Neurobehavioral Manifestations of Human Immunodeficiency Virus/AIDS

Diagnosis and Treatment

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KEYWORDS

• Brain • Infection • Delirium • Encephalitis • Behavior • HIV • AIDS

KEY POINTS

- Behavioral disorders are an important problem in patients with human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome even in the current era of antiretroviral therapy.
- Behavioral disorders can be caused by preexisting psychosocial problems, substance abuse, or major psychiatric disorders, or by HIV infection itself, opportunistic infections, or effects of medications that treat HIV and related conditions.
- Physicians who evaluate behavioral changes in patients infected with HIV should screen for underlying medical disease, substance abuse, adverse effect of medications, and suicide risk.

INTRODUCTION

More than 34 million persons worldwide are infected with human immunodeficiency virus (HIV) type 1, which is the cause of acquired immunodeficiency syndrome (AIDS). An estimated 20% of the more than 1 million individuals infected with HIV (HIV+) in the United States are unaware of their HIV serostatus, and do not receive treatment with antiretroviral therapy (ART). Among those who are aware of their serostatus, more than 50% receive no ART or receive only inadequate treatment, which places them at high risk for morbidity and mortality,[1] including central nervous system (CNS) disorders.

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HIV invades the CNS early, during the first days to weeks of primary infection. Approximately 24% of patients with primary HIV infection have symptoms of an aseptic meningitis. HIV infection can result in progressive cognitive, motor, and behavioral abnormalities, particularly in persons who receive no ART, begin ART late in their disease, or receive inadequate ART that does not fully suppress HIV.[1]

The neuropsychiatric effects of HIV can mimic idiopathic psychiatric disorders, delaying diagnosis and treatment of the underlying cause. The differential diagnosis of behavioral disorders in HIV+ persons includes preexisting psychiatric disease, infections, and medication-related causes. Because the processes that underlie such behavioral changes can be varied, this article first describes some important HIV-related behavioral symptoms (**Box 1**) and then describes the clinical features of the most common underlying conditions.

BEHAVIOR DISORDERS CAUSED BY PREEXISTING PSYCHIATRIC ILLNESS

Behavioral disorders are common among both HIV+ and at-risk HIV-seronegative (HIV−) persons. Depression and anxiety receive the most attention, but delirium, apathy, mania, and severe mental illness (SMI) are also important. Although the presence of pre-HIV mental disorder is the strongest predictor of psychiatric diagnosis after knowledge of seropositivity,[2] it can be difficult to disentangle the effects of premorbid psychiatric illness from the biological effects of HIV, CNS opportunistic infections (OI), prescribed medications, or substance abuse. However, these distinctions are important in order to provide accurate diagnoses and treatments.

SEVERE MENTAL ILLNESS

Individuals with SMI, such as schizophrenia, bipolar disorder, and major depressive disorder (MDD), are at increased risk for contracting HIV. Once infected, they are at higher risk for suicide attempts, substance abuse, and failure to adhere to ART.[3] Adults with SMI are disproportionately at risk because they are more likely to have multiple sexual partners, fail to use condoms, and engage in needle sharing. They are more resistant to risk reduction efforts because most of these programs assume that they have the cognitive capacity to make informed decisions about their behavior. Individuals with substance use disorders and victims of physical and sexual abuse also have specific risks for acquiring HIV.[4]

Persons with a premorbid history of idiopathic SMI are characterized as having primary psychosis, whereas those with new SMI associated with medical illness, HIV disease, OI, or metabolic encephalopathies are characterized as having secondary psychosis.[5] There are phenotypic differences between primary psychosis and the

Box 1
Presentation of behavioral disorders in persons affected by HIV/AIDS

I. Preexisting psychiatric disease
II. Depression
III. Anxiety
IV. Mania
V. Apathy
VI. Delirium