CLINICAL MANAGEMENT OF ALCOHOL USE AND ABUSE IN HIV-INFECTED PATIENTS

I. INTRODUCTION

The prevalence rate of alcohol use in the HIV-infected population is high, with some studies showing rates of heavy drinking to be almost twice those found in the non-HIV-infected population.[1] As part of the Community Health Advisory and Information Network (CHAIN) Project, HIV-infected participants from New York City were interviewed at least twice between 2002 and 2006; 21% screened positive for problem alcohol use during at least one interview period.

Clinicians need to be particularly vigilant for all levels of alcohol use and abuse in HIV-infected patients because even intermittent use can complicate the clinical management of HIV-infected patients by:

- Diminishing adherence to medications[2-4]
- Increasing risk of hepatic injury[5,6]
- Reducing the patient's ability to practice safer sex[7,8]
- Increasing the risk of side effects from medications
- Changing pharmacokinetics of prescribed drugs

Clinicians may often miss alcohol problems in patients with clinically stable HIV infection and those without evidence of liver disease, which underscores the importance of screening all patients for alcohol use.[5]

Key Point:
The role of the primary care clinician in the management of the patient who abuses alcohol or is dependent on alcohol is as follows:

- Identify the problem
- Present the diagnosis
- Work to engage and motivate the patient
- Participate in the initiation of treatment and continuum of care

This chapter focuses on the identification and outpatient management of alcohol use and abuse among HIV-infected patients who are engaged in HIV care. Care for the alcohol-abusing or -dependent inpatient is addressed in *Care of the Hospitalized HIV-Infected Substance User*.

II. ALCOHOL CONSUMPTION, DEFINITIONS, AND CRITERIA

Formal DSM-IV diagnoses encompass a broad range of alcohol use disorders, including alcohol abuse and alcohol dependence (see Table 1).[9] Many people who drink alcohol do not meet the criteria for abuse or dependence, but may drink to levels that increase their risk of physical, mental health, and social problems.

Use of alcohol, like illicit substances and some prescription drugs, can lead to dependence. Dependence is a chronic, relapsing condition that does not end when the addictive substance is removed from the body. It is a medical disorder with a complex etiology, multiple manifestations, and a varied clinical course.

TABLE 1
TERMINOLOGY USED TO DESCRIBE ALCOHOL MISUSE[a]

At-risk drinking: Alcohol use that exceeds the recommended weekly or per-occasion amounts: More than 3 drinks per occasion (or >7 drinks per week) for women and more than 4 drinks per occasion (or >14 drinks per week) for men.

Hazardous drinking[b]**:** Alcohol use that places the patient at risk for medical and social complications.

Alcohol abuse[c]**:** Maladaptive pattern of alcohol use associated with recurrent social, occupational, psychological, or physical consequences

Alcohol dependence[c]**:** Maladaptive pattern of alcohol use associated with tolerance (increased drinking to achieve same effect), withdrawal, and recurrent social, occupational, psychological, or physical consequences

Binge drinking[d]**:** Pattern of drinking alcohol that brings blood alcohol concentration (BAC) to 0.08 gram percent or above. For the typical adult, this pattern corresponds to consuming 5 or more drinks (male), or 4 or more drinks (female), in about 2 hours.[10]

[a] Examples of standard drink equivalents are shown in Table 2.
[b] Hazardous drinking is not a *DSM-IV* diagnosis. In these guidelines, the term "hazardous drinking" includes use that is associated with an adverse consequence but that does not meet criteria for abuse or dependence.
[c] American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Health Disorders*, 4th ed, Text Revision. Washington, DC, American Psychiatric Association, 2000.
[d] There is no consensus on the definition of binge drinking. In 2004, the National Institute on Alcohol Abuse and Alcoholism (NIAAA) developed this definition for its use in alcohol research.

TABLE 2
STANDARD DRINK EQUIVALENTS

A US standard drink contains about 14 grams (0.6 fluid oz.) of pure alcohol. Approximate standard drink equivalents are listed below.

12 oz. beer or cooler	**8-9 oz.** malt liquor	**5 oz.** table wine	**3-4 oz.** fortified or dessert wine	**2-3 oz.** cordial, liqueur, or aperitif	**1.5 oz.** brandy (a single jigger)	**1.5 oz.** spirits (a single jigger of gin, vodka, whiskey, etc.)

From NIAAA: *Helping Patients Who Drink Too Much: A Clinician's Guide*. 2005 Edition. NIAAA, Rockville, MD. Available at: http://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/clinicians_guide.htm

III. IDENTIFYING ALCOHOL USE AND ABUSE IN HIV-INFECTED PATIENTS

Clinicians need to be particularly vigilant for all levels of alcohol use and abuse in HIV-infected patients because even intermittent use can complicate medical management of these patients. Clinicians are more likely to miss hazardous drinking in patients with undetectable viral loads, patients without hepatitis C, and patients with normal aspartate transaminase levels.[5]

A. Screening for Alcohol Use

RECOMMENDATIONS:
Clinicians should screen all HIV-infected patients for alcohol use at baseline and at least annually. Screening methods should assess quantity and frequency of alcohol use as well as per-occasion amounts to identify binge drinking. If the results are positive, a more detailed screening tool such as the full AUDIT or CAGE should be administered (see Appendix II)**.**

For at-risk or hazardous drinkers, clinicians should evaluate alcohol use more frequently in order to identify the escalation of present drinking levels or the occurrence of harmful consequences from drinking.

Screening tests should not be performed when patients are under the influence of alcohol.

Clinicians should stress the confidential nature of discussions regarding alcohol use to encourage patients to be open and honest.

The history and physical examination of HIV-infected patients should include questions regarding the use of alcohol. Before screening for alcohol, clinicians should educate the patient about the purpose of the screening questions as they relate to the patient's health status. Patients should be educated about drinks that contain alcohol, because some patients may not consider beverages such as cider or low-alcohol beer to be alcoholic.

Various screening tools have been developed and verified in non-HIV-infected populations to identify individuals with alcohol problems. Clinicians should use screening methods that assess quantity, frequency, and per-occasion amounts to identify binge drinking, such as one of the following:

- The NIAAA recommends the use of a single alcohol screening question (SASQ), which may also identify hazardous or at-risk drinking: *"How many times in the past year have you had* x *or more drinks in 1 day?"* where $x = 4$ for women and $x = 5$ for men, and one or more heavy drinking days is considered a positive screen.
- The three-question AUDIT-C can be used to identify hazardous drinking as well as alcohol abuse or dependence. Screening with just question #3 of the AUDIT-C, *"How often do you have ≥6 drinks on one occasion?"* may also identify at-risk drinkers who should undergo additional assessment.

Patients who have a positive screening result should be further evaluated with a more in-depth screening tool, such as the full AUDIT or CAGE. See Appendix II for specific screening instruments with their associated clinical utility and target populations. Results of screening will determine whether referrals or brief interventions are needed (see Section V: *Provider Assistance, Counseling, and Brief Interventions*).

For more detailed guidance on screening for alcohol and substance use in the HIV-infected population, see *Screening and Ongoing Assessment for Substance Use*. The National Institute on Alcohol Abuse and Alcoholism Clinician's Guide[10] provides more information on screening for alcohol in the general population.

B. Clinical Indicators of Alcohol Use

RECOMMENDATION:
Clinicians should consider alcohol misuse in the differential diagnosis of certain medical disorders that may be alcohol-induced, such as elevated liver enzymes, hypertension, seizures, gastrointestinal bleeding, cognitive impairment, and depression. The presence of clinical indicators should prompt a screen for alcohol use.

The presence of clinical indicators may facilitate identification of alcohol use problems; however, hazardous drinking or alcohol diagnoses should not be determined by biochemical markers alone.

Physical signs and laboratory markers that may be indicative of possible alcohol use or abuse include the following:

- Hypertension
- Resting tachycardia
- Puffy facies
- Hepatomegaly
- Elevated mean cell volume (MCV), if not taking zidovudine
- Elevated GGT
- AST>ALT
- Decreased serum B_{12}
- Bruises or healed fractures, especially of the ribs

Key Point:
Frequent falls or accidents, hypertension that is difficult to treat, and problems at home or at work may be indicative of alcohol-related problems.

IV. EFFECTS OF ALCOHOL USE IN HIV-INFECTED PATIENTS

Studies of the impact of alcohol use on HIV disease have not used a standard measure of alcohol intake, and it is unlikely that a "safe" level of alcohol consumption will be defined for HIV-infected individuals. At-risk drinking has been shown to negatively affect CD4 cell count in HIV-infected patients not receiving ARV therapy.[11] Among patients receiving ARV therapy, consumption of liquor versus beer or wine may be associated with poorer virologic and immunologic outcomes.[12]

A. Precautions for Use of ARV Therapy in Patients Who are Heavy Drinkers

Toxicities resulting from the overlapping effects of alcohol use, ARV therapy, and HIV infection are difficult to distinguish and likely to be affected by factors such as aging[13] and other comorbid diseases and medications.

Hepatotoxicity

Although clinical data are limited, dose reductions in patients with hepatic impairment due to alcohol intake or any cause are currently recommended for several ARV medications (see Appendix VII for dosing adjustments for specific ARV agents).[14,15] Clinicians should be vigilant for potential hepatotoxicity from ARV therapy in patients with significant hepatic dysfunction or cirrhosis.[16-18]

Pancreatitis

Providers should exercise caution when prescribing didanosine and stavudine in patients who drink heavily because there is an increased risk of fatal pancreatitis.

B. Alcohol and Adherence

RECOMMENDATION:

Clinicians should routinely ask about alcohol consumption when assessing adherence to HAART.

Alcohol use has been associated with decreased adherence to ARV therapy. Studies have varied in the measurement of alcohol consumption, and a dose-response relationship has not been defined; however, hazardous or risky alcohol use has been shown to negatively influence adherence by causing patients to miss doses or take medications off schedule.[1,19,20]In one study, hazardous and binge drinkers were more likely to have detectable viral loads,[5] which may be attributable to diminished adherence.

Alcohol intake is a modifiable risk factor for decreased adherence. Clinicians should routinely ask patients about alcohol consumption during adherence assessments. Screening for alcohol use can be accomplished with a few simple questions to identify patients who will benefit from further interventions. See Section III. A. *Screening for Alcohol Use*; Section V. *Provider Assistance, Counseling, and Brief Interventions*; and Section VI: *Referral for Treatment*.

C. Alcohol and Safer Sex Practices

RECOMMENDATION:

Clinicians should discuss behavioral risk-reduction measures on a routine and ongoing basis with patients who consume alcohol. These discussions should include use of barrier protection, how to speak with partners about safer sex, and the circumstances under which high-risk sexual behavior might occur.

Individuals under the influence of alcohol may be more likely to engage in behaviors that place them at risk for acquiring STIs and transmitting HIV due to alcohol-induced disinhibition, diminished risk perception, and the belief that alcohol enhances sexual arousal and performance.[21-29] Alcohol use at any level has been associated with increased sexual risk-taking among patients with HIV,[30] and binge drinking among HIV-infected women has been correlated with increased sexual risk behavior.[31] Clinicians should address safer-sex practices in the context of alcohol use, including a discussion about using barrier protection, how to speak with partners about safer sex, and the circumstances under which high-risk sexual behavior might occur.

D. Alcohol and Hepatitis C Virus

RECOMMENDATIONS:

Clinicians should educate HIV/HCV coinfected patients regarding the effects of alcohol on the course of HCV infection. Patients who have other underlying liver disease should be advised to abstain from alcohol.

Clinicians should advise patients to abstain from alcohol during HCV antiviral therapy. Patients with alcohol abuse or dependence should be encouraged to enroll in a rehabilitation program and establish abstinence prior to HCV antiviral treatment.

All patients with hepatitis C virus (HCV) infection who use alcohol should be educated about the effects of alcohol on the course of HCV and HIV infection. Patients with HCV and heavy alcohol intake have increased progression of hepatic fibrosis and increased risks of cirrhosis, hepatocellular carcinoma, and death.[32,33] Although some studies suggest that light to moderate consumption may also contribute to progression, this correlation has not been clearly shown.[34] Abstinence in heavy drinkers with HCV is associated with improved chemical markers as well as decreased HCV RNA levels.[35,36]

Data are limited regarding the effects of ongoing alcohol use during HCV antiviral treatment. An inverse correlation between rates of response to interferon treatment and levels of alcohol intake during therapy has been reported as has acute alcoholic hepatitis in several individuals consuming alcohol during interferon treatment.[37,38] Individuals with alcohol abuse or dependence should be encouraged to enroll in a rehabilitation program and establish abstinence prior to antiviral treatment. Patients who consume light or moderate amounts of alcohol should be advised to abstain from alcohol during antiviral therapy; a period of abstinence prior to treatment is not necessary.[39]

V. PROVIDER ASSISTANCE, COUNSELING, AND BRIEF INTERVENTIONS

RECOMMENDATIONS:

Clinicians should:

- **Conduct brief interventions with patients who are at-risk drinkers**
- **Use brief interventions to help motivate patients who meet diagnostic criteria for an alcohol use disorder (abuse and/or dependence) but decline referral for care**
- **Use nonjudgmental language when counseling patients who use alcohol**

When brief interventions are not successful in motivating change, the clinician should refer the patient for further assessment and treatment from an addiction specialist.

Brief interventions refer to education, guidance, and counseling offered by providers over the course of one or more short discussions. Brief interventions may foster patients' motivation to cut down or abstain from alcohol and to set goals and obtain further treatment, if necessary. Brief interventions have been shown to be effective in reducing alcohol use among at-risk drinkers in primary care.[40] Although not well-studied in the HIV-infected population, brief interventions may benefit HIV-infected individuals who are hazardous or at-risk drinkers. Concern about their own health status may be an encouraging stimulus for some patients to change their drinking behavior.

Clinicians should include the following intervention topics when discussing alcohol use with patients:

- Risks commonly associated with alcohol use
- Means to reduce physical, mental, and social problems attributable to alcohol use
- Benefits of abstaining from or reducing alcohol use
- Referrals to other services if needed

When brief interventions are not successful in motivating change, the clinician should refer the patient for further assessment and treatment from an addiction provider.

More information about assisting patients with alcohol problems by using brief interventions, including motivational interviewing, can be found in *Working With the Active User* and in the *National Institute on Alcohol Abuse and Alcoholism Clinician's Guide*.[10]

VI. Referral for Treatment

Recommendations:

Clinicians should refer patients:

- **With active alcohol use/abuse problems to treatment programs**
- **With alcohol abuse or dependence, who are not willing to cut down on their alcohol consumption, for further assessment and treatment by professional alcohol treatment services**
- **Who require more intensive management for alcohol withdrawal to inpatient treatment or to addiction specialists**

Key Point:
Clinicians should be familiar with the resources available in the community for alcohol treatment programs and services. Sources of care can be found on the Office of Alcoholism and Substance Abuse Services website at: www.oasas.state.ny.us

The short-term goals for treatment of alcohol disorders include reducing use, abstinence or movement toward abstinence, and attendance at self-help groups or counseling programs. Long-term goals include restoration of self-esteem, improved health and social consequences and long-term abstinence from alcohol use. Patients who are willing to change their drinking behaviors should be supported and referred to the type of alcohol recovery program that best meets their needs. Table 3 shows the various alcohol treatment referral options that are available for patients who abuse or are dependent on alcohol.

TABLE 3 REFERRAL OPTIONS FOR ALCOHOL ABUSE OR ALCOHOL DEPENDENCE TREATMENT	
Drinking Status	**Options**
Heavy drinker not willing to attend an inpatient or outpatient alcohol treatment center	Office-based counseling Group recovery programs, such as Alcoholics Anonymous and Rational Recovery
Heavy drinker not likely to respond to brief intervention	Further evaluation by professional alcohol treatment services
Current drinker with a history of sustained recovery	Reminder to return to previous support system

The clinician can take an active role in the referral process for patients who do not want to receive treatment as an inpatient by using a brief intervention strategy to introduce the idea of attending self-help groups or office-based counseling. More information about self-help or group recovery programs can be found at:

- Alcoholics Anonymous: www.alcoholics-anonymous.org
- Rational Recovery: www.rational.org

Having a clinician present while the patient makes the first call to locate meeting sites and times increases the likelihood that the patient will actually attend a meeting.

If the patient is not willing or ready to attend an alcohol treatment program, use of other resources, such as behavioral counseling and continued engagement in HIV and/or primary care, should be encouraged to help the patient reduce alcohol consumption.

Some patients may require more intensive management services for alcohol withdrawal treatment than can be provided by primary care clinicians. These patients should be referred to inpatient treatment or to addiction specialists. These treatment services offer a variety of pharmacologic and nonpharmacologic medical therapies with direct connections to rehabilitative or behavioral care.[41]

VII. TREATMENT FOR ALCOHOL WITHDRAWAL

RECOMMENDATIONS:

Clinicians should use nonpharmacologic therapy or benzodiazepines to manage patients with mild or moderate alcohol withdrawal symptoms.

Clinicians should hospitalize patients with a history of severe alcohol withdrawal symptoms for medical management.

Patients with mild to moderate symptoms of alcohol withdrawal, including mild tremors, mild anxiety, headache, diaphoresis, palpitations, anorexia, and gastrointestinal upset, can be safely and effectively managed as outpatients using nonpharmacologic therapy or benzodiazepines to

treat symptoms.[41,42] Daily contact with the treating clinician and a friend or family member to administer medications is optimal for these patients. Benzodiazepines should be used on a short-term basis and should be tapered as soon as possible. Patients should be hospitalized for intensive medical management of withdrawal when they have:

- Severe withdrawal symptoms
- History of withdrawal seizures or complications
- Delirium tremens or history of delirium tremens
- Depression with suicidal ideation
- Severe coexisting medical or psychiatric conditions
- An unstable home situation

Alcohol withdrawal in the inpatient setting is discussed in *Care of the Hospitalized HIV-Infected Substance User*.

VIII. Pharmacologic Management of Alcohol Abuse

Recommendations:

Clinicians should determine the benefit of pharmacotherapy with naltrexone, disulfiram, or acamprosate for the treatment of alcohol use disorders on a case-by-case basis. Pharmacotherapy should be used as an adjunct to behavioral therapy.

Clinicians should avoid naltrexone in patients with acute hepatitis or liver failure.

Naltrexone, disulfiram, and acamprosate have all been approved by the Food and Drug Administration (FDA) for adjunctive therapy to reduce alcohol consumption and relapse in patients with alcohol dependence (see Table 4). A strong psychosocial support system is optimal for patients receiving pharmacotherapy for treatment of alcohol disorders.

TABLE 4
ADJUNCTIVE PHARMACOLOGICAL AGENTS FOR THE TREATMENT OF ALCOHOL MISUSE

Agent	Dosage	Action	Contraindications	Comments
Disulfiram	250 mg qd (range: 125-500 mg)	Inhibits intermediate metabolism of alcohol; creates a toxic response to alcohol	Concomitant use of alcohol or alcohol-containing preparations	Obtain LFTs at baseline and 10-14 days after initiation Warn patients to avoid even the smallest amount of alcohol, such as in sauces, cough syrups, aftershave, etc. Ritonavir liquid formulation and tipranavir capsules contain alcohol
Naltrexone	50 mg qd	Blocks opioid receptors; decreases craving and pleasurable effects of alcohol	Patients currently using opioids or in acute opioid withdrawal; patients who use opioids should be opioid-free for 3-4 days before initiating naltrexone Patients with acute hepatitis or liver failure	Obtain LFTs at baseline and periodically during treatment Naltrexone also reduces relapse Adverse effects include nausea, headache, arthralgias, anxiety, and sedation
Acamprosate	666 mg (two 333 mg tablets) tid ***or*** for patients with moderate renal impairment (CrCl 30-50 mL/min), 333 mg (1 tablet) tid	Affects glutamate and GABA systems; helps maintain abstinence	Severe renal impairment (CrCl ≤30 mL/min)	Has been associated with a significant improvement in the abstinence rate and has been shown to help decrease the frequency and severity of relapse.

From NIAAA. *Helping Patients Who Drink Too Much: A Clinician's Guide*. 2005 Edition. NIAAA, Rockville, MD. Available at: http://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/clinicians_guide.htm

IX. FOLLOW-UP

A. At-Risk or Hazardous Drinkers

RECOMMENDATIONS:
Clinicians should:

- **Review goals, progress, and laboratory results (when applicable) with the patient during each follow-up appointment**
- **Assess the patient's motivation for change**
- **Reinforce safe drinking levels**
- **Actively support patient efforts to reduce alcohol use**

For at-risk or hazardous drinkers, clinicians should evaluate alcohol use more frequently in order to identify the escalation of present drinking levels or the occurrence of harmful consequences from drinking. Clinicians should assess the patient's motivation for change and provide brief interventions when appropriate. Safe drinking levels should be reinforced, and patient's efforts to cut down or abstain from drinking should be supported.

B. Patients Receiving Treatment for Alcohol Use

RECOMMENDATIONS:
Clinicians should:

- **Arrange follow-up appointments to monitor the patient's alcohol consumption and progress**
- **Provide supportive feedback to patients who are engaged in a recovery program**
- **Ask patients about the date of last use of alcohol at each monitoring visit to identify relapses**
- **Inform patients that relapse is common and part of the therapeutic process**
- **Assess the patient's continued motivation for further change, when applicable**

Follow-up visits to monitor the HIV-infected patient's alcohol use should be managed in the same manner as other chronic medical conditions, such as hypertension. Clinicians should be supportive of the patient's efforts to cut down or abstain from drinking. Successful change should be reinforced, and continued motivation for further change should be assessed as necessary.

Key Point:
Sustained behavior change is often accomplished gradually. Relapse should be recognized as part of the usual clinical course of alcohol abuse.

C. Relapse of Alcohol Use

RECOMMENDATIONS:
Clinicians should:

- **Anticipate relapses**
- **Adopt a nonjudgmental attitude toward the patient's resumption of alcohol use when/if it occurs**
- **Encourage participation in treatment**

Exacerbations are part of the usual clinical course of alcohol abuse; therefore, it is important to monitor for relapse once abstinence has occurred. Patients should be informed that relapse is a common problem and part of the therapeutic process. Relapse may occur for many reasons, such as depression, boredom, loneliness, discontinuing treatment programs, or anxiety. Patients with anxiety disorders are at greater risk for relapse to drinking within the first few months of alcohol treatment and may require additional support during this time.[43] Clinicians who continue to be supportive of the patient's recovery efforts, encourage their participation in treatment, and treat comorbid conditions, such as anxiety or depression, may help reduce the incidence or duration of relapse. See *Working With the Active User* for further guidance on relapse prevention.

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