LEADING ARTICLE

PSYCHOLOGICAL AND PSYCHIATRIC ASPECTS OF HIV INFECTION

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The human immunodeficiency virus (HIV) infection causes a spectrum of disorders related to the acquired immune deficiency syndrome (AIDS) by destroying the cell mediated immunological defence of the body. The first evidence of HIV infection is the presence of HIV antibodies detected by the enzyme-linked immunosorbent assay (ELISA). Even before HIV seroconversion, studies show cognitive impairment in high risk homosexuals compared with heterosexual controls (1,2), indicating an early invasion of the central nervous system which is supported by isolation of the virus in the cerebrospinal fluid at the asymptomatic stage (3,4). The manifestations of HIV infection can be classified into four stages: (1) asymptomatic carriers with no signs of ill health, (2) persistent generalized lymphadenopathy, (3) AIDS-related complex (ARC) - symptomatic with fatigue, fevers and impairment of the immune system, (4) AIDS - symptomatic with life-threatening opportunistic infections and Kaposi's sarcoma (5). Any of these stages may be complicated by psychological, psychiatric and neuropsychiatric reactions.

The psychiatric reactions relating to the human immunodeficiency virus (HIV) infection cover the whole range of mental illness and psychosocial problems. In a recent review of the existing literature on the subject, Detmer and Lu (1986-87) (6), find that as many as 40 percent of patients with AIDS have neuropsychiatric complications at some point in their illness. These complications include either focal deficits attributable to opportunistic organisms infecting the central nervous system or diffuse encephalopathy caused by viral infection or lymphoma infiltration. Psychiatric complications include major depression, adjustment disorder with depressed mood, and organic brain syndrome with affective, delusional or demented features.

One of the earliest studies is a retrospective review of 52 patients with AIDS in the New York Hospital (7) in which neuropsychiatric complications are found to be pervasive clinical features in AIDS patients hospitalized during acute illness - the most common being mood disturbance (83%) and signs of organic mental syndrome (65%). References to neuropsychiatric complications appear in every patient's chart. AIDS patients are found to have a heightened risk of psychological problems as they are faced with many factors which include the threat to life, severe physical debilitation, central nervous system involvement, fear of contagion, disclosure of homosexuality or drug abuse, and guilt associated with sexual transmission. Buhrich and Cooper (1987) (8) report that of the 22 referred for psychiatric consultation, out of 150 patients with the AIDS or AIDS-related complex (ARC), 10 have an organic brain syndrome of which 6 are as a result of cerebral opportunistic infection and two are apparently due to the direct neurotropic effects of the human immunodeficiency virus (HIV). Five have hallucinations and delusions of whom two are non-organic. Four are diagnosed as adjustment disorder with depressive mood, one patient as a major depressive illness and four as having markedly slow mentation with only mild or no evidence of cognitive impairment. They conclude that patients with AIDS may have a wide variety of neuropsychiatric manifestations.

Psychiatrists and physicians must be alerted to these complications of AIDS so as to make accurate diagnoses and deliver appropriate therapy. Further studies, integrating both psychiatric and neurological perspectives, are needed to better elucidate the neuropsychiatric complications of AIDS and help plan appropriate therapeutic interventions. Psychiatric manifestations are seen even before potential patients become HIV-seropositive for AIDS. High risk individuals, homosexual and bisexual men and intravenous drug users are concerned about developing AIDS and have a significiant psychological distress (9). Their symptoms are anxiety-related and include generalized anxiety, panic attacks, obsessive-compulsive symptoms, hypochondriasis and somatic preoccupations (10, 11). Valdiserri (1986) (12) describes an abnormal fear of AIDS in ego-dystonic homosexuals.

Psychological reactions that develop after the detection of HIV-seropositive reaction or the diagnosis of the various stages of AIDS, are similar to those reported in patients who discover that they suffer from terminal cancer (13-15). Initially there will be shock, denial and disbelief. This is followed by a transitional stage of alternating anger, guilt, depression and anxiety (15), before they eventually accept their fate. The anxiety symptoms include agitation, panic attacks, tachycardia, anorexia and insomnia (10). The diagnosis of AIDS is a catastrophic event because of its poor prognosis and its association with the stigmatized group of homosexuals

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and intravenous drug abusers. There is also uncertainty about the implications of an AIDS diagnosis. All these lead to social withdrawal and isolation, insecurity, depression, resentment and guilt over previous life style. The depressive mood may include suicidal ideation, but suicide attempts are rare. Goldmeier (1987) (15) describes the bereavement after diagnosing AIDS as an interaction of psychological symptoms secondary to brain disease and the social consequences of having AIDS to produce a devastating illness where the patient may be intensely grieving, demented and totally rejected by all of society.

Neuropsychiatric syndromes in AIDS include dementia, delirium, personality changes, affective syndromes and psychosis. Symptoms include agitation, depressed mood, hallucinations, delusions, socially inappropriate behaviour and memory problems. Mania has been reported in two patients with cryptococcal meningitis (16). Whiteford and Gsernansky (1986) (17) attribute these psychiatric manifestations to a disturbance in cerebral function caused by HIV and/or opportunistic infection or malignancy. Holmes et al (1989) (18) find that all their 17 patients have some degree of cognitive impairment. Psychiatric diagnoses include organic mental disorder (8 cases), adjustment disorder (5 cases), and major depression (4 cases). Dilley et al (19) find that in their 40 inpatients, most common DSM-III diagnoses are adjustment reaction with depressed mood, major depression, dementia, delirium and panic disorder. Perry and Jacobsen (1986) (20), in their review on psychiatric manifestations among patients with AIDS-spectrum disorders conclude that the symptoms may be functional reactions to contracting a fatal and stigmatizing disease or secondary to malignancies and opportunistic infections in the central nervous system, but more recent evidence indicates a direct infection of the central nervous system which may cause psychiatric symptoms before signs of immunodeficiency, cognitive impairment, or neurological abnormalities emerge (1, 2).

Involvement of the central nervous system produces initially cognitive impairment, and later subacute encephalopathy and dementia. These symptoms and syndromes could be due to disturbance of cerebral function caused by direct HIV infection, opportunistic infection and malignancy. They are often complicated by the patient's psychological reaction to the illness and his personality. Faulstich (1987) (9) reports that central nervous system dysfunction and subsequent neuropsychiatric impairment are common and initially consists of decreased acuity, slowed mentation and psychomotor retardation that can resemble depression, and later developing marked global cognitive deficits, disorientation, and delusions.

Cognitive impairment has been reported in most of the AIDS patients. Holmes et al (1989) (18) find that all their 17 patients are found to have some degree of cognitive impairment. Boccellari et al (1988) (21) report that AIDS spectrum patients often demonstrate impairment on tasks involving abstract reasoning, memory, speeded mental processing and motoric slowing. Silberstein et al (1987) (1) carried out a prospective longitudinal study of neuropsychological and psychosocial factors in 211 asymptomatic subjects of whom 70 (33%) are HIV-seropositive and 141 (67%) are HIV-seronegative. By multivariate analysis the HIV-seropositives are significantly more impaired on the WAIS-Similarities and Wechsler-Associative Learning tests. Their results suggest that HIV-seropositive patients may show evidence of impaired neuropsychological function even in the absence of AIDS related symptoms and are consistent with the hypothesis of the early neurotropism of HIV infection. Grant et al (1987) (2) who conduct neuropsychological evaluations of 55 ambulatory homosexual men reveal abnormalities in 13 of 15 with AIDS, 7 of 13 with ARC, 7 of 16 who are HIV-seropositive, and only 1 of 11 who are HIV-seronegative. Common neuropsychologic problems include impaired abstracting ability, learning difficulties and slowed speed of information processing. Rubinow et al (1988) (22) in their progressive study, administer neuropsychological tests to 13 patients with clinical AIDS, 9 HIV-seropositive patients, 4 HIV-seropositive patients with chronic active hepatitis, 5 HIV-seronegative patients with chronic active hepatitis, and 6 healthy controls, find that the AIDS patients have substantially lower scores on a variety of cognitive tests than the rest. The test results obtained may reflect focal and global cognitive impairment as well as motivational decrements in patients with the AIDS relative to HIV-seropositive patients or controls. Atkinson et al (1988) (23) in a controlled prospective study of unselected sample of 56 ambulatory homosexual men in four groups: AIDS, ARC, asymptomatic but HIV-seropositive, and HIV-seronegative, find no difference among the homosexuals, but compared with the heterosexual controls, all the homosexuals have higher prevalence of anxiety disorder and major depressive illness. They conclude that psychiatric morbidity may have preceded the onset of the HIV infection.

Organic neuropsychiatric syndromes include subacute encephalopathy and dementia. Snider et al (1983) [24] report subacute encephalitis in 18 of 50 AIDS patients. Symptoms are malaise, social withdrawal, lethargy, reduced sexual drive, anorexia, diarrhoea, and weight loss. Over several weeks they progress to dementia with psychomotor retardation, incontinence, confusion and hallucinations. Cerebrospinal fluid changes include cells and protein. CT scans show generalized cerebral atrophy. The incidence of dementia in AIDS has been reported to be up to 40% [9]. Dementia can be caused by a variety of viral (herpes) and non-viral infections (toxoplasmosis, cryptococcosis), cerebrovascular complications and neoplasms. Perry and Marotta (1987) [25] in a review of the literature, find that mental disturbances associated with AIDS are related not only to profound psychosocial stress, systemic diseases, and neoplasms or opportunistic infections within the central nervous system; they are also related to the direct neurotoxicity of the etiologic HIV, producing an array of both insidious and acute affective, cognitive and behavioural dysfunction that can mimic many neuropsychiatric disorders. Grant et al (1987) [1] postulate that central nervous system involvement by HIV may begin early in the course of AIDS and cause mild cognitive deficits in otherwise asymptomatic persons. Although a high prevalence of central nervous disease is seen in persons with the AIDS, the natural history of brain involvement with HIV remains poorly understood.

Diederich et al (1988) [26] who study 79 patients on various stages of HIV infection, find that the percentage of patients with these antibodies in CSF increases from stage WR1 (33%) to WR 5 (90%). It decreased again in WR6 (68%). Some were without evidence of opportunistic or pre-existent neuropsychiatric diseases. Progression

to severe dementia solely caused by HIV encephalitis seems to be possible. Their study gives further evidence for very frequent, early and clinically active involvement of the nervous system by the HIV infection. McArthur et al (1988) [27] study cerebrospinal fluid obtained from 38 homosexual or bisexual men and finds a high rate of cerebrospinal fluid abnormalities in men with neuropsychiatric findings, including pleocytosis (41%), elevated IgG and IgG index (47%), and oligoclonal bands (18%). Even in the absence of neuropsychiatric findings, the asymptomatic HIV-seropositive subjects frequently have spinal fluid abnormalities. The results support the hypothesis that the nervous system is an early target for HIV.

Direct central nervous system involvement by the AIDS virus has been supported by the isolation of the virus from the neuronal tissues and the cerebrospinal fluid [28]. Hollander and Levy (1987) [3] are able to recover from 30 of 48 cerebrospinal fluid specimens from HIV-seropositive persons with and without neurological symptoms or disease, the human immunodeficiency virus. Patients with headache or altered mental status have the highest recovery rate of HIV from cerebrospinal fluid. Chiodi et al (1988) [4] attempt to isolate the HIV from the cerebrospinal fluid (CSF) of 63 subjects at different stages of HIV infection, including asymptomatic carriers and patients with or without neurological or psychiatric complications. In addition, blood is collected from 40 of these subjects for virus isolation. HIV could be isolated from the CSF at all clinical stages with an overall frequency of 40%. In contrast, the frequency of HIV isolation from the blood is lower (32%) at the early stages of infection than in patients with severe disease (77%). HIV isolation from the CSF is more frequently positive in patients with neurological or psychiatric complications than in patients showing no such disturbances.

The high prevalence of psychiatric complications of AIDS requires guidelines on their management. Carlson et al (1989) [29] and Vomvouras (1989) [30] suggest a specialized treatment approach for noncompliant HIV-infected patients and for the various forms of AIDS-related psychopathology respectively. Perry and Markowitz (1986) [31] find that depression, delirium, and denial that occur in medically hospitalized patients with AIDS respond to standard psychotherapeutic and psycho-pharmacological approaches. Patients with AIDS-related dementia are helped considerably by early diagnosis and planning, and patients with antibodies to the AIDS virus require a psycho-educational approach that includes stress inoculation and problem-solving techniques. Ostrow et al (1988) [32] find that psychostimulants are the most promising therapeutic agents for AIDS patients. In the treatment of psychotic episodes, high-potency neuroleptics at low dosages have been used successfully. Holmes et al (1989) [33] who used methylphenidate or dextroamphetamine to treat 17 of 32 patients with ARC who are referred for neuropsychiatric evaluation of cognitive and/or affective dysfunction, find that pharmacotherapy with either psychostimulant is clinically effective in improving affective parameters in 90% (15) of the 17 patients, with 79% (13) of the 17 achieving a moderate to marked response. No adverse side effects are encountered.

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