognitive disorder or conditions, asymptomatic neurocognitive impairment, mild neurocognitive disorder (Previously MCMD), and HIV associated Dementia.^[9] The diagnosis of HAD is established in patients with symptoms ranging from apathy, depression to mania, and psychosis in absence of any medical causes.^[9]

Patients suffering from severe organic disorders are found to be burdened by higher prevalence of mental disorders which could rise up to 30 – 50 %.^[10] 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.^[10] Psychiatric patients are high risk for acquiring HIV infection. On the other hand, patients infected with HIV are more susceptible to develop psychiatric illness.^[11] Moreover; once the person is infected the course of the disease may be influenced by his and her well being. 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.^[12] 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.^[10]

The most common psychiatric manifestations are depressive spectrum disorders, among which major depression continues to be the most prevalent common psychiatric diagnosis in HIV-1-seropositive men. Stress and depression may adversely affect immune function and accelerate the progression of HIV-1 disease.^[12] The point prevalence of

major depression in HIV infected individuals is 4–10%, with lifetime prevalence estimated between 22–45%.^[12]

Anxiety occur concomitant to most of the severe medical illnesses, and HIV is no exception. Anxiety about seropositivity may lead to both adaptive and mal adaptive behavioral responses, which may range from help seeking behaviors to non compliance to the treatment to severe anxiety due to devastating feelings of painful implications.^[13] The prevalence of anxiety have been reported to lie between 2-38%.^[11]

Suicide in HIV is a complex biophysical outcome of depression, hopelessness, isolation and lack of support. HIV infection with all its negative connotations and discrimination can be a harbinger of future suicidal ideation or completed suicide.^[14] The relative risk of suicide in men with AIDS aged 20 – 59 years was 36 times greater than that of similar aged men without AIDS, and 66.15 times the general population rate.^[16] Psychiatric variables significantly associated with suicidal ideation were similar to those found in western studies and include presence of depression in 73% of suicidal patients.^[15]

New onset psychotic symptoms are not uncommon in HIV infection especially in the late stages of ADC in 2-15% of patients. Psychosis may also be a prominent feature of delirium, or may result from any CNS opportunistic infected CNS malignancy or as a result of medication used in the treatment.^[16] Presentation with psychosis tends to have relatively rapid deterioration in cognitive and medical status.^[11] Mania can occur at any point of time along the course of HIV infection and clusters either as pre-existing bipolar disorder or as late stage manic syndrome. 'AIDS MANIA' that occurs in 8% of HIV/AIDS patients is commonly seen in the context of advanced stage of disease with CD4 count below 200, negative personal and family history of mood disorders and highly correlated with HIV dementia indicating that the AIDS mania is a distinct condition caused by the consequences of brain infection.^[17] 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.^[18]

People with severe neurocognitive deficits or HAD, usually have a higher plasma viral load. Patients with viral loads $\geq 30,000$ are 8.5 times more likely to develop dementia than those with viral loads < 3000 .^[19]

Psychiatric disorders were observed in 72% of the study population with considerable degree of overlap. 38% of the individuals screened positive for two or more psychiatric diagnosis while only 34% had one psychiatric diagnosis. Major depressive disorder (38%), generalized anxiety disorder (34%) and social phobia (34%) were commonest psychiatric disorders in the said study.^[20]

It can be concluded that neuropsychiatric manifestation is very common in HIV/ AIDS patients. 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.

Financial support and sponsorship: Nil.

Conflicts of interest: There are no conflicts of interest.

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