

Substance abuse in older adults

An overview

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Substance abuse among older adults, including abuse of alcohol and prescription and over-the-counter drugs, has been called an invisible epidemic. Signs and symptoms of abuse in older adults vary from those presented in younger persons and this variation can complicate the diagnosis. Validated screening tools, such as CAGE and MAST-G, can aid diagnosis, but primary care physicians also need to be alert to suspicious medical conditions often associated with substance use disorders. Treatment goal is almost always abstinence; although efficacy remains uncertain, brief interventions by primary care physicians are recommended when patients are identified as at-risk. Pharmacotherapies may be used, but caution is advised due to associated side effects. Physicians may even be able to prevent the development of benzodiazepine dependence by prescribing alternative treatments for anxiety and depression in this population.

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The abuse of illicit and prescription drugs, including alcohol, benzodiazepines, and over-the-counter (OTC) medications, is a widely recognized problem in the general population. In the geriatric population, how-

ever, these conditions are largely underdiagnosed and undertreated, leading to what some have called an invisible epidemic. Substance use disorders are associated with significant medical complications in older adults. One-third of older alcoholic persons develop a problem with alcohol in late life, whereas the other two-thirds grow older with medical and social difficulties of early onset alcoholism.¹ With adults age ≥ 65 becoming the fastest growing segment of the population, this issue becomes a public health challenge as well: In 1989, hospital associated charges to Medicare where the primary diagnosis was alcohol-related totaled \$233,543,500.²

Despite the public health problems

that accompany substance use disorders in the older adult, literature on this topic is relatively sparse, especially regarding non-alcoholic drug dependence and abuse. A key factor complicating appropriate diagnosis and subsequent treatment is that older adults may present differently than the general population in the primary care setting, or may not present at all. The primary caregiver may be the only individual aware there is any problem. This article reviews screening and diagnosis issues and treatment recommendations that will help the primary care physician identify and appropriately treat geriatric patients with substance use disorders. In particular, this article focuses on alcohol and its effect on the geriatric population. Tables include a review of prevalence data, DSM-IV criteria and a recommended brief intervention.

Prevalence

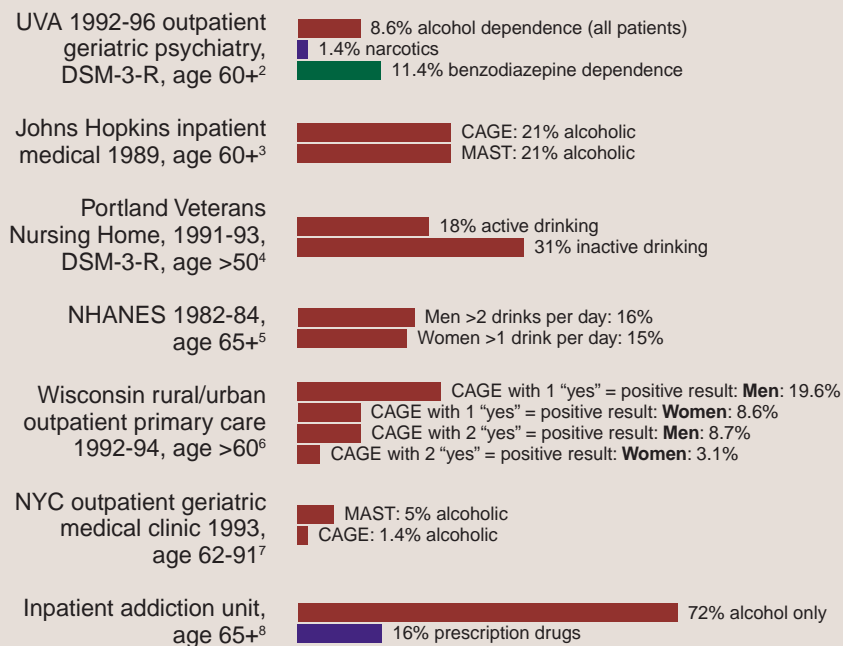
There is a relative paucity of studies that have assessed the prevalence of substance abuse in older adults. In the limited studies available, prevalence varies according to the population and to what substances are studied (table 1).³⁻⁹ One recent study in a geriatric outpatient clinic showed overall prevalence for any substance use disorder to be 20%; prevalence of alcohol depen-

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Table 1 Prevalence of substance abuse among older adults



*MAST: Michigan Alcohol Screening Test

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dence was 8.6%, and prescription narcotic dependence was 1.4%. These findings suggest that substance use disorders in the geriatric population exist to a greater extent than previously reported.³ In an inpatient medical setting the prevalence of alcoholism is even greater than in the outpatient population. A 1989 study of 417 inpatients at Johns Hopkins Hospital reported prevalence of alcoholism in those aged 60 and older to be 21%. The authors also found that house officers were less likely to identify older alcohol abusers than younger alcohol abusers. In particular, older alcohol abusers were less likely to be diagnosed if they were white, female, or had completed high school. Treatment was recommended less frequently even when older patients were identified.⁴

Prescription drug abuse Although most of the literature on geriatric substance abuse focuses on alcohol abuse, the abuse of prescription drugs among this group also represents a significant problem. Of 1,668 outpatients, 9.6% were diagnosed with alcohol abuse, and 5%

had been referred for prescription drug abuse. Diazepam, codeine, meprobamate, and flurazepam were the most commonly abused agents. Interestingly, 92% of identified patients were found to have abuse of duration greater than 5 years. Risk factors for prescription drug abuse include female gender, social isolation, chronic physical illness, polypharmacy, and a previous history of psychiatric hospitalizations or alcohol abuse.¹⁰

Another recent study of 565 geriatric veteran inpatients found that 4% were diagnosed with nonalcoholic substance disorders, including 3% with prescription drug use disorders and 1% with illegal drug use disorders, a larger than expected number.¹¹ Benzodiazepines were the most commonly abused prescription drugs, signaling caution in the primary care setting, as these drugs are frequently prescribed for common geriatric conditions such as insomnia, anxiety, and chronic pain.¹² A study of 100 older adults dependent on prescription drugs who were admitted to an inpatient addiction program found that

69% had prior psychiatric treatment, of whom 50% had been hospitalized. Female gender was a risk factor, and most frequent drug dependence involved sedatives or hypnotics.⁹ It has been suggested that the stereotype—older, black, less-educated man—may interfere with the diagnosis of alcoholism.⁴ In fact, women are more likely than men to start drinking heavily later in life.¹³ Geriatric patients who have physically painful illnesses (eg, arthritis, osteoporosis, neuropathies, cancer, and gout) or psychiatric disorders (depression, anxiety) are at higher risk of substance abuse.¹⁴

Diagnosis

Table 2 lists the DSM-IV criteria for substance dependence and substance abuse. It is important to remember that tolerance and dependence are poor indicators of dependence in older adults because they do not develop dramatically.¹⁵ Furthermore, the stated criteria for dependence and abuse may not necessarily apply to older adults for several reasons. Older adults need less alcohol to become inebriated. Hence the healthcare provider may not realize the potentially deleterious effects of relatively “small amounts” of alcohol consumption. The older adult is more likely to be retired and not engage in as many activities as the younger adult. As a consequence, substance use may not necessarily interfere with social or occupational functioning. These biological and lifestyle issues can easily lead to underdiagnosis in the geriatric population. Appropriate screening is key to recognizing alcohol and substance disorders in the older adult.

Table 3 lists some associated signs and symptoms of drug dependency, alcohol dependency or both and table 4 lists medical conditions that should raise suspicions of substance use disorders. It must be stressed that some of the noted behaviors are difficult to detect during a typical office visit: Many patients will be sensitive to being identified as imprudent in their use of substances so patients must be questioned

in a confidential setting, in a non-judgmental manner.¹⁶ It is also helpful to question family, friends, and if one exists, a primary caregiver.

Several different screening methods currently are used in the general population. Because of its ease of administration, the CAGE is arguably the screening instrument of choice with older adults.¹⁷ The CAGE questions are (bold letters represent the acronym):

- Have you ever felt you should **C**ut down on your drinking?
- Have people **A**nnoyed you by criticizing your drinking?
- Have you ever felt **G**uilty about your drinking?
- Have you **E**ver had a drink first thing in the morning to steady your nerves or to get rid of a hangover?

The CAGE can effectively discriminate older patients with a history of drinking problems from those without such a history. Typically, a score of two or more “yes” answers constitutes a positive response to the CAGE questionnaire. Nevertheless, adjustment of the cutoff score should be considered in the context of the prevalence of drinking problems in the tested population. It may be appropriate to consider a score of one or more a positive response in a population with a low prevalence of drinking problems.¹⁷ One problem with the CAGE is that it does not differentiate between active and inactive drinking. Additional questions should investigate quantity, frequency, and binges; additional information should be sought on falls, accidents, family problems, evidence of social isolation, and alcohol-related medical problems.¹⁸ Additional questions to consider include:

- Do you drink everyday, or almost everyday? If not, how often do you drink?
- When you drink, what do you drink? How many glasses do you drink?
- Do you ever drink to the point of becoming drunk or having blackouts?
- Ask the patient or family members about frequent falls, accidents, or alcohol-related illness.

Table 2 DSM-IV criteria for substance dependence and abuse

For substance dependence

1. Tolerance, as defined by either of the following:

- A need for markedly increased amounts of the substance to achieve desired effect
- Markedly diminished effect with continued use of the same amount of substance

2. Withdrawal, as manifested by either of the following:

- The characteristic withdrawal syndrome of the substance
- The same (or closely related) substance is taken to relieve or avoid withdrawal symptoms

3. The substance is taken in larger amounts over a longer period of time than intended

4. There is persistent desire to cut down or control substance abuse

5. A great deal of time is spent in activities necessary to obtain or use the substance or recover from its effects

6. Important social, occupational or recreational activities are given up or reduced

7. The substance is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.

For substance abuse

1. Recurrent substance abuse resulting in a failure to fulfill major role obligations at work, school, or home.

2. Recurrent substance use in situations in which it is physically hazardous (eg, driving a car or operating a machine when impaired by substance use)

3. Recurrent substance related legal problems (eg, arrests for substance use, related disorderly conduct)

4. Continued substance abuse despite having a persistent or recurrent social or interpersonal problem caused or exacerbated by the effects of the substance (eg, arguments with spouse about consequences of intoxication, physical fights)

Source: American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, 4th edition. Washington, DC: American Psychiatric Association, 2000. Reprinted with permission.

Some authors argue that the Michigan Alcoholism Screening Test (MAST) is a better screening tool than the CAGE in the older population.^{19,20} The 24-item MAST-G (a version with geriatric-specific consequences) has been found to be very sensitive (93.9%) and specific (78.1%) in identifying alcoholism among older adults, and can be used as an effective screening tool. Both the MAST and the CAGE are sensitive to capturing alcohol use disorders in older adults, but the MAST-G length may hinder its use.¹³

Substance use is known to increase the risk of emergency room visits. A retrospective study of 32,000 trauma patients age 65 and older demonstrated that 49.7% of tested patients (only 5% tested) had ingested alcohol, 71.8% of whom were considered intoxicated (blood alcohol concentration > 80 mg/dL). Besides alcohol, benzodiazepines and opiates were the most frequently detected drugs. Falls and motor vehicle accidents were found to be the most frequent mech-

Table 3 Behavioral symptoms associated with substance use disorders

- Mood swings: depression, irritability
- Inability to cope with loss of occupation
- Loss of physical mobility
- Progressive family and social isolation
- Deterioration in hygiene
- Insomnia or hypersomnia
- Unexplained accidents, falls, trauma
- Decline in cognitive functioning
- Chronic pain

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anism of substance-use-related injury leading to ER visits. These results suggest that physicians should suspect possible alcohol involvement when older patients are involved in trauma.²¹

Psychiatric and medical problems constitute the major consequences of substance abuse or dependence.¹¹ Geriatric patients with alcohol problems are more likely to present with physical symptoms and to be admitted to medical or surgical wards than younger patients with alcohol abuse—50% of admissions in the older group are related to falls with or without head injury. Strikingly, as few as 15% of alcohol disorder patients are referred to alcohol rehabilitation services.²²

Complications/comorbidity

Depending on the individual's genetic predisposition, age, and the amount consumed, alcohol can affect every organ system in the body. Alcohol is known to be associated with coronary artery disease, hypertension, diabetes, and overall mortality. Cardiovascular diseases include cerebrovascular hemorrhage, arrhythmias, cardiomyopathy, and sudden death.²³ Cancers of the head, neck, and esophagus are associ-

ated with chronic alcohol abuse, and liver cancers occur at increased rates among individuals with cirrhosis. Nutritional deficiencies of folate and thiamine occur when food intake is reduced and calories are primarily derived from alcohol. Macrocytosis should prompt a search for vitamin deficiencies, but this can be caused by alcohol abuse even without a nutritional deficiency.¹

Either current or a lifetime history of substance use can lead to significant mental health problems in older adults.²⁴ Alcohol may cause or contribute to dementia: One hypothesis suggests that even in small amounts, alcohol may speed the course of cognitive decline or exacerbate or lead to personality changes or behavioral disturbances in patients with existing dementia. Sleep disorders are another group of comorbid disorders associated with alcohol use. The relationship between depression and alcohol disorders has been studied extensively. Findings across a range of studies vary, but most show that alcoholism in depressed patients is linked to relapse, increased alcohol intake, and increased risk of suicide.²³ Among outpatients, alcohol abuse may interfere with the treatment of depression or add to the disability of depression.²⁴

Overall treatment goals

Abstinence is desirable because even in small amounts alcohol use can exacerbate existing medical and psychiatric conditions and can maintain a low level of addiction. It is important to maintain or improve patients' social support systems and to help patients find alternatives to replace the influence of drinking in their lives. The primary care physician can play an essential role by recognizing the early warning signs and initiating early intervention. The involvement of family and friends is helpful, if possible. These measures, combined with pharmacotherapy and psychotherapy, when appropriate, can help assure the most positive outcomes.²⁵ Sometimes, involving a social

worker or service can be helpful in maintaining socialization. Arranging home visits if the patient lives alone can help. Referral to age appropriate Alcoholics Anonymous groups (arranging transportation if needed), removal of unwanted pills or bottles from the home, establishing a network of family or friends, setting up weekly or monthly meetings, activities, and scheduled visits, can also help. The Internet can also be used as a source of communication and socialization by providing a link to the recovering community. In short, the patient should be encouraged to socialize with a healthy peer group.¹⁶

When a clinician suspects harmful or dangerous consumption, a brief intervention including advice to reduce or abstain from alcohol abuse is recommended with follow-up visits to review goals of treatment.^{12,26} (See Web exclusive, Components of an older-adult specific brief intervention for at-risk drinkers, at www.geri.com)

Table 4 Medical conditions associated with substance use disorders

- Elevated liver function tests, hepatitis, cirrhosis
- Pancreatitis
- Gastritis
- Arrhythmia
- Lower extremity neuropathy resulting in unsteady gait
- Alcoholic bowel disease
- Immunodeficiency
- Increased risk for cancer
- Megaloblastic anemia
- Hypomagnesemia
- Hypophosphatemia, hypocalcemia
- Thrombocytopenia
- New seizure activity

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Pharmacotherapy

Disulfiram competitively inhibits the enzyme aldehyde dehydrogenase, causing a toxic reaction if the patient consumes as little as a single drink (due to the accumulation of acetaldehyde accumulation in the blood). Those who drink while taking disulfiram (250 mg/d) commonly experience flushing, dizziness, feelings of heat in the upper limbs, the face, the sclera, and chest. Other side effects include nausea, hypotension, palpitations, shortness of breath, and numbness. Generally the most serious side effect is severe hypotension.²⁷ Disulfiram may not be the treatment of choice in older adults because of its associated confusion, psychosis, and memory impairment.

Naltrexone decreases alcohol craving, probably by blocking the endogenous opioids; however, little information is available on the use of this drug in older adults. One recent double-blind, placebo-controlled efficacy study examined the tolerability of naltrexone in 36 patients over age 50. Naltrexone was well tolerated, with no associated risk in elevation in liver function tests. Dosing was maintained at three times per week: 100 mg Monday and Wednesday, and 150 mg on Fridays.²⁸

Acute treatment

Treatment of acute withdrawal is different in older adults than in the younger population. Due to enhanced sensitivity, benzodiazepine doses are generally one-third to one-half of that required for middle-aged adults. Although benzodiazepines are currently the treatment of choice, short- to intermediate-acting drugs are preferable due to accumulation and prolonged effects of long-acting benzodiazepines. Miller et al recommend chlor-diazepoxide because of its intermediate half-life, which is thought to produce an easier withdrawal without cumulative sedation. They also suggest that the patient receive daily doses of thiamine for 3 days, (IM, if debilitated) with continued oral adminis-

tration thereafter. Thiamine should be administered before IV dextrose to avoid Wernicke's encephalopathy, resulting from a depletion of thiamine. Fluid and electrolyte imbalance must also be monitored carefully. Because tolerance to alcohol and drugs is reduced in this population, withdrawal may take weeks to months as compared with days or weeks in younger patients. Hospitalization is recommended in many cases because of the associated medical risks of withdrawal in the geriatric individual.¹⁵

At times, inpatient psychiatric admission is indicated. A recent article examined the 6-month outcomes of elder-specific inpatient alcoholism treatment programs. General health improved between pretreatment and 6-month follow-up for all groups. A large percentage of older adults who receive elder-specific treatment attain positive outcome across a large range of measures. When compared with traditional programs for younger patients, the elder specific program is less confrontational, relies on cognitive behavioral, interpersonal, and supportive approaches, and emphasizes developing a treatment alliance with staff.²⁹

The model based on Alcoholics Anonymous is also effective in the older adult.

Goals of treatment, which advocates abstinence, are to educate, confront the denial, and provide alternatives to drinking behaviors. Techniques used are individual and group therapies directed at addiction.²⁷

Benzodiazepines

Physicians may be able to prevent the development of benzodiazepine dependence by prescribing alternative treatments for anxiety and depression. Comorbid psychiatric problems, such as cognitive decline and anxiety are common in older patients with depression. In light of this, it would be desirable to treat these patients with a regimen that is effective at treating both anxiety and depression. One


group examined the role of cognitive behavioral therapy (CBT) compared with supportive counseling in treating anxiety disorders in older patients. All patients in the study were prescribed psychotropic medication, including benzodiazepines. Both CBT and supportive counseling were found to be effective treatment for anxiety problems in older adults. At 12-month follow-up, CBT was most effective for the treatment of anxiety and depression.³⁰ Although the effects of these therapies were not directly looked at in relation to substance abuse, it is likely that these treatments may have a positive influence on older patients who abuse drugs secondary to problems with anxiety.

In older adults withdrawal may take weeks or months as compared with days or weeks in younger adults

Selective serotonin reuptake inhibitors (SSRIs) are another viable alternative for the treatment of anxiety. SSRIs are superior to tricyclic antidepressants in tolerability and drug interaction profiles in older patients, and are becoming the preferred first line treatment of depression in this population.³¹

Conclusion

As the population ages, substance use disorders in the older patient will become increasingly important. Recognizing the problem is the first step in treatment. The family physician often represents the first line of detection of substance abuse, which frequently leads to serious medical and psychiatric illness. Knowing what to look for and which questions to ask regarding

alcohol and drug abuse plays an integral role in the comprehensive care of the geriatric patient. In some cases, just a heightened awareness of the potential for prescription drug abuse can prevent a problem from developing in the first place. Once a problem is identified, an appropriate treatment must be selected. Although referral to a specialist may be necessary to treat many of these patients, the family physician plays an important role in the prevention, identification, and treatment of alcohol and drug abuse in the geriatric population. 



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