

SHORT REVIEW

NEUROPSYCHIATRIC COMPLICATIONS OF HIV/AIDS

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Abstract

The commonest neuropsychiatric complication of HIV/AIDS is adjustment reaction manifesting either as anxiety or depressive disorders. The psychosocial stress associated with socially stigmatising terminal illness coupled with the neurotropic effect of the retrovirus and the frequent occurrence of opportunistic infection of the brain due to immunosuppression, might lead to other psychiatric disorders other than the adjustment reaction.

Keywords: HIV/ AIDS, opportunistic infection, Adjustment reaction

Introduction

Acquired immune deficiency syndrome (AIDS) remains a fatal illness, caused by infection with the Human Immunodeficiency Virus (HIV). The HIV is a retrovirus, which is immunosuppressive, predisposing the individual to opportunistic infections and certain neoplasm.^{1,2} In addition to impairment in immune functions, evidence has suggested that HIV is neurotropic.^{2,3} It should therefore be anticipated that neuropsychiatric complication might be common in HIV positive individuals during all phases of HIV related illness.

The neuropsychiatric aspect of the AIDS remains a challenge for psychiatrists involved in patients care. The magnitude of the HIV/AIDS is steadily rising in Nigeria and in most of the sub-Saharan African regions,⁴ thus an increase of psychiatric disorders due to HIV/AIDS is likely to be imminent, it is pertinent, therefore to review the spectrum of psychiatric disorders in AIDS under three main headings:

- a) Psychologically determined reaction to diagnosis and illness
- b) Neuropsychiatric complications
- c) Neuropathological findings

Psychologically determined reaction to diagnosis and illness

The commonest psychiatric condition in HIV infection is an adjustment reaction presenting either as an anxiety or depression.^{3,6,7} These reactions are usually short lived and transient, but in some cases a full-blown depressive or anxiety state can develop.

The psychosocial stress associated with socially stigmatising terminal illness and frequent infections carries with it tremendous emotional upheaval in vulnerable individuals. There is usually a sense or loss to health, financial security, independence and relationships in AIDS positive patients. This is even made worse when relevant social support is missing.⁸

In one study⁹, the psychopathology exhibited by the patients as adjustment disorder in 22% of cases while 12%, it was found out that the high lifetime rates of mood disorders in group of 207 individuals who has positive HIV testing was 16%. Suicide may be a possible complication.⁹ In New York City AIDS population, 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.¹¹

Neuropsychiatric complications

HIV infection is involved in a wide range of clinical syndromes. The neuropsychiatric complications are becoming more apparent.^{8,9,12} It is likely that part of the more serious complication is directly related to the viral infection rather than the immune-deficiency states induced by the virus, the major complications may be classified as follows:

- a) Cognitive impairment
- b) AIDS dementia /HIV encephalopathy
- c) Delirium
- d) Affective disorder
- e) Anxiety state
- f) Psychosis
- g) Substance use disorder

h) Pain syndrome

Cognitive impairment

There may be subtle neuropsychological deficits which are detectable by an appropriate battery of psychological tests.^{13,14,15} These changes include loss of cognitive flexibility, difficulty in problem solving, mental slowness, difficulty in concentration. There are also difficulties in memory manifest as delayed recall.¹⁶

AIDS dementia

A very proportion of patients develop a frank dementia with its usual manifestations of gross memory impairment and personality changes.^{13, 14} The prevalence of AIDS-related dementia, and the AIDS-dementia complex (ADC) varies between 8 and 16% in unselected cases to a figure in excess of 60% in patients referred to specialist clinic. A review¹⁶ showed apathy, social withdrawal, impaired concentration, problems with complex sequential mental activities, mental and motor slowing, as well as motor weakness and clumsiness characterize the early stage of ADC. These early symptoms may not be readily detectable on routine bedside mental status exam, but patients frequently complain of difficulty in performing complex tasks at work or at home, and upon formal neuropsychological testing, the impairment may be evident.¹⁶ In addition, frontal lobe primitive reflexes, such as the snout and glabellar may be detectable during the early stages of ADC. Most often the cognitive symptoms worsen insidiously, and in the final stages of ADC, patients typically exhibit severe poverty of speech, global cognitive impairment, bowel and bladder incontinence, ataxia, spasticity and motor weakness.¹³

While CNS infection with HIV is a common finding in HIV positive individual, controversy exist over the frequency with which CNS infection result in clinically detectable cognitive and behavioural impairment, and whether cognitive impairment frequently precedes immunological impairment.¹⁷ While some studies^{9, 12} have reported the frequent occurrences of cognitive impairment prior to the immunological progressive of disease^{16, 18}

Symptoms of dementia may also result from the opportunistic infections and malignancies that frequently occur over the course of HIV infection.^{18, 19} These diseases processes may result in cognitive impairment through direct destruction of brain tissue, such as with CNS toxoplasmosis or CNS Lymphoma. Alternatively, that impairs CNS function. It is important to note that the clinical features and course of these dementing illnesses often differ from that of ADC. In ADC, amnesia, aphasia and agnosia are unusual until very late in the course of the disease.¹⁸ In contrast, these disorders often are prominent in dementia arising from malignancies or infectious processes.²⁰ Typically, in ADC the cognitive decline is gradual, usually occurring over months, while in dementia secondary to acute infections or malignancies, the cognitive impairment is typically abrupt and occurs over days to weeks.

Delirium

Delirium is a frequent consequence of the severe medical illnesses or treatment that occur over the course of AIDS, and may present with acute, profound cognitive impairment.^{13, 14} behavioural manifestations, include agitation, psychosis, aggressive behaviour, mutism and marked withdrawal. The delirium in AIDS is usually indistinguishable from the delirium resulting from any other serious acute medical illness.

Affective disorder

Individuals who are diagnosed with HIV infection undergo a process similar to grief, as they adjust to living with a terminal illness. Dysphoric affect is normal and expected part of this grieving process and must be differentiated from a major depressive episode. There is evidence to suggest that an HIV-related organic mood disorder may exist either as a feature of or independent of ADC, based primarily on case reports, and mood disorder appears to be frequent among HIV positive individuals.¹² This mood disorder did not respond to conventional antidepressant therapy, but remitted coincidentally with treatment with zidovudine (AZT), raising the possibility that the patient had an HIV-related disorder.¹⁹

Anxiety state

Anxiety is common in patients with HIV seropositivity. It has shown that anxiety disorder is common in groups at high risk for HIV infection^{8,12,21}, irrespective of HIV status. Individuals with pre-existing disorder may be at increased risk for exacerbation of symptoms, due to the numerous stresses of HIV positivity. Concern over possible progression of HIV disease, the impact of illness on social status, friends, family and work, as well as existential concerns all may result in significant anxiety.

Psychotic reaction

There have been several case reports of psychosis occurring in HIV infected individuals.^{12,19,22,24} Paranoid delusions, and auditory hallucination have been reported most frequently and manic symptoms and catatonia have also been described.²² Psychosis has been noted to be feature of the late stages of ADC.¹⁹ 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.²³

Substance use disorder

Abuse of variety of substances, including alcohol, and other illicit drugs may be common in groups at high risk of HIV infection.^{18, 21} Continued abuse of substances may have many adverse consequences, including interference with patients, compliance with needed medical treatment, increased risk of behaviour that could result in further transmission of HIV (such as unsafe sex while intoxicated, sharing needles etc.), as well as morbidity related directly to the used of the

substance, it is therefore necessary to do a careful assessment for an existing substance use disorder of HIV positive patients.

Pain syndrome

Pain neuropathies occur very frequently in person with AIDS. 25 Most common is distal symmetrical polyneuropathy characterised by painful, burning dysesthesias. A variety of other neuropathies may also occur at all stage of HIV infection. In addition, pain is a common component of many of the serious illnesses that occur in persons with AIDS, such as herpes zoster and advance malignancies.

Neuropathological finding in AIDS

Abnormal finding on magnetic resonance imaging (MRI), or computerised tomography (CT) scan and Neuropathological changes are found in the majority of patients with ADC.^{9, 19} CT or MRI studies on patient with ADC almost always reveal cortical atrophy. Histologically, multinucleate cells, white matter pallor, astrocytosis and spongiform white matter changes are frequent finding⁹ cerebrospinal fluid (CSF) abnormalities include pleocytosis, increase IgG and IgG index, oligoclonal bands and intrathecal synthesis of HIV IgG antibodies.^{20,25} These changes are similar to those seen in senile dementias.

Conclusion

Several studies have shown a significant correlation between HIV/AIDS and psychiatric disorders, the commonest neuropsychiatric manifestation is adjustment reaction in the form of anxiety and depressive illness. However, other psychiatric illnesses are quite common. The relationship between HIV/AIDS and psychiatric illness may be due to the neurotropic effect of the retrovirus and/or as a result of insult on the CNS by opportunistic infections resulting from immunosuppression.

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