

Geriatric Alcohol Use Disorder: A Review for Primary Care Physicians

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Abstract

Alcohol use disorder in the geriatric population is a growing public health problem that is likely to continue to increase as the baby boomer generation ages. Primary care providers play a critical role in the recognition and management of these disorders. This concise review will focus on the prevalence, risk factors, screening, and clinical management of geriatric alcohol use disorder from a primary care perspective.

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Alcohol use disorder (AUD) is a growing public health problem in the elderly population that causes substantial morbidity and mortality and escalation of health care costs. Prevalence rates vary depending on the study methods and alcohol use definitions used. Community-based studies report 12-month prevalence rates as low as 0.24% for alcohol dependence in the elderly in a national sample¹; 6% heavy drinking (>2 drinks per day) in community-dwelling individuals 60 years and older in a New York cohort²; and 15.4% of a large cross-sectional

sample of community-dwelling elderly individuals (≥65 years) endorsed symptoms of alcohol abuse and dependence.³ Rates in the medical environment are much higher: 10% to 15% of all elderly primary care patients met the criteria for problem drinking (defined as drinking at a level that has resulted in adverse medical, psychological, or social consequences or drinking that substantially increases the likelihood of such problems) in 1 study,⁴ and up to 30% of all older patients hospitalized in general medicine and up to 50% of older patients hospitalized in psychiatric units have AUD.⁵ Hospital



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claims data from the Health Care Financing Administration found that the rate of alcohol-related hospitalization in elderly individuals was similar to that of hospitalization for myocardial infarction, with 38% having an alcohol-related diagnosis for the primary diagnosis.⁶ Perhaps the most striking prevalence data estimates from national surveys of noninstitutionalized adults predict that the number of Americans aged 50 years and older with a substance use disorder will double between 2006 and 2020 (from 2.8 million to 5.7 million people).⁷

Despite this growing problem, little attention has been given to AUD in the elderly. Between 2000 and 2010, less than 1% of articles published in major gerontology and substance abuse journals addressed this issue.⁸ Often, AUD in the elderly is undiagnosed, underreported, or overlooked and, therefore, is not properly managed. Impairments in social, occupational, or recreational activities due to drinking can go undetected if an older individual lives alone, is socially isolated, has given up driving, is retired with no risk of losing a job or career, and has no close family members to be burdened with family conflicts. Moreover, AUD can mimic other common diagnoses in older adults, including depression and dementia. With many preexisting medical problems and polypharmacy, elderly people are especially at risk for further medical complications from excessive drinking. Older adults generally have a lower tolerance for alcohol and are more likely to experience delirium during periods of withdrawal.⁹ Finally, as is the case with any addiction, but especially in the elderly population, stigma and shame can play a major role in the detection of AUD. Many older individuals believe that alcoholism is a moral weakness, and denial is a common response to inquiry about an AUD.¹⁰ Not only is this a concern for patients, but it can be a barrier to provider inquiry into the older adult's alcohol use. Providers may carry predisposed stereotypes about what a person with an AUD should look like. Providers may also fear offending the patient and may opt not to ask about alcohol use.

It is, therefore, essential to recognize and properly manage the elderly patient with problematic alcohol use to prevent alcohol-related morbidity and improve quality of life. In this article, we use the *Diagnostic and Statistical*

Manual of Mental Disorders (5th Edition) (DSM-5)¹¹ term Alcohol Use Disorder to refer to alcohol abuse or dependence as previously defined by DSM-IV-TR, except when articles cited use older terminology. We present an overview of AUD in the elderly population and outline practical guidelines for nonpsychiatric clinicians in evaluating and managing AUD in this population.

ETIOLOGY AND RISK FACTORS

Alcohol use disorder can be a lifelong illness with early onset and recurrences or relapses into old age. However, AUD can also occur for the first time late in life in the setting of major life changes. The specific cause of late life-onset AUD is unclear, although known biological and psychological risk factors and major life events or psychosocial stressors later in life may play a role. There is strong evidence for genetic factors associated with AUD. Children of alcoholic parents have demonstrated a genetic predisposition to alcoholism, regardless of the environment.¹² Twin studies show risk of alcohol dependence to be genetically determined in 50% to 60% for men and women.¹³ The "Asian gene," which is a deficiency in aldehyde dehydrogenase enzymes, causes flushing and vasomotor symptoms after alcohol ingestion and leads to alcohol aversion, possibly explaining lower rates of AUD in Asians.¹⁴

Despite strong evidence for genetic determination for AUD, genes alone do not account for this risk, as psychological, social, and environmental factors also play a role. Some studies have used large national surveys to extrapolate possible risk factors for the older population. In a study of 8205 adults older than 65 years, Lin et al¹⁵ found that being 65 to 74 years old (compared with ≥ 75 years), white (compared with Asian/Pacific Islander), divorced/widowed, and male were associated with increased risks of lifetime AUD, whereas increased odds of having AUD in the past year were associated with being male and aged 65 to 74 years. Financial strain also places older adults, especially older women, at higher risk for heavy drinking.¹⁶

What is different about alcohol use in older adults compared with younger adults? Aging-related biological and physiologic changes affect alcohol absorption, metabolism, and elimination. Decline in hepatic and renal function,

reduced metabolic capacity, loss of lean body mass, brain vulnerability, and greater risk of toxicity and drug-drug interactions are all related to excess alcohol in the circulation. Older adults are more sensitive to the effects of alcohol and have higher blood levels than younger individuals with the same amount of alcohol consumed. This may result in problems of AUD at lower consumption levels.¹⁷ Furthermore, cognitive impairment in older adults can impair their ability to monitor their alcohol consumption.¹⁰

Moreover, alcohol use can have significant effects on many chronic diseases seen in older adults. For any older individual with a diagnosis of congestive heart failure or diabetes, abstinence is recommended.¹⁰ Chronic AUD increases an individual's risk of myocardial infarction due to a collective effect of exacerbating hypertension and hyperlipidemia and masking angina pectoris. It has also been shown to increase one's risk of cardiomyopathy. In patients with chronic obstructive pulmonary disease, alcohol can cause mental confusion owing to its depressive effect on respiratory drive. Moreover, rates of dementia are higher in older individuals with AUD. Finally, along with cerebellar effects that increase ataxia and risk of falls, individuals with AUD have a higher rate of osteomalacia due to alcohol's inhibitory effect on the hydroxylation of vitamin D.¹⁰

AUD AND COGNITIVE IMPAIRMENT

Heavy alcohol consumption has negative effects on cognitive function, which is a particular concern in the elderly. Wernicke encephalopathy is an acute neurologic condition from thiamine deficiency characterized by a classic triad of ophthalmoplegia, gait ataxia, and confusion. However, patients rarely present with this classic triad, and the absence of 1 or more of the classic symptoms leads to underdiagnosis, missed treatment with thiamine to reverse the condition, and subsequent challenges in long-term management of persistent confusion.¹⁸ Korsakoff syndrome (also Korsakoff psychosis) is characterized by severe memory impairment, with both retrograde and anterograde amnesia, and confabulation (ie, making up information when a person cannot remember but without intention to deceive). It is a chronic condition that develops in approximately 80% to 90%

of alcoholic individuals with Wernicke encephalopathy, from which most patients do not recover and become progressively cognitively impaired.¹⁹ When Wernicke encephalopathy and Korsakoff syndrome occur simultaneously, they are referred to as Wernicke-Korsakoff syndrome. Ocular, ataxic, and cognitive complications are associated with higher risk of institutionalization and mortality.¹⁹ Although often associated with long-term alcohol use, it is important to remember that Wernicke-Korsakoff syndrome can also develop in any setting of thiamine deficiency unrelated to alcohol, such as malnutrition (eg, critical illness, anorexia nervosa, and colon cancer), malabsorption (eg, stomach cancer, gastrectomy, and bariatric surgery), or genetic cause.¹⁹

Alcohol-related dementia syndrome, which is a clinical diagnosis based on the presence of dementia deemed by a clinician to be directly due to alcohol use, includes Wernicke-Korsakoff syndrome secondary to alcohol use. Aside from direct neurotoxic effects of ethyl alcohol and thiamine deficiency, other etiologic mechanisms for alcohol-related dementia include vascular injury, immune-related injury, trauma, and metabolic dysfunction.²⁰ The term *dementia* is still commonly used, but the *DSM-IV* dementia diagnoses are now included under a new entity called Major Neurocognitive Disorder under *DSM-5*, defined by substantial cognitive decline from baseline, decline in neurocognitive performance, and cognitive deficits that interfere with independence.¹¹ Thus, alcohol-related dementia (formerly *DSM-IV* Alcohol-Induced Persisting Amnesic Disorder and Alcohol-Induced Persisting Dementia) is now called Alcohol-Induced Major or Mild Neurocognitive Disorder (nonamnesic-confabulatory or amnesic-confabulatory type).¹¹

As with any neurodegenerative dementia, there is no treatment, and the condition is progressive and irreversible. There are no known alcohol programs or treatments designed for alcoholic individuals with substantial cognitive impairment. Management strategies for primary care physicians should include providing education and support to family and caregivers regarding removal of access to alcohol, addressing nutritional deficiencies, obtaining psychiatric evaluations for behavioral or psychological symptoms, and optimizing functional status. For patients with advanced dementia, higher

levels of supervision should be discussed with families, and in some cases of severe impairment in decisional capacity, guardianship or conservatorship may need to be pursued.

SCREENING FOR AUD IN THE PRIMARY CARE SETTING

The 2 previously distinct disorders alcohol abuse and alcohol dependence in *DSM-IV*²¹ are now integrated into the single *DSM-5* item AUD. A diagnosis of AUD can be made if any 2 of the 11 criteria (larger amount of alcohol use over a longer period than intended; unable to cut down or control alcohol use; significant amount of time spent to obtain alcohol; craving; impairment in work, school, or home activities; continued use despite problems; important activities are given up; use in physically hazardous situations; continued use despite alcohol-related physical or psychological problems; tolerance; and withdrawal) are met during the same 12-month period.¹¹ Based on the number of criteria met, AUD is subclassified into mild (2-3 symptoms), moderate (4-5 symptoms), and severe (≥ 6 symptoms).

Owing to the prevalence of alcohol misuse in older adults, screening in the primary care setting is an essential component of recognition and treatment. Several studies have shown that physicians are less likely to ask older adults about their drinking than younger adults. All geriatric patients should be screened for AUD during routine visits and as a component of the diagnostic work-up for many common presentations in the primary care setting, including worsening of a chronic disease, change in pharmacologic effect of long-term therapies, onset of gastrointestinal disorders, history of bariatric surgery, frequent falls, heart failure, aspiration pneumonia, dehydration and malnutrition, and onset or worsening of cognitive or psychiatric disorders.²²

Many self-report questionnaires have been designed for use in the primary care setting, including the Short Michigan Alcoholism Screening Test—Geriatric Version; the Alcohol Use Disorders Identification Test (AUDIT), which has both long and short forms; and CAGE, which comprises 4 items that ask about cutting down, annoyance at criticism, guilty feelings, and the use of eye-openers (Table).⁵ In a systematic review of 9 studies that included 6353 patients, Berks and McCormick²⁷ found

that the AUDIT and the short-form AUDIT-C were useful tools for screening for harmful and hazardous drinking in patients older than 60 years and that CAGE was valuable when screening for dependence. Finally, Bridevaux et al²⁸ correlated screening tests with survival in 16,958 male patients aged 65 years and older in 7 Veterans Affairs clinics and found that individuals who scored negative for problem drinking had better survival than those who scored positive, emphasizing the importance of screening in the primary care setting. For a busy primary care clinician who is under time constraints and has time to only ask a single question, a positive response to the question “On any single occasion during the past 3 months, have you had more than 5 drinks containing alcohol?” has been reported to accurately identify alcohol abuse or dependence as defined in the *DSM-IV*.²⁶

A population that is particularly important to screen regularly is older women. Although most women do not change their alcohol consumption significantly after age 50 years, those who do tend to increase their alcohol use substantially, emphasizing the need for regular screening in this population.²⁹ Moreover, individuals who have had bariatric surgery, particularly roux-en-y, are at increased risk for developing AUD in the years after the operation.³⁰

Screening will help identify patients who require further diagnostic investigation for possible AUD, such as obtaining collateral information regarding alcohol use, using more detailed questionnaires, checking relevant laboratory test results, or obtaining a chemical dependency consultation. A clinical suggestion of AUD without previous screening should be considered a positive screen, and clinicians should proceed directly to the aforementioned diagnostic evaluation.

CLINICAL MANAGEMENT

The most important step in managing AUD in geriatric patients is to identify it. Stabilizing the patient medically and psychiatrically is essential by actively managing medical comorbidities, ensuring a safe detoxification and withdrawal process, and addressing severe mood, anxiety, psychotic, or cognitive issues. Only when stable from the medical and psychiatric perspectives can AUD be fully addressed with a biopsychosocial approach.

TABLE. Alcohol Use Screening Tools

Screening tool	Questions	Scoring
Short Michigan Alcoholism Screening Test—Geriatric Version ²³	<ol style="list-style-type: none"> 1. When talking with others, do you ever underestimate how much you drink? 2. After a few drinks, have you sometimes not eaten or been able to skip a meal because you didn't feel hungry? 3. Does having a few drinks help decrease your shakiness or tremors? 4. Does alcohol sometimes make it hard for you to remember parts of the day or night? 5. Do you usually take a drink to calm your nerves? 6. Do you drink to take your mind off your problems? 7. Have you ever increased your drinking after experiencing a loss in your life? 8. Has a doctor or nurse ever said they were worried or concerned about your drinking? 9. Have you ever made rules to manage your drinking? 10. When you feel lonely, does having a drink help? 	2 "yes" responses indicate further investigation for possible AUD
Alcohol Use Disorders Identification Test short form ²⁴	<ol style="list-style-type: none"> 1. How often do you have a drink containing alcohol? 0 = never 1 = monthly or less 2 = 2-4 times a month 3 = 2-3 times a week 4 = 4 or more times a week 2. How many standard drinks containing alcohol do you have on a typical day when drinking? 0 = 1 or 2 1 = 3 or 4 2 = 5 or 6 3 = 7 to 9 4 = 10 or more 3. How often do you have ≥ 6 drinks on 1 occasion? 0 = never 1 = less than monthly 2 = monthly 3 = weekly 4 = daily or almost daily 	≥ 4 (men) or ≥ 3 (women) indicates harmful or hazardous drinking or active AUD
CAGE ²⁵	<ol style="list-style-type: none"> 1. Have you ever felt you needed to Cut down on your drinking? 2. Have people Annoyed you by criticizing your drinking? 3. Have you ever felt Guilty about drinking? 4. Have you ever felt you needed a drink first thing in the morning (Eye-opener) to steady your nerves or to get rid of a hangover? 	2 "yes" responses indicate further investigation for possible AUD
Single screening question ²⁶	On any single occasion during the past 3 mo, have you had >5 drinks containing alcohol?	A positive response identifies current or at-risk AUD

AUD = alcohol use disorder.

Medical Stabilization

Ruling out other medical causes that may coexist with or mimic alcohol withdrawal symptoms is essential. Such conditions include thyrotoxicosis, encephalitis, meningitis, central nervous system hemorrhage, hepatic encephalopathy, hypoglycemia, anticholinergic drug poisoning, and amphetamine, cocaine, benzodiazepine, or

opioid withdrawal.³¹ Thiamine, folate, and multivitamins are typically concomitantly administered intravenously to people in withdrawal. Adequate hydration is necessary, although care should be exercised with intravenous hydration if using glucose dextrose solutions, which must be given concurrently with thiamine to avoid precipitating Wernicke

encephalopathy caused by further thiamine depletion by glucose.

Detoxification

Alcohol withdrawal symptoms vary in severity, may occur up to 1 week after the last drink, and are more likely to occur in those who have had withdrawal symptoms in the past. Older persons should be monitored closely for delirium or seizures during withdrawal, and ideally this should be done in the hospital setting given their vulnerability to medical complications in the context of other medical comorbidities. The revised Clinical Institute Withdrawal Assessment for Alcohol scale can provide an objective measure of alcohol withdrawal,³² although its use may be inadequate in medically complicated patients with delirium or acute conditions that lead to sympathetic stimulation and can mimic or intensify alcohol withdrawal syndrome, such as intense pain, shock, or sepsis.³³ Scores guide the administration of benzodiazepines, the mainstay of treatment to manage the withdrawal symptoms and reduce the incidence of delirium and seizures. Shorter-acting benzodiazepines, such as lorazepam and oxazepam, are more effectively metabolized owing to simpler hepatic degradation and are safer to use in patients who are elderly or who have liver disease. Lorazepam is more commonly used given its predictable absorption if used intramuscularly. If benzodiazepines are not able to control the symptoms alone and severe agitation continues, haloperidol may be used with caution. In addition, β -blockers have been shown to be effective in controlling tachycardia and hypertension, but they must be monitored owing to the risk of hypotension in older adults.⁵

Chemical Dependency Treatment

There are several myths that exist in the medical community regarding the treatment of AUD in older adults.³⁴ Perhaps the most detrimental of these is the idea that older adults are not as responsive to treatment as younger adults. A 30-year review of treatment of AUD in older adults reported that treatment of older adults yields rates of abstinence comparable with those in general populations.³⁵ However, this success has not been reflected in the number of referrals to treatment, and relatively few admissions are made by health care professionals.

As the size of the geriatric population continues to grow and more emphasis is placed on recognizing AUD in the primary care setting, the number of older adults seeking treatment is expected to increase substantially. This pattern is already being seen as the proportion of older adults seeking treatment for the first time is growing at a faster rate than that of younger adults.³⁶

There are many options to consider for the treatment of AUD in the primary care setting. Levels of care include inpatient, residential, and outpatient. The goal should be prompt enrollment in a treatment program after detoxification, although the goal of treatment may range from simply reducing alcohol use to complete sobriety. A combination of cognitive behavioral therapy and support groups, such as Alcoholics Anonymous, are effective when combined with pharmacotherapy.⁵ Pharmacotherapy options include naltrexone, which has been recommended for relapse prevention in older adults. In addition, acamprosate has shown similar effects as naltrexone but has not been studied specifically in older populations. The use of combined naltrexone and acamprosate may produce slightly better results than either drug alone, although mixed results have been shown.⁵ When both drugs are used in combination, studies have not shown any negative interactions, and the combination therapy has been well tolerated,³⁷ although studies of this nature have not been performed in older adults. Finally, note that disulfiram must be used with caution in older adults owing to an increased risk of adverse effects, especially tachycardia and hypotension.⁵ Although psychosocial interventions, such as supportive or cognitive behavioral, are likely to be effective in older adults with alcohol abuse,³⁸ there are no known strategies to address AUD in the cognitively impaired elderly. Providing structure to an older person's daily routine and removing access to alcohol can help alcohol-related medical or psychiatric complications.

CONCLUSION

Geriatric AUD has long been an overlooked public health phenomenon that increasingly poses a challenge to the health care system. Primary care providers play a critical role in the recognition and treatment of AUD in older adults. Unique biopsychosocial factors facing

older adults make AUD in this population different from that in their younger counterparts. Risk factors in older adults include being a white male, being widowed/divorced, being aged 65 to 74 years, and the presence of financial strain. All geriatric patients should be screened for AUD during routine visits with primary care providers. Older adults respond just as well to chemical dependency treatment as younger adults, although their rate of referral to treatment is far less than that of their younger counterparts.

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Abbreviations and Acronyms: AUD = alcohol use disorder; AUDIT = Alcohol Use Disorders Identification Test; CAGE = Cut down, Guilty, Annoyed, Eye-opener; DSM = *Diagnostic and Statistical Manual of Mental Disorders*

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