



PSYCHIATRIC ASPECTS OF HIV AND AIDS

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INTRODUCTION

In the past few years prevalence of HIV infection as well as AIDS has increased tremendously not only in the Western world but also in India. This can be attributed to multiple factors e.g., increase in drug abuse especially intravenous drugs, breaking interpersonal bonds, morals and indulgence of younger age group in unsafe sexual practice etc.

Psychiatric sequels of HIV infection and AIDS are important parts of spectrum of illness. In a study that examined referrals from, the HIV-AIDS wards, the most frequent reasons for referral were evaluation of coping problems (42%), assessment of possible depression (31%), and assessment of psychotropic medication (24.5%). The most common psychioatric diagnoses were mood disorders (36.5%), psychoactive substance use disorders (22.7%), and organic mental disorders (18.1%).^[1] This data is sufficient to understand the role of psychiatrist in management of AIDS patients.

PATHOPHYSIOLOGY OF PSYCHIATRIC DISORDERS IN HIV-AIDS

Disorder usually starts in the adolescence when indulges in unsafe sex practices or injectable drug use to curtail his stress. Many factors that appear at adolescent age may generate enough stress e.g. an individual may find that he has different sexual orientation which is not socially acceptable, he may feel that social and family support is inadequate, career ambitions and workplace expectations may induce pressure, and most importantly it is vulnerable age when psychiatric disorders like anti-social personality disorder, mood disorders, anxiety disorders emerge that add stress. In addition, this is the most vulnerable age for sexual and drug experimentation, where gateway drugs e.g., tobacco, alcohol and cannabis are consumed more often followed by hard substances viz., opioids, cocaine etc. These factors work together in various combinations where a given factor positive feed forward another to establish a vicious cycle. Resultantly, the adolescent is exposed to unsafe sexual practices e.g., multiple sexual partners or homosexual relations; substance use e.g., injectable substance use superimposed upon psychiatric illness to enhance chances of catching HIV infection.

Psychiatric disorders that arise during HIV infection can be explained best on the "bio-psycho-social" model where all three factors (i.e. biological, psychological and social), act in cohesion to produce various clinical syndromes.

Biological factors play role in three different ways and one or more of them occur in combination-the affected person may be genetically predisposed to develop the illness e.g., anxiety, depression or cognitive impairment; or the inflammatory markers that are found in high levels in the body during infection may alter neuronal functioning to induce functional neurochemical abnormalities that lead to psychiatric illness; or lastly, gross neuronal damage that develops secondary to HIV infection e.g., CNS lymphoma, toxoplasmosis etc, may cause psychiatric features.

Social factors should not be underemphasized because they act as the 'second hit' to provoke full-blown symptoms in persons with various biological predispositions. Most of the infected individuals are discarded by family members, friends and social groups; denied of medical care and treatment; lose their jobs and found themselves alone in distressful situation without any chances for ventilation of their feelings.

Psychological factors are consequent to biological and social problems that have been discussed. In the stressful situation, affected person usually tries to find easiest path of escape and usually indulge in the substance abuse. Drug experimentation is further precipitated by adjustment disorder, depression, cognitive impairment and psychosis. In this situation, most of the HIV infected persons indulge directly in use of hard substances, commonly injectable opioids.

Table: 1 Pathophysiological Classification of HIV Related Psychiatric Disorders.

| S.No. | Pathology and Psychiatric Disorder |
|-------|--|
| 1. | Illness caused through CNS damage by HIV <ul style="list-style-type: none"> • Dementia |
| 2. | Illness caused through infections secondary to AIDS <ul style="list-style-type: none"> • Generalized damage to CNS • Focal pathology of CNS |
| 3. | Treatment emergent problems |
| 4. | Functional psychiatric disorders <ul style="list-style-type: none"> • AIDS Phobia • Acute Stress Reaction • Bereavement • Depression • Anxiety • Psychosis |

VULNERABLE PERIODS FOR DEVELOPMENT OF PSYCHIATRIC DISORDERS

Certain periods in the course of HIV infection make more susceptible for psychiatric disorders (Table 2). In the present section we will discuss two such periods (at the time of HIV screening and post test) where if adequate precautions are taken, risk can be minimized. It has been found that psychological symptoms increase just before test and return to baseline (below pretest level) approximately 34 months after test. Most prevalent disorder at this point of time is adjustment disorder with anxious or depressed features.

(a) Pre-test HIV Counseling

HIV is seen as an incurable disease and has stigma attached with it due to social discard of the infected person. Therefore, whenever any body is asked to undergo, screening test, stress develops. The said person may react with shock, anger, denial, guilt and anxiety. Fear of loss of life, family, job, reputation stimulates psychological pain. Patient may become hostile towards physician. In such time pre-test counseling may help the person to overcome the situation.

Before advising screening test for HIV, physician must clarify the meaning of positive test and clarify cognitive distortions if any. Most of the patients feel that positive test means that they have developed AIDS. And it must be elucidated that, actually it shows only HIV infection and not the AIDS syndrome. At the same time it is also important to discuss the natural course of HIV infection with statistical figures. Similarly, he should be explained that negative result does not mean absence of infection and high risk behaviour of calls for another testing after some period because sero-conversion requires time.

At this time, sometimes patients develop unrealistic fears due to paucity of information, which must be cleared at that time only. Necessity of test must be discussed even if patient denies high risk behaviour.

Try to find out how he would react in case of positive result. It may provide you time to prepare the patient as

well as seek a professional help. A better guide in these cases can be past reactions to stress as he is more likely to react in the same fashion. Confidentiality of test is of paramount importance and it should be openly discussed with the patient who should have access to his results. Possible social and psychological implications of positive test must be discussed.

Hence, it includes a myriad of factors that assess the person's predisposition towards stress and it, if adequately done prepares a person to deal with forthcoming events.

(b) Post-test Counseling

This is high time for development of psychological reactivity and the test results must be carefully disclosed. If a person comes with negative result, it must be clarified that it does not provide him life-long immunity from HIV and any risk behaviour must be avoided in future. If the physician feels that repeat testing is necessary, discuss with the patient.

Situation becomes more difficult in cases of positive result. At this point of time patient requires emotional support and empathetic relationship and he should be forgiven. Possible problems that he may face in future must be discussed and a family member must be called at this situation for providing care. Patient must be informed about measures he may take to prevent spreading infection. Few patients may become aggressive and may start cursing themselves or sometimes become revengeful to the society. There is risk of suicidal or homicidal behavior. These reactions should be adequately taken care of.

As the discussion explains, it is high time for possible psychological complications and tests the skills of physicians in psychological management; therefore it must be given due concern.

Table: 2. Temporal Classification of HIV-AIDS Related Psychiatric Disorders

| S.No. | Time of Onset of Disorder |
|-------|---|
| 1. | Before catching illness AIDS Phobia, Worried Well |
| 2. | At the time of screening test Acute Stress Reaction |
| 3. | At the time of disclosure of result of test With Negative Test With Positive Test Acute stress Reaction Bereavement in AIDS |

TYPES OF PSYCHIATRIC DISORDERS

There are many symptoms which are quite frequent in these patients but for them, the exact pathology is yet to be identified. They are termed as functional disorders. One should not misinterpret them as disorders without any pathological basis in the brain. All the disorders described below may be functional, secondary to generalized or focal CNS damage by AIDS or may appear in response to therapy.

(a) AIDS Phobia or Worried Well

In the recent past media has spread a huge awareness regarding HIV and AIDS, However, this has become a two edged sword. Whereon few people have started prophylaxis and changed their life style, there are a lot of people who have actually developed the fear of catching illness. Despite due attention given to AIDS, a related epidemic had been reported and variously termed as AIDS phobia, AIDS panic, pseudo AIDS, AIDS stress, AIDS hysteria or AIDS anxiety. It consists of unfounded fears of having contracted AIDS, incorrect beliefs as to how HIV is transmitted, producing bizarre attempts to avoid the illness. American Psychiatrists have suggested the acronym FRAIDS or fear of AIDS.^[2]

Persons exposed to a life style that make them prone for HIV infection e.g., homosexual persons, people with history of unsafe sexual practices, intravenous drug users etc. most commonly present with this syndrome. After such an exposure, they become overly conscious for physiological changes in the body, develop anxiety features amounting to a diagnosis of hypochondriasis. Sometimes the intensity may reach delusional level. Such persons repeatedly ask for screening test and best of clinician's efforts are unable to relieve their anxiety. Negative tests are attributed to laboratory error or emergence of some new virus or their inability to form antibodies in response to infection as other people do.^[3] Confrontation and explanations of clinicians regarding their groundless conviction make them angry. Sometimes they avoid touching objects at public places, washes their hands if mistakenly touch anything or sometimes develop paranoid psychosis after an affair. Past history of psychiatric illness especially depression is common in them. Kausch^[4] described a case who suffered koro.

As clear from the description, treatment of these patients is challenging. Repeated reassurances are unable to improve the situation. Two treatment methods—Cognitive Behaviour Therapy^[5] and Antidepressant Drugs, especially when phobia is the part of underlying depression are found helpful.

(b) Acute Stress Reaction

It is common at the time of serological testing, more common when it turns out positive. Both these moments should be dealt carefully as explained.

Pre test counseling should include the disclosure of reason for testing, future impacts of negative as well as positive tests, explaining the differences between screening and confirmatory test, education regarding HIV infection and AIDS etc.

Posttest counseling, especially if positive is a crucial moment. It brings the realization of fears which may long have been present, need to tell others, importantly their partners. Life styles that were previously concealed may be exposed to parents and colleagues for the first time.

Typical features are anxiety, depressive symptoms, guilt, panic, insomnia lasting for several weeks. Suicidal ideation may develop. Patient may develop a preoccupation with bodily symptoms and wrongly attribute them to commencing illness that develops during the course of AIDS. Under such stress, patient may start abusing addictive substances. Patient may disregard medical advices for himself and those that have been provided to prevent infection to others. These patients also perceive other changes in their life, even when they are not threatening as stressful situations and are prone to develop PTSD (Post Traumatic Stress Disorder) symptoms in response to previous life events.^[6]

Situation can be handled with the help of drugs (Benzodiazepines and antidepressants) along with reassurance.

(c) Bereavement in AIDS

There are multifaceted problems in the patients, their families, friends and partners. They have many reasons to develop it are: - constrains on public display of grief when homosexuality has been concealed previously, punitive responses in case of drug use etc. Patient may be unable to find out an anchor for support and emotional exhaustion is expected. The taboo surrounding AIDS often presents barrier to wider social support.^[7]

(d) Adjustment Disorder

This is a diagnosed according to standard DSM IV TR criteria i.e., when the expressed and perceived distress is greater than what might be expected in that situation and interferes with social, personal or occupational functioning. It is commoner in patients with past

psychiatric history, lack of social acceptance. Disclosure of the test result, especially if it is positive, is the risky period. This condition occurs predominantly at the time of HIV diagnosis and the disorder includes acute and chronic adaptation responses to diagnosis of HIV disease. They include fear of discrimination and imminent death, guilt over infecting others, exacerbation of existing mental conditions and acute suicidal ideation.^[8] Anxiety and depression are usually found along with.

(e) Anxiety Disorders

Patients with HIV report significantly more anxiety than general population^[9]. Elliot^[10] described the prevalence to be 38% in AIDS patients. Most common type of anxiety disorders associated with HIV are Panic Disorders, PTSD and GAD (Generalized Anxiety Disorder). The underlying theme centers upon the health issues, social support, financial arrangements and risk of infecting others. Symptoms include chest pain, headache, numbness and insomnia. Obsessive rumination regarding death, past experiences and somatic symptoms are common.

While assessing these symptoms in HIV patients, attention should be paid to anti-retroviral and ancillary treatment since few drugs e.g., ddI, d4T, AZT, fluconazole, foscarnet, and isoniazid may cause anxiety symptoms.^[10]

Treatment may range from acupuncture to benzodiazepine, depending upon the patient's preference.

(f) Depression

Depression is not uncommon during AIDS, 15.5-22% patients may suffer from it.^[11-14] Increasing age causes decline in the rate of depression in general population but not in these patients^[15], and prevalence is especially high in patients not receiving HAART.^[11] Depression in HIV patients is usually underdiagnosed.^[16]

It is commonly associated with previous history of depressive illness, poor perceived social support and personality disorders. Being in a relationship appears to afford protection against depression while having a history of illicit drug use and current 'stress' are highly associated with depression. Interestingly, HIV-related medical variables including laboratory markers of HIV disease, duration of illness and anti-retroviral medication regimen were not related to depression.^[12,17] Female gender, negative life events and disability have been described as risk factors in general population recently.^[13,14,18] Blaney *et al.*^[19] found that psychosocial factors significantly predicted the level of prenatal depressive symptoms in HIV infected females beyond the effects of demographic and health-related factors. Perceived stress, social isolation, and disengagement coping were associated with greater depression, positive partner support with lower depression.

It is important to treat the symptoms in the early staged as they may interfere with the treatment compliance. It is sometimes difficult to be differentiated from HIV associated dementia, apathy secondary to AIDS. It is even more difficult to diagnose when ARC (AIDS related Complex) is also present. Abrams *et al.*^[20] and Kalichman *et al.*^[21] suggested that depression can be diagnosed in ill patients by paying attention to cognitive and affective symptoms and relying less on the physical complaints. Few mental changes e.g., lowered self esteem, guilt, feel defeated suicidal ideation, crying points the presence of depression.

Routine screening to identify those currently depressed or at risk for depression should be integrated into prenatal HIV care settings to target issues most needing intervention.^[19] Treatment with SSRIs can reduce the severity of depression and improve the quality of life in HIV patients.^[22]

(g) Sleep Disorders

Insomnia is widespread and under diagnosed in HIV-seropositive ambulatory patients. Insomnia is especially prevalent among those with cognitive impairment and substance use. Cognitive impairment and depression are the best predictors for insomnia in patients.^[23]

(h) Suicide

It is especially common in early and late stages of disease. Perry *et al.*^[24] noted that these are common at the time of serological testing but falls significantly thereafter. It tends to cluster in first 6 months after diagnosis, undermine the importance of pre and post test counseling.

Komiti *et al.*^[25] reviewed articles on suicide associated with HIV/AIDS and found that most studies have been done on homosexual/bisexual groups, with little data was available for heterosexual populations or women. Studies showed an increased rate of suicidal ideation, suicide attempts and completed suicide in individuals with HIV/AIDS. An increased rate of substance use and psychiatric illnesses were found in these patients. According to them, though the increased rate of suicidal behaviour in HIV-infected persons was consistent with findings in other medically ill groups with chronic, life-threatening disorders, even then, assessment of any possible direct effect of HIV/AIDS on suicidal behaviour was confounded by methodological limitations of many of the studies. They stressed the need for long term prospective studies in this field to gather more information.

(i) Psychosis

There is bilateral relationship between HIV/AIDS and psychosis. Extent research had found alarming rates of the human immunodeficiency virus / acquired immune deficiency syndrome (HIV/AIDS) in persons with severe mental illnesses, with seroprevalence rates ranging from 4% to 23%.^[26] Though patients with psychotic disorders

have reduced sexual activity, they present greater frequency of sexual risk behaviours that predispose them to acquire HIV infection and other STDs. The psychotic patient have significantly less knowledge about HIV / AIDS, they have a smaller proportion of stable sexual partners and greater frequency of sexual risk behaviours, such as inconsistent condom use and sexual intercourse outside wedlock.^[27]

Psychotic features caused by HIV infection are rarely found in these patients. Many different pictures have been described, mostly not meeting any particular criteria. Many cases arise in ARC subjects. Delusions, hallucinations, bizarre thoughts, liability of mood may be present in different combinations.

(j) Substance Use Disorders

It is the most important factor to be understood as it may cause or result from HIV and AIDS. As a cause, intravenous drug use is one of the important reasons for transmission. It also increase the chances of unprotected sexual encounters among these people thus multiplying the risk of catching disease.^[28]

This is often secondary to Post Traumatic Stress Disorder, since many patients with HIV AIDS are exposed to traumatic event during their life. There is reason to believe that the co-occurrence of HIV and PTSD or co-morbid PTSD and Substance Use Disorder (PTSD / SUD) may predict poorer health outcomes. There are several pathways through which PTSD or PTSD / SUD might adversely impact the health of individuals living with HIV, including participation in negative health behaviours, low levels of adherence to anti – retroviral medications, and / or a direct, deleterious effect on immune function.^[29]

Though the prevalence of substance use disorder declines with age in general population, such trends were not observed in HIV – AIDS population.^[30]

(k) Cognitive Impairment

It is thought to represent the widespread neuronal loss caused by HIV infection in the form of encephalitis. The impairment can occur in a spectrum-from mild cognitive impairment (MCI) to frank dementia.

Initially it presents with the motor disturbance concordant with the diagnosis of sub-cortical dementia and with the advancement of disease cortical symptoms appear. Symptoms can be grouped into these categories – cognitive, motor and behaviour.

Cognitive symptoms include forgetfulness, poor concentration, and difficulty with problem solving and reading. Some people reread the paragraphs before fully understanding it. Few may complain of solved thinking. Behaviorally apathy, reduced spontaneity, and social withdrawals are common. In a significant minority of patients it may present in the form of affective disorder,

psychosis or seizures. Physical examination reveals tremors, impaired rapid repetitive movements, imbalance, ataxia, hypertonia, generalized hyper-reflexia, positive frontal release signs, impaired pursuit and saccadic eye movement. All possible secondary causes must be ruled out and evidence of HIV infection must be there.

Evidence of vacuolar myelopathy, neuropathy may be present; these findings are uncommon in children.

Children also develop an HIV associated neurodevelopmental disorder characterized by developmental delay, hypertonia, microcephaly, basal ganglia calcification. The neurological involvement most often occurs in the absence of secondary infection, and neoplasms which is not the case is for adults. It usually progresses rapidly to mutism, coma and death. (ICD-10).

World Health Organization^[31] has recommended the use of operationally defined criteria for HIV dementia which are modified from ICD 10 criteria for dementia. It suggested that diagnosis is based upon –

1. Decline in memory, may not be severe enough to impair routine functions.
2. Decline in motor functions, but not entirely due to myelopathy, peripheral neuropathy or other physical illness.
3. Minimum duration of symptoms is 1 month.
4. Aphasia, apraxia and agnosia must be present.

Additionally evidence of HIV infection must be present in absence of secondary causes that can explain condition.

Prevalence

It is the commonest disorder found in HIV / AIDS. Different researchers have estimated the prevalence ranging from 8% to 60%.^[32-35]

Staging

AIDS-dementia complex (ADC) can be staged according to following criteria.^[36]

- Stage 0: Normal mental and motor function
- Stage 0.5 (Sub-clinical): Minimal or equivocal symptoms without impairment of work or activities of daily living. Soft neurological signs e.g., slowing of fine finger movements or primitive reflexes may be present.
- Stage 1 (Mild): Cognitive disturbances that compromise performance on more demanding aspects of work or activities of daily living.
- Stage 2 (Moderate): Cognitive deficits make the patient unable to perform work or motor activities.
- Stage 3 (Severe): Patient can perform only rudimentary tasks and faces difficulty in routine work.

- Stage 4 (End stage): Patient is almost mute, incontinent and bed ridden.

Course

The course is typically steadily progressive though sometimes can be punctuated by abrupt progressions.^[32,35] Insight is relatively preserved until late in the disorder. The delayed appearance of cortical signs e.g., apraxia and agnosia favors the subcortical nature of disease. Even in the later stages consciousness is preserved unless superimposed by delirium. Median time for death is approximately 6 months from the onset of symptoms.

Investigations

- Serum levels of vitamin B12 and folate must be assessed as they decrease with the illness and mimic ADC.
- EEG is often normal initially but diffuse slowing may be present later on.
- Neuro-imaging shows variable cortical atrophy and ventricular dilatation. T2 MRI shows areas of increased signal as the dementia progresses. However, main role of MRI is to demonstrate treatable conditions e.g., infections and lymphomas. Recently Paul et al^[37] demonstrated involvement of caudate and amygdale in patients with apathy secondary to HIV infection. Functional imaging shows areas of hypo metabolism in basal ganglia and thalamus further elucidating the pathology.
- Virological markers in CSF may be correlated with the ADC. Of all markers, it is CSF viral load that best correlates with ADC severity. However, there is no critical cut-off level which is diagnostic for dementia.^[38] Approximately 50% patients have detectable p 24 antigen in the CSF that is uncommon in non-demented subjects.^[36]
- In absence of other confounders, CSF level of beta-2 macroglobulin, neopterin and quinolinic acid correlates well with severity of ADC.

Differential Diagnosis

The diagnosis during life is essentially one of exclusion. Mild Cognitive Impairment must be differentiated from anxiety, depression, fatigue and manifestations of systemic infections.

Metabolic causes of encephalopathy and effect of psychotropic drugs must be excluded. Psychotic features should raise the possibility of independent schizophrenia or psychosis as it is not the typical manifestation.

All possible secondary causes e.g., cytomegalovirus, toxoplasma, neurosyphilis, cryptococcal, tubercular meningitis, lymphoma and other neoplasia must be excluded by appropriate investigations.

QUALITY OF LIFE AFTER HIV / AIDS

A diagnosis of human immunodeficiency virus / acquired immunodeficiency syndrome (HIV/AIDS) is a life-

changing event, where persons must deal with a life-threatening, debilitating disease and its associated stigma and isolation. Studies over the past decade have shown that writing and talking about stressful and traumatic experiences, such as a life-threatening illness, causes emotions surrounding the trauma to change and to become cognitively reorganized. The result is a reduction in inhibition and change in basic cognitive and linguistic processes, which have contributed to meaningful behavioural, psychological, and physical health benefits across a variety of populations. These processes interact with each other to impair the quality of life of HIV infected persons. The factors related to quality of life are impact of antiretroviral therapy, stressful events, social support, employment, spirituality, coping, depression and suicidal ideation.^[39,40]

Many HIV-specific instruments with established validity and reliability are available for the quantification of impairment including the Medical Outcomes Study-HIV Health Survey, HIV/AIDS Targeted Quality of Life Instrument, Functional Assessment of HIV Infection, AIDS Health Assessment Questionnaire, HIV Overview of Problems-Evaluation Systems, and Multidimensional Quality of Life Questionnaire for HIV / AIDS.^[41]

Nixon et al^[42] reviewed the role of exercise in HIV patients and indicated that performing constant or interval aerobic exercise, or a combination of constant aerobic exercise and progressive resistive exercise for at least 20 minutes, at least three times per week for four weeks appears to be safe and may lead to clinically significant improvements in cardiopulmonary fitness. Further more, individual studies suggest that aerobic exercise may improve psychological well-being for adults living with HIV /AIDS.

MEDICATION USE IN HIV-AIDS

It is well known that patients often alter their medication regimens and that these changes may have profound consequence for their health outcomes. Russell et al^[43] identified factors that affect medication compliance in these subjects and found that *facilitators* included motivation, factors of faith, routines, and other's influences. Categories of identified *barriers* included perceptions, psycho emotional issues, provider/clinic issues, interpersonal factors, and disease and treatment factors. This study showed medication decision making to be a complex process, influenced by often-competing life and treatment issues and affected by participant's beliefs and values.

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