**THE INFECTIOUS DISEASE SPECIALIST AND THE PSYCHIATRIST: UNDERSTANDING THE PSYCHIATRIC ISSUES IN THE TREATMENT OF HIV-INFECTED PATIENTS**

Glenn J. Treisman, MD, PhD

**ABSTRACT**

The extraordinarily high comorbidity of psychiatric disorders with human immunodeficiency virus (HIV) infection requires every member of the HIV health care team to be able to identify and understand how to treat these disorders. Two very different disorders with similar symptoms are demoralization and depression, which are highly prevalent in patients with HIV disease. Recognition and treatment of these conditions is essential to successful HIV drug therapy. Although many studies show the benefits of addressing psychiatric disorders in patient outcomes, funding for psychiatric services are not a priority in HIV patients, in part because these populations are often the disenfranchised of society. This article uses a case study to illustrate the effect of psychiatric disorders in HIV patient outcomes and shows how the psychiatrist is an integral member of the HIV health care team. (A more thorough description of the case has been published previously [Treisman GJ, et al. JAMA. 2001;286:2857-2864.]) In addition, methods the infectious disease specialist can use to recognize and possibly treat demoralization and depression in HIV-infected patients are discussed.


*This article is based on a presentation given by Dr Treisman at a satellite symposium at the 39th Annual Meeting of the Infectious Diseases Society of America.

Correspondence to Glenn J. Treisman, MD, PhD, Johns Hopkins University School of Medicine, Meyer 4-119, Baltimore, MD 21287. E-mail: glenn@jhmi.edu.

The comorbidity of psychiatric illness in patients with human immunodeficiency virus (HIV) is astoundingly high. Of the HIV-infected patients at the Moore Clinic, the HIV clinic at Johns Hopkins Hospital in Baltimore, Maryland, 75% have a substance abuse disorder and 20% are significantly cognitively impaired, many with an intelligence quotient (IQ) of less than 70 (based on a 10-question screen that can predict IQ within approximately 10 points). More than half of these patients have a major mental illness other than substance abuse. Not surprisingly, these psychiatric disorders are an obstacle to treatment.

Psychiatric disorders in HIV-infected patients have become more prevalent in the era of highly active antiretroviral therapy (HAART), as the patients receiving this type of treatment live longer, healthier lives and can shift their focus away from preparation for death and dying. Unfortunately, psychiatry remains marginalized in the treatment of HIV, and patients are usually only referred to the psychiatrist when they are considered intolerable and unruly, in the hopes that the psychiatrist can resolve the personality problems so that other members of the health care team can focus on their traditional province of health care. Although many of the patients appear to be difficult cases, an understanding of human personality, temperament, and the common psychiatric disorders in HIV-infected patients provides nonbehavioral specialists with key insights into methods of managing these patients. When infectious disease (ID) specialists begin to recognize and address the psychiatric comorbidities with HIV infection, the patient's compliance with HAART
increases and the ID specialists may be able to treat the psychiatric illness without referring to a psychiatrist.

A complex case is presented in this article to illustrate the key concepts in understanding the patient and how this understanding can be achieved by health care professionals outside of the field of psychiatry. A more thorough description of the case has been published elsewhere. The discussion that follows is intended for the ID specialist who treats HIV-infected patients and the take-home message is simple: know your patient.

**DISCUSSION**

One of the first challenges for the psychiatrist or the ID specialist is to determine if the patient has a psychiatric disorder. This includes evaluating the patient for personality type. A patient with a reportedly difficult personality can make this challenge appear insurmountable, but in reality, it is not.

Unlike internal medicine, where establishing the diagnosis is the initial focus, psychiatry often focuses on symptom-directed empiric treatment or is based on a theory of all psychiatric problems. For example, a patient presenting to the ID specialist with a cough is not simply given a cough suppressant. The cause of the cough is determined. In psychiatry, an anxious patient may receive an antianxiety medicine, a depressed patient may be given an antidepressant, and almost any patient may receive insight-directed therapy. In psychiatry, as in the rest of medicine, knowing the disorder and understanding the cause of the disorder is the best guide to treatment.

**KNOW YOUR PATIENT: COMPLIANCE**

Compliance and adherence are major issues with HAART, particularly in underserved populations. Studies have shown that with research subjects receiving therapy, viral loads can decrease to nondetectable levels in 85% of patients. In the real world, the proportion of patients reaching nondetectable viral loads is about 25% to 35%. As discussed previously, at least half of all HIV patients have a comorbid psychiatric disorder, and one of the biggest obstacles to compliance with HIV medication is the presence of a psychiatric disorder.

Besides psychiatric illness, many other factors affect compliance, including issues of the type and nature of a disease, the presence of other medical conditions, and the severity of the illness. Also, pharmacologic factors such as frequent dosing, inconvenient dosing, complex treatment regimens, side effects, and questionable efficacy can undermine compliance.

**KNOW YOUR PATIENT: COGNITIVE CHALLENGES**

A high percentage of patients in the HIV clinic are cognitively impaired, resulting in the need to adjust the approach to care for each patient. Patients often require education about their conditions and written treatment plans. This requires understanding of the patient’s mental state. For example, when asked, “Do you practice safe sex?” the patient may not understand the meaning of the word “practice” in this context. A patient may appear disagreeable in answering these questions or making lifestyle alterations that include lower-risk behaviors; in these cases, a lower IQ may be to blame for their lack of understanding rather than a lack of willingness to improve compliance.

**KNOW YOUR PATIENT: PSYCHIATRIC CHALLENGES**

Mental illness increases the risk for acquiring HIV, and HIV infection increases the risk for mental illness. HIV infects the brain and causes depression, cognitive impairment, demoralization, and substance abuse, as well as causing a worsening of illness.

In general, psychiatric illnesses can be distilled into 1 of 4 categories: brain diseases, such as biochemical imbalance or focal lesion; personality disorders; disorders of motivated behavior (addictions); and problems that emerge from life circumstances. An ID specialist can discern which type of illness the patient has and should understand the differences in how they should be approached.

One of the most common diagnostic issues is the confusion between depression, an organic brain disorder, and demoralization, which is a product of life circumstances (such as loss of job or divorce). Treatment with an antidepressant will most likely not help demoralization. Demoralized patients need support, understanding, cognitive psychotherapy, and other kinds of psychotherapy. Table 1 summarizes important differences between depression and demoralization.

Another significant difference between depression and demoralization is in the perception of rewards, such as a job promotion or a compliment. Depression affects a person's experience of the world. The patient described in the case study was irritable because she was not getting...
any rewards. When the biochemical disorder was attenuated with desipramine, her mood improved and she could perceive the rewards that did not seem rewarding to her when she was sick; these include the ability to have a relationship with her doctor and with people and the ability to hold a job. The relationship with the physician is important not only because it helps to improve adherence and outcomes through monitoring but also because it is viewed by the patient and should be used as a reward (please see sidebar article “What Is Personality Disorder?”).³

UNDERSTANDING DEPRESSION AND ITS TREATMENT

Patients who are depressed often stop doing activities they enjoy, such as eating, socializing, and having sexual relations. Others, determined to get a reward, overindulge in these activities. This latter reaction to depression explains the way in which depression can lead to addiction and how depression can confound people and distort their behavior.

Treating depression and demoralization in patients with HIV is essential. If depression is not recognized and treated, the patient is less likely to comply with treatment plans. In fact, depressed patients often do not take their antidepressant medications. Part of the psychotherapy for major depression is encouraging patients to take their antidepressants.

Patients often automatically attribute their depression to stress, having HIV, or being an addict; they do not recognize it as a disease and may not report it. Depression may be attributed to life circumstances, and HIV patients can have many reasons to have depression or low mood, including regret for the activities, such as casual sex, drug use, irresponsibility on the job, in which they have partaken. Because of this, determining whether the drop in mood is because of the HIV effects, the person’s life, or the disease of depression, is quite difficult. And the physician, not just the psychiatrist, has to be even better at diagnosing depression than with a more obvious disease.

Fortunately, treatment of depression is straightforward, and studies have shown that 85% of patients show improvement with antidepressant treatment, and 50% get well. Three classes of antidepressant drugs have been shown to work well, depending on the patient. ID specialists should familiarize themselves and feel comfortable with using 1 or 2 drugs from each class. Tables 2 and 3 list various antidepressants and mood stabilizing agents, common side effects, advantages, and interactions with HIV medications.

SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIs)

SSRIs are easy to use, have tolerable side effects, and have a wide margin of safety in overdose. Occasionally, they may interact unpredictably with HIV medications in HAART. When adding or changing HAART, look for the possibility that the patient may become either subtherapeutic because of cytochrome P450 induction (in which case the dose should be increased) or develop signs of toxicity because of competition at P450 enzymes (in which case the dose should be decreased). Measuring serum drug levels with SSRIs is not necessary because of the wide margin of safety and because patients respond to such a wide range of doses. All of the SSRIs that have been evaluated treat depression effectively. Examples include fluoxetine, sertraline, paroxetine, fluvoxamine,
**Table 2. Antidepressants**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Start Dose</th>
<th>Usual Therapeutic Dose</th>
<th>Serum Level</th>
<th>Advantages</th>
<th>Interactions with HIV Medicines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nortriptyline</td>
<td>10 to 25 mg at bedtime</td>
<td>50 to 150 mg at bedtime</td>
<td>70 to 125 ng/dL</td>
<td>Promotes sleep and weight gain; decreases diarrhea</td>
<td>Increases nortriptyline levels: fluconazole, LPT/RTV, RTV</td>
</tr>
<tr>
<td>(Pamelor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desipramine</td>
<td>10 to 25 mg at bedtime</td>
<td>50 to 200 mg at bedtime</td>
<td>&gt;125 ng/dL</td>
<td>Promotes sleep and weight gain; decreases diarrhea</td>
<td>Increases desipramine levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Norpramin)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imipramine</td>
<td>10 to 25 mg at bedtime</td>
<td>100 to 300 mg at bedtime</td>
<td>&gt;225 ng/dL</td>
<td>Promotes sleep and weight gain; decreases diarrhea</td>
<td>Increases imipramine levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Tofranil)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amitriptyline</td>
<td>10 to 25 mg at bedtime</td>
<td>100 to 300 mg at bedtime</td>
<td>200 to 250 ng/dL</td>
<td>Promotes sleep and weight gain; decreases diarrhea</td>
<td>Increases amitriptyline levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Elavil)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clomipramine</td>
<td>25 mg at bedtime</td>
<td>100 to 200 mg at bedtime</td>
<td>150 to 400 ng/dL</td>
<td>Promotes sleep and weight gain; decreases diarrhea</td>
<td>Increases clomipramine levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Anafranil)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doxepin</td>
<td>10 to 25 mg at bedtime</td>
<td>150 to 250 mg at bedtime</td>
<td>100 to 250 ng/dL</td>
<td>Promotes sleep and weight gain; decreases diarrhea</td>
<td>Increases doxepin levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Sinequan)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>10 mg each morning</td>
<td>20 mg at bedtime</td>
<td>Unclear</td>
<td>Activating</td>
<td>Increases fluoxetine levels: NVP</td>
</tr>
<tr>
<td>(Prozac)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sertraline</td>
<td>25 to 50 mg each morning</td>
<td>50 to 150 mg at bedtime</td>
<td>Unclear</td>
<td>Somewhat sedating</td>
<td>Increases sertraline levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Zoloft)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citalopram</td>
<td>20 mg each morning</td>
<td>20 to 60 mg each morning</td>
<td>Unclear</td>
<td>Somewhat sedating</td>
<td>Increases citalopram levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Celexa)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paroxetine</td>
<td>10 mg at bedtime</td>
<td>20 to 40 mg at bedtime</td>
<td>Unclear</td>
<td>Somewhat sedating</td>
<td>Increases paroxetine levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Paxil)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluvoxamine</td>
<td>50 mg at bedtime</td>
<td>150 to 250 mg at bedtime</td>
<td>Unclear</td>
<td>Somewhat sedating</td>
<td>Increases fluvoxamine levels: NVP</td>
</tr>
<tr>
<td>(Luvox)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>37.5 mg each morning</td>
<td>75 to 300 mg each morning</td>
<td>Unclear</td>
<td>Somewhat sedating</td>
<td>Increases venlafaxine levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Effexor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mirtazapine</td>
<td>7.5 to 15 mg at bedtime</td>
<td>15 to 45 mg at bedtime</td>
<td>Unclear</td>
<td>Promotes sleep and weight gain</td>
<td>Increases Mirtazapine levels: EFV, IDV</td>
</tr>
<tr>
<td>(Remeron)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nefazodone</td>
<td>50 mg bid</td>
<td>300 to 400 mg/day in divided doses</td>
<td>Unclear</td>
<td>Somewhat sedating</td>
<td>Increases nefazodone levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Serzone)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trazodone</td>
<td>50 to 100 mg at bedtime</td>
<td>50 to 150 mg at bedtime for sleep; 200 to 600 mg at bedtime for depression</td>
<td>Unclear</td>
<td>Promotes sleep</td>
<td>Increases trazodone levels: LPV/RTV, RTV</td>
</tr>
<tr>
<td>(Desyrel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bupropion</td>
<td>100 mg each morning</td>
<td>150 to 400 mg in divided doses</td>
<td>Unclear</td>
<td>Activating; no sexual side effects</td>
<td>Increases bupropion levels (unclear if clinically significant): RTV, EFV, N FV</td>
</tr>
<tr>
<td>(Wellbutrin)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LPV = lopinavir; APV = amprenavir; EFV = efavirenz; N FV = nelfinavir; NVP = nevirapine; RTV = ritonavir; DLV = delavirdine; IDV = indinavir; SQV = saquinavir.

and citalopram; additionally, venlafaxine is often included in this category.

**TRICYCLIC ANTIDEPRESSANTS (TCAs)**

TCAs tend to be forgotten with the availability of the SSRIs, but they have been shown to be very useful in treating depression, and, contrary to popular belief, their side effects are no worse than those with SSRIs. Also, dropout rates are the same if severity of disease is taken into consideration. Serum drug levels should be monitored because the toxicities are severe, such as a lower seizure threshold. Also, overdose is possible with TCAs. Some of the symptoms that may be considered adverse for the general depressed population can be considered an advantage for the HIV-infected patient: constipation (to treat AIDS diarrhea), drowsiness (for insomnia), weight gain (for wasting syndrome). TCAs have also been used for treating neuropathic pain, a common condition with HIV. In addition, TCAs are less expensive because the patents for many of them have expired and they are now available in the generic form. Examples of TCAs include nortriptyline and desipramine.

**ATYPICAL ANTIDEPRESSANTS**

Atypical antidepressants are a mixed group. Some, such as mirtazapine and nefazodone, offer some of the advantages of both TCAs and SSRIs but have greater safety than TCAs. Mirtazapine, for instance, is associated with significant weight gain and sedation, thus it can be used in patients with inanition and insomnia, but has a much broader therapeutic index and margin of safety than TCAs. Bupropion has almost no sedating effects, diminishes cravings for cigarettes, and has almost no sexual side effects. Examples include trazodone, nefazodone, mirtazapine, and bupropion. Some physicians would categorize venlafaxine in this category as it has some properties beyond those of other SSR1 drugs.

**CONCLUSION**

Substance abuse, psychiatric disorders, disenfranchisement, and psychological barriers have had a profound influence on preventing patients with HIV infection from getting optimal care. Part of this is due to the marginalization of psychiatry in the multidisciplinary treatment of these patients. Without treating depression, however, the effectiveness of HAART is minimal and the cost of this state-of-the-art HIV therapy is wasted.

HIV-infected patients who are addicts, prostitutes, poor, black, Hispanic, women, uninsured, and/or homeless are often the targets of discrimination. Far more data

---

**Table 3. Mood Stabilizer Agents**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Starting Dose</th>
<th>Usual Dose Range</th>
<th>Therapeutic Serum Level</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium carbonate</td>
<td>150 to 300 mg bid</td>
<td>300 to 900 mg bid</td>
<td>0.8 to 1.2 mEq/L</td>
<td>Nausea, diarrhea, weight gain, increased urination, diabetes insipidus, hypothyroidism, dose-related tremor</td>
</tr>
<tr>
<td>Sodium divalproex</td>
<td>125 to 250 mg bid</td>
<td>Approx. 20 mg/kg</td>
<td>50 to 150 ng/dL</td>
<td>Sedation, weight gain, hair loss, dose-related tremor, increased hepatic enzymes</td>
</tr>
<tr>
<td>Carbamazepine</td>
<td>100 to 200 mg bid</td>
<td>200 to 600 mg bid</td>
<td>8 to 12 ng/dL</td>
<td>Sedation, weight gain, dose-related tremor, agranulocytosis (rare)</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>100 to 300 mg tid</td>
<td>300 to 1200 mg tid</td>
<td>None established</td>
<td>Sedation, weight gain, headache</td>
</tr>
<tr>
<td>Lamotrigine</td>
<td>25 to 50 mg/day</td>
<td>100 to 250 mg bid*</td>
<td>None established</td>
<td>Rash, weight gain, Stevens-Johnson syndrome</td>
</tr>
</tbody>
</table>

*Patients taking sodium divalproex should not exceed 200 mg/day total dose of lamotrigine.

show the comorbidity of depression and HIV and the
benefits of treating psychiatric disorders with HIV than
with other disease, such as depression after myocardial
infarction or transplants, but the cost of psychiatric ser-
vice for these patients has not been a priority. While ID
specialists are not expected to become advocates for
treatment funding for these patients, they can recognize
the value of psychiatric services for their patients with
HIV disease and begin to recognize the effect of psychi-
atric disorders on the outcomes of these patients.

REFERENCES
1. Treisman G, Fishman M, Lyketsos C, McHugh PR.
Evaluation and treatment of psychiatric disorders associ-
2. Lyketsos CG, Hanson A, Fishman M, McHugh PR, Treisman
GJ. Screening for psychiatric morbidity in a medical outpa-
tient clinic for HIV infection: the need for a psychiatric pres-
GJ. Psychiatric morbidity on entry to an HIV primary care
clinic. AIDS. 1996;10(9):1033-1039.
4. Kilbourne AM, Justice AC, Rabeneck L, Rodriguez-Barradas
M, Weissman S. The VACS 3 Project Team. General med-
ical and psychiatric comorbidity among HIV-infected veter-
54(suppl 1):S22-28.
5. Treisman GJ, Angelino AF, Hutton HE. Psychiatric issues in
the management of patients with HIV infection. JAMA.
2001;286(22):2857-2864.
6. McHugh PR, Slavney PR. The Perspectives of Psychiatry. 2nd
of psychiatric treatment for HIV-infected patients.

What Is Personality Disorder?
The role of the reward can best be understood in terms of the patients personality. The personality can be considered a
continuum extending from introversion to extroversion. Extroverts focus on the present, their own feelings, and getting what
they want. Introverts focus on the future, avoiding consequences, and are function oriented. Given the extremes of these
types, how would a personality disorder be defined? For most individuals, personalities reside in the middle of this continu-
um, and most people use both styles, depending on the environment; eg, at the job or socially. HIV-infected patients tend
to be extroverts, and extroverts need rewards. This affects the approach to the patient. Instead of saying, “Stop that behavior
or something bad will happen,” extroverts need a reward; “If you do this for me, I’ll do that for you.” Also, because these
patients have already experienced many negative outcomes, the definition of “bad” as a warning becomes distorted.
Fortunately, extroverts are also able to clearly define the reward they want, such as help with housing or medication. Thus,
an interaction with an HIV patient may often be similar to this: “If you come to clinic for 6 visits in a row with a clean toxi-
cology screen, I’ll give you HIV therapy.” In the Moore Clinic, we often give extroverts who achieve undetectable viral loads
a standing ovation.

This approach also requires discipline on the part of the health care team. When an extrovert patient comes to the office
or clinic and is loud, hostile, argumentative, and emotional, the impulse is to drop everything and take care of the patient.
Then, when the patient is doing well, less attention is given. Instead, patients in crisis need to understand that they are in a
clinic with many other patients and need to be told that they have to wait until they can be seen, at which time they will
receive the full attention of the health care professional. Again, the reward system can be used even in crisis situations.

Finally, extroverts want people to be interested in them, and this can be used as a reward. After a milestone has been
reached, eg, the ability to buy a car, the reward is in appreciating what this means to the patient; “How does it feel to have
a car now?” Extroverts need to realize that the more they comply with the treatment plan, the more interested the physician
will be in the patients feelings. In the case presented here, the entire team addressed her illness, psychiatric as well as somat-
ic, giving her the reward of their attention if she chooses to cooperate.

REFERENCE
1. Treisman GJ, Angelino AF, Hutton HE. Psychiatric issues in the management of patients with HIV infection. JAMA.
2001;286(22):2857-2864.
Case Study

A 41-year-old woman was referred by the Moore Clinic to the Johns Hopkins Hospital AIDS (acquired immunodeficiency syndrome) Psychiatry Service. Her primary caregivers at the Moore clinic reported that she assaulted the staff. On initial evaluation, she was inarticulate, uncooperative, angry, and hostile. At the time of presentation, she was addicted to cocaine and opiates. She had abused substances since childhood and was undergoing treatment for polysubstance abuse with an affiliated program.

During childhood, she had a history of truancy from school and was reported to have violent outbursts. She had been placed in a foster home. She became pregnant at 14 years of age and dropped out of school. She supported herself through several service jobs but was not able to maintain steady employment. A diagnosis of adult attention-deficit/hyperactivity disorder was considered at the time of her evaluation because of a history of behavioral disturbance as a child.

In her adult life, she spent 3 terms in prison and developed an addiction to heroin at one point. At the time of evaluation, she had 4 children, was living with her aunt, and had worked at a variety of jobs. She was able to stay with some jobs for up to 2 years, including a relatively well-paying position as a nursing aide.

On initial laboratory evaluation, done before the availability of highly active antiretroviral therapy, viral load was relatively low and the CD4 count was greater than 1000 cells/mm³.

Desipramine was initiated for her depressed mood. In addition, some of the side effects of desipramine could be helpful for this patient, including sedation, antianxiety, and increased concentration. Because desipramine requires frequent blood-level monitoring, the physician-patient relationship was reinforced through frequent office visits. The risks of treatment with desipramine for this particular patient is that it can be lethal if combined with cocaine. After this dangerous adverse effect was discussed, the patient agreed to stop using cocaine so she could have the antidepressant. She was told that other antidepressants were available that were not toxic in combination with cocaine, but they would not be able to address her other symptoms as desipramine would. She chose desipramine. She responded well to the desipramine for several months, but her treatment was interrupted when a family member became ill and died. She returned to a downward spiral of demoralization, relapsed to drug use, and was ultimately lost to follow-up.

Two years later, this patient was admitted to the Johns Hopkins Hospital for a third episode of subacute endocarditis. A Hickman catheter was used to administer antibiotics and she remained hospitalized for 3 days in stable condition. On the fourth day, she developed a fever after leaving the floor to smoke a cigarette. A toxicology screen revealed cocaine and opiate use; a previous toxicology screen had been negative. The infectious disease (ID) team met with the patient to discuss her situation, and she told them she wanted to leave against medical advice with the Hickman catheter still in place. She insisted she could administer the antibiotics to herself intravenously.

At this point, the ID specialists had come up with 3 solutions: remove the Hickman catheter against her will and discharge her; leave the Hickman catheter in place and discharge her; inform her that she has a life-threatening illness and must stay on her antimicrobial medication, treat her against her will, and call for a psychiatric consult.

The ID team decided to call for a psychiatric consultation, which concluded that the patient's mental illnesses (a personality disorder and substance addiction) impaired her ability to make decisions. The entire treatment team, including the chief nurse, the patient's nurse, the ID specialists, the outpatient physician from the Moore Clinic, the psychiatric residents, and the attending psychiatrist, met and decided to complete her treatment at Hopkins over the next 5 weeks, and if the patient disagreed, she would be certified for involuntary psychiatric and medical care. The entire team met together with her and informed her of this decision and also discussed the option she would have in the future of seeking treatment elsewhere after her infection was no longer life threatening. The conditions of involuntary psychiatric and medical care were explained to her: a locked psychiatric ward, possibly in isolation and physical restraint, and no smoking. She chose to remain on the medical ward and be treated.

Ultimately, the desipramine treatment was resumed and she received methadone for opiate addiction. After discharge from the hospital, she came to her follow-up visits for blood-level testing and rejoined a substance abuse treatment program.

At this time, the patient's CD4 levels remain stable and she maintains part-time employment as a nursing assistant and peer counselor for drug-addicted patients with AIDS.