

# Neuropsychiatric Aspects of Infectious Diseases

## An Update



Sahil Munjal, MD<sup>a</sup>, Stephen J. Ferrando, MD<sup>a,\*</sup>,  
Zachary Freyberg, MD, PhD<sup>b,c</sup>

### KEYWORDS

- Neuropsychiatric disturbances • Infectious diseases • Delirium • HIV-AIDS
- Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections • Herpes simplex encephalitis • Neurocysticercosis • Neurosyphilis
- Creutzfeldt-Jakob disease • Neuroborreliosis

### KEY POINTS

- Among the critically ill, infectious diseases can play a significant role in the etiology of neuropsychiatric disturbances.
- All critical care physicians are familiar with delirium as a secondary complication of systemic infection.
- This article focuses on key infectious diseases that commonly and directly produce neuropsychiatric symptoms, including direct infection of the central nervous system, human immunodeficiency virus infection, and AIDS.

### INTRODUCTION

Among the critically ill, infectious diseases can play a significant role in the etiology of neuropsychiatric disturbances. All critical care physicians are familiar with delirium as a secondary complication of systemic infection. This article focuses on key infectious diseases that commonly and directly produce neuropsychiatric symptoms, including direct infection of the central nervous system (CNS), human immunodeficiency virus (HIV) infection, and AIDS.

HIV-AIDS is often seen as the modern “great imitator,” a complex infectious disease with multiple manifestations and interplay of myriad biopsychosocial factors, including

---

This article is an update of an article previously published in *Critical Care Clinics*, Volume 24, Issue 4, October 2008.

<sup>a</sup> Department of Psychiatry, Westchester Medical Center, New York Medical College, 100 Woods Road, Valhalla, NY 10595, USA; <sup>b</sup> Department of Psychiatry, University of Pittsburgh, 3811 O’Hara Street, Pittsburgh, PA 15213, USA; <sup>c</sup> Department of Cell Biology, University of Pittsburgh, 3811 O’Hara Street, Pittsburgh, PA 15213, USA

\* Corresponding author.

E-mail address: [Stephen.Ferrando@wmchealth.org](mailto:Stephen.Ferrando@wmchealth.org)

Crit Care Clin 33 (2017) 681–712  
<http://dx.doi.org/10.1016/j.ccc.2017.03.007>

[criticalcare.theclinics.com](http://criticalcare.theclinics.com)

0749-0704/17/© 2017 Elsevier Inc. All rights reserved.

neuropsychiatric disorders related to direct HIV-1 brain invasion, CNS opportunistic infections, manifestations of concurrent drug abuse, hepatitis C coinfection, and iatrogenic complications. Differential diagnosis and management of HIV-AIDS-related neuropsychiatric disturbances can serve as a paradigm for other infectious diseases that have neuropsychiatric manifestations.

### **MEDICAL HOSPITALIZATION IN HUMAN IMMUNODEFICIENCY VIRUS-AIDS**

With the widespread availability of highly active antiretroviral therapy (HAART) for HIV infection in developed countries, there have been dramatic declines in HIV-related hospital admissions. Between 1995 and 1997, admissions dropped 33% to 75%.<sup>1-4</sup> Since that time, rates have stabilized or rebounded slightly. The reasons for medical hospital admission have also shifted. In 2 urban hospital studies,<sup>3,4</sup> a drop in hospitalization caused by opportunistic infections and cancers was observed, contrasting with a rise in nonopportunistic complications, such as hepatitis C and cardiovascular disease. Mean CD4 counts of HIV inpatients were seen to increase by more than 100 cells/mm<sup>3</sup> from 1995 to 2001.<sup>3</sup> During 1990 to 2011, among persons with AIDS, the annual rate of death due to HIV-attributable causes has also decreased by 89%.<sup>5</sup>

Factors that seem to confer risk for medical hospitalization in the HAART era include low CD4 count, female gender, lack of antiretroviral treatment, and injection drug use.<sup>3,4</sup> The sociodemographic characteristics of those at risk reflect the shifting demographics of the HIV epidemic, limitations in access to care, and poor adherence to antiretroviral treatment.

### **EPIDEMIOLOGY OF PSYCHIATRIC DISORDERS IN MEDICAL INPATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS-AIDS**

There are extensive epidemiologic data regarding psychiatric disorders in ambulatory patients with HIV-AIDS. Overall, studies reveal high rates of lifetime and current substance abuse and depressive and anxiety disorders (see Ferrando and Tiamson<sup>6</sup> for a review of this literature). As seen in **Table 1**, among medically hospitalized patients with HIV, studies indicate a similar profile; however, delirium, dementia, and manic-spectrum disorders seem to be more common.<sup>7-11</sup> The most frequently diagnosed disorders are in the depressive spectrum (range, 27%–83%), including depression secondary to medical condition (or organic mood disorder), adjustment disorder with depressed mood, major depressive disorder, or dysthymic disorder. Delirium is diagnosed in 8% to 29% of patients, regardless of HIV stage, and is often reported to be concurrent with HIV-associated dementia, diagnosed in 8% to 22% of cases. Substance use disorders are diagnosed in 11% to 36% of inpatients with AIDS and up to 63% in patients who are HIV-positive without AIDS. One study found that bipolar disorder and HIV-associated mania occurred in 11% of medical inpatients.<sup>11</sup>

### **HUMAN IMMUNODEFICIENCY VIRUS AND THE BRAIN**

Since the beginning of the HIV epidemic, it has been recognized that HIV can infect the CNS and produce a range of cognitive and behavioral symptoms that become more frequent and severe as the immune system declines and symptomatic illness and AIDS ensue. In 1991, the American Academy of Neurology published research diagnostic criteria for HIV-associated cognitive, motor, and behavior disorders,<sup>12</sup> which remained in widespread use until the diagnostic criteria were recently updated by a work group convened at the National Institute of Mental Health.<sup>13</sup> Based on cumulative research and clinical evidence, this group described 3 HIV-associated

Download English Version:

<https://daneshyari.com/en/article/5636427>

Download Persian Version:

<https://daneshyari.com/article/5636427>

[Daneshyari.com](https://daneshyari.com)