

Alcohol and the elderly

good news, bad news and the missed diagnosis

Alcohol has potential benefits and problems for all ages. A little is beneficial; a lot is harmful. Here is what happens, and how to make a diagnosis that is often missed.

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Australia rates highly in the alcohol consumption stakes. Each year, Australians consume in excess of 7 L of absolute alcohol per person. Seventy per cent of men and almost 50% of women consume alcohol at least weekly, and 25% of men and 12% of women consume more than four alcoholic drinks each drinking session.

Older people are less likely than younger ones to consume harmful or hazardous levels of alcohol. Nevertheless, studies from the late 1980s indicate that about 10% of men and 4% of women over the age of 60 consume alcohol at levels in excess of the NHMRC guidelines on safe levels of consumption.^{1,2} According to the Australian Bureau of Statistics, 14% of men between 65 and 70 and 5% of those older than 75 drink in excess of these levels.³ The respective figures for women are 15% and 7% (see Table 1). These figures are similar to those reported in the USA and Brazil.

With the ageing population, declining birth rate and increasing average life expectancy in Australia, alcohol-related problems in the elderly will become increasingly important to diagnose. The elderly are usually considered as falling into two groups: the younger elderly (those aged 65 to

75 years) and the older elderly (those over 75 years). While information is sparse on alcohol consumption in the elderly, there is virtually none on selecting the most appropriate treatment for alcohol dependence in this older age group.

The good news

Recent studies have indicated that the cardio-protective effect of alcohol that is well recognised in middle-aged men is also seen in elderly men and women. In a community-based sample of subjects aged over 60 who were studied for six years, Simons and colleagues found lower rates of cardiovascular mortality in those who consumed alcohol in moderation.⁵ This protection occurred in those who consumed as little as one drink per week and remained in those (men) who consumed up to four drinks per day. In this sample, the protective effect was due predominantly to the consumption of beer.

Other studies have indicated that up to two alcoholic drinks per day reduces the risk of ischaemic stroke in older, as well as younger, men and women.⁶

It must be remembered that other methods

IN SUMMARY

- Although the elderly are less likely than their younger counterparts to consume harmful or hazardous levels of alcohol, those who do may suffer alcohol-related health problems.
- Alcohol-related problems in the elderly are often caused by drug interactions; altered drug pharmacokinetics and alcohol metabolism and increased medication use in the elderly contribute to this.
- Many elderly subjects with drinking problems are not diagnosed.
- Late onset heavy drinkers should be distinguished from those who started drinking early as they respond better to therapy.
- Treatment of alcohol-related problems in the elderly often comprises modification of drinking habits; however, withdrawal support is needed for those who are alcohol dependent.



continued

Table 1. Alcohol intake of elderly Australians^{3,4}

Mean alcohol intake (g/day)*	Health risk†	Proportion of subjects (%)	
		Age 65 – 75	Age >75
Men			
<40	Low	85.8	95.3
40 – 60	Hazardous	8.5	2.7
>60	Harmful	5.7	2.1
Women			
<20	Low	85.1	92.9
20 – 40	Hazardous	11.9	6.9
>40	Harmful	3.1	<1.0

* One standard alcoholic drink contains about 8 to 10 g alcohol. † These health risks relate to the general adult population.

Table 2. Examples of drug–alcohol interactions in the elderly

Drug type	Effect of interaction with alcohol
Antianxiety agents (e.g. benzodiazepines)	CNS depression, leading to confusion Depressed respiration
Antidepressants	Inhibition of drug metabolism, leading to toxicity and CNS depression Hypertension (monoamine oxidase inhibitors)
Antihistamines	CNS depression
Anti-infective agents, including griseofulvin (Fulcin, Griseostatin, Grisovin), metronidazole (Flagyl, Metronidazole, Metronide) and some cephalosporins	Facial flushing Headache (a disulfiram-like reaction)
Antipsychotics	Inhibition of drug metabolism, leading to toxicity and CNS depression
Anticonvulsants	CNS depression
Biguanides	Hyperlactic acidaemia
Hypoglycaemic agents, including sulfonylureas	Facial flushing Headache (a disulfiram-like reaction)
Narcotic analgesics	CNS depression

of reducing cardiovascular mortality in otherwise healthy adults include paying attention to diet, exercising and stopping tobacco smoking.

The bad news

Unfortunately for many people who drink alcohol (particularly those who drink heavily) physical, social and

psychological harm may occur. Elderly individuals with alcohol-related health problems can be divided into early onset and late onset heavy drinkers.

Early onset heavy drinkers are those who have survived almost a lifetime of heavy alcohol consumption. They are more likely to be male and unmarried and have often sustained

significant physical illness.

In contrast, late onset heavy drinkers (who comprise at least one-third of elderly people with alcohol-related health problems) are more likely to have started drinking after a stressful event, such as losing a spouse or job. They are more likely to have a transient drinking pattern, be depressed and be taking other medications. Recognition of these individuals is important as they often respond better to therapy than early onset heavy drinkers.

Alcohol-related problems

The effects of drug interactions

Although it is important to recognise morbidity and mortality due directly to alcohol consumption, alcohol-related problems in the elderly are often caused by drug–alcohol interactions. Such interactions are more common in the elderly due to a combination of factors.

The elderly tend to take more medications than younger people. In addition, with advancing age pharmacokinetics change, due to several factors. These include reduced absorption (due to diminished hepatic blood flow), reduced plasma protein binding, lower albumin levels, reduced activity of many of the major metabolic pathways (particularly those in the liver), and slower renal excretion.

Furthermore, ethanol metabolism alters with age. As mentioned above, hepatic blood flow diminishes with ageing. Body water content and lean body mass also reduce, and body fat content increases. These changes are thought to explain the higher blood–alcohol concentrations measured in the elderly than in their younger counterparts after consuming a standard drink.⁷

Table 2 shows some examples of drug–alcohol interactions in the elderly. One common effect is central nervous system (CNS) depression, which is associated particularly with sedative use and heavy alcohol consumption. CNS depression may lead to confusion and be complicated by falls.

Physical complications

Alcohol-related problems may exacerbate an underlying disease for which the individual is already being treated. CNS depression caused by alcohol can exacerbate pulmonary disease. In the cardiovascular system, alcohol can exacerbate hypertension, produce arrhythmias, precipitate heart failure and mask the anginal pain of ischaemic heart disease. In the musculoskeletal system, pain, exacerbation of gout and progression of osteoporosis may occur.

Other important physical complications of heavy consumption (i.e. >60 g alcohol/day for men and >40 g/day for women) include nutritional deficiencies (particularly of folic acid and thiamine) and poor nutrition, injuries (both those from falls and motor vehicle accidents), late onset seizures and incontinence.

Some of the physical manifestations of heavy alcohol consumption are more common in the elderly than in younger subjects. These include ischaemic and haemorrhagic stroke⁸ and various cancers, including those of the mouth, oesophagus, pharynx, larynx, liver and female breast.⁹

Many of the physical complications of heavy alcohol consumption, particularly severe liver disease, carry a bad prognosis in the elderly. For individuals with cirrhosis, mortality after one year may be greater than 50% in individuals aged over 60 years, compared with 7% in those under 60 years.¹⁰

Psychoneurological complications

The elderly are more likely than younger people to present with some psychoneurological complications of alcoholism, such as sleep problems (e.g. insomnia), anxiety, depression and dementia. In addition, alcohol use ranks third after dementia and organic medical illness as a cause of delirium in the elderly.

Both moderate and heavy alcohol consumption increase the risk of suicide in the elderly.

While alcohol use and misuse can co-exist with psychiatric illnesses, alcohol excess alone can cause hallucinations, anxiety and depressive symptoms that may be mistaken for primary psychiatric disorders.

The missed diagnosis

For various reasons, most medical practitioners diagnose only about one-third of

elderly subjects with drinking problems. Failure to take a history of alcohol consumption at a standard consultation is one common reason. Another is denial or under-reporting by the patient or the patient's family.

Consideration of several factors associated with drinking problems in the elderly may help to make a diagnosis. The elderly are less likely to binge drink

Screening questionnaire: CAGE

CAGE is an acronym for four questions that can be asked during the clinical examination to assess drinking problems. A 'yes' answer to three or more questions correlates strongly with alcohol dependence; 'yes' to two questions suggests a drinking problem. The questions should be phrased to differentiate between a current and a past problem.

- C** Have you ever thought that you should cut down your drinking?
- A** Have you ever been annoyed by someone talking about your drinking?
- G** Have you ever felt guilty about your drinking?
- E** Have you ever needed an early morning drink (an eye-opener) to get you going?

Table 3. Assessment of patients with a suspected drinking problem

History

- Assess mental state to confirm reliability of self-reported alcohol consumption and assess alcohol-related brain damage
- Search for depressive symptom (e.g. sleep disturbance, lethargy, depressed mood, little pleasure in activities previously enjoyed, low self-esteem)
- Comprehensively review health, focusing on specific alcohol-related symptoms, such as tremor, blackouts, morning vomiting

Assessment of alcohol use

- Determine the frequency of alcohol consumption
- Assess the type of beverage consumed (spirits, wine or beer)
- Determine whether spirits are added to tea or coffee
- Obtain a corroborative history from carers or family members

Examination

- Conduct a physical examination, with particular emphasis on the peripheral manifestations of alcohol excess and chronic liver disease (e.g. parotid enlargement, Dupuytren's contracture, spider naevi and jaundice)
- Conduct a thorough neurological examination to investigate evidence of thiamine deficiency (e.g. nystagmus, cerebellar ataxia, and peripheral neuropathy)

Investigations

- When indicated, organise laboratory tests (e.g. liver function tests, blood-alcohol level, carbohydrate-deficient transferrin) to support the preliminary diagnosis

but more likely to add alcohol to tea or coffee, especially at night. An index of suspicion should be higher in those:

- with housing problems
- who have poor nutrition
- with inadequate self-care
- who have had falls or accidents
- who are socially isolated.

Alcohol consumption should also be carefully assessed in those who smoke

or take sedatives, as these factors are particularly associated with alcohol ingestion in the elderly.

Screening questionnaires

As in any consultation, a sensitively taken, comprehensive history will usually provide more information than indirect methods. However, there are some circumstances in which screening

questionnaires may be of value (e.g. as part of an aged-care assessment).

Screening questionnaires, such as the CAGE questionnaire (see the box on page 31) and the Michigan Alcohol Screening Test (MAST), are less sensitive in the elderly than in younger, more active people. A recent study has shown that in an elderly medical outpatient population the CAGE questionnaire

Screening questionnaire: AUDIT

The questions below comprise the Alcohol Use Disorders Identification Test, or AUDIT. Questions 1 to 8 are scored on a 5-point scale from 0 to 4, reading from left to right. Questions 9 and 10 are scored on a collapsed 5-point scale (i.e. 0, 2 and 4), reading from left to right. The maximum possible score is 40. A score of 8 or more suggests a harmful or hazardous drinking level.

Question

	Score				
	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2 to 4 times a month	2 to 3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected from you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get you going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or has someone else been injured as a result of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10. Has a relative, friend, doctor or other health worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year

has low sensitivity at conventional cut-offs.¹¹ MAST is not considered a suitable screening test in the elderly because of its length and lack of information on the quantity and frequency of drinking.

In the primary care setting, the Alcohol Use Disorders Identification Test (AUDIT; see the box on page 33) identified a higher number of individuals with alcohol use disorders than the CAGE questionnaire.¹² Specifically, the CAGE questionnaire failed to identify the three women who scored positively on the AUDIT.

Assessment

The components of a medical assessment of elderly patients with suspected alcohol-related problems are summarised in Table 3.

Treatment

In many cases, treatment of elderly patients with alcohol-related problems requires modification of habits to reduce either the additive effect of alcohol on the underlying condition or the impact of alcohol–drug interactions.

When the individual is clearly alcohol dependent, withdrawal support (detoxification) is required. For the elderly, this is better performed in a residential setting and often, due to comorbid physical problems, in hospital.

As a rule, it is wise to limit the use of benzodiazepines for prophylaxis against withdrawal symptoms as these agents may produce cognitive impairment in the elderly. Long-acting benzodiazepines, such as diazepam (Diazemuls, Ducene, Valium), are particularly likely to accumulate in the elderly. However, if withdrawal symptoms requiring therapy are present (e.g. tremor, increasing anxiety and sweating), the short term use of benzodiazepines is indicated. The choice of drug depends on the experience of the doctor. It should be either a short half-life drug such as oxazepam (Murelax, Serepax) or lorazepam (Ativan), with

the dose titrated against the clinical response, or diazepam given twice daily rather than four times daily.

Generally, about half the dose recommended for younger adults is required for the management of withdrawal in the elderly. However, some patients may need much higher doses due to the increased blood–alcohol levels seen in the elderly and because the alcohol withdrawal syndrome in the elderly may

follow a severe and protracted course.¹³

If the withdrawal syndrome is mild, support can be given at home, provided the patient has a responsible carer, a quiet calm environment and adequate psychosocial support. Daily visits by a doctor or nurse to monitor the patient and advise the carer are essential.

Once alcohol withdrawal has been achieved, many patients will need relapse-prevention interventions. Although indi-

vidual counselling is helpful for some, most benefit from a supportive approach, particularly visits from health visitors and neighbours who can reduce feelings of isolation. Emphasis should be placed on nondrinking social activities.

The use of disulfiram (Antabuse) should be avoided as it is often hazardous in the elderly with overt or occult vascular disease. Two promising new drugs, naltrexone (Revia) and acam-

prosate (Campral), appear to act as anti-craving agents and may benefit the alcohol dependent. However, we have little experience of their use in the elderly.

Summary

As the population ages, it will become increasingly important to diagnose the elderly with drinking problems. At a standard consultation doctors should ask elderly patients about their alcohol intake

and look for specific factors associated with drinking problems in the elderly. In some settings, screening questionnaires may be beneficial. While treatment often requires modification of drinking habits, those patients who are alcohol dependent will need withdrawal support. **MT**

References

1. National Heart Foundation of Australia. Risk factor prevalence study no. 3, 1989. Canberra: National Heart Foundation of Australia and Australian Institute of Health, 1990.
2. National Health and Medical Research Council. Is there a safe limit of alcohol consumption for men and women? 2nd ed. Canberra: AGPS, 1991.
3. Australian Bureau of Statistics. National health survey: alcohol consumption 1989-90. Canberra: Australian Bureau of Statistics, 1991 (Catalogue No.438 1.0).
4. National Health and Medical Research Council. Dietary guidelines for Australians. Canberra: AGPS, 1992.
5. Simons LA, McCallum T, Friedlander Y, et al. Alcohol intake and survival in the elderly: a 77-month follow-up in the Dubbo study. *Aust N Z J Med* 1996; 27: 662-670.
6. Sacco RL, Elkind M, Boden-Albala B, et al. The protective effect of moderate alcohol consumption on ischaemic stroke. *JAMA* 1999; 281: 53-60.
7. Hartford JT, Samdrajski T. Alcoholism in the geriatric population. *J Am Geriatr Soc* 1982; 30: 18-24.
8. Hillbom M. Alcohol consumption and stroke: benefits and risks. *Alcohol Clin Exp Res* 1998; 22: 3525-3585.
9. Thun MJ, Reto R, Lopez AD, et al. Alcohol consumption and mortality among middle-aged and elderly US adults. *N Engl J Med* 1997; 337: 1705-1714.
10. Potter JF, James OWF. Clinical features and prognosis of alcoholic liver disease in respect of advancing age. *Gastroenterology* 1987; 33: 380-387.
11. Adams WL, Barry KL, Fleming MF. Screening for problem drinkers in older primary care patients. *JAMA* 1996; 276: 1964-1967.
12. Clay SW. Comparison of AUDIT and CAGE questionnaires in screening for alcohol use disorders in elderly primary care outpatients. *J Am Osteopath Assoc* 1997; 97: 588-592.
13. Ozdemir V, Fourie J, Busto U, et al. Pharmacokinetic changes in the elderly. Do they contribute to drug abuse and dependence? *Clin Pharmacokinet* 1996; 31: 372-385.