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Managing alcohol dependence and alcohol-related liver disease: a problem for the hepatologist, psychiatrist or economist?

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Alcohol misuse is a major issue for medical and social agencies alike. Although the harmful effects of excessive consumption are well publicised, one-quarter of adults in England still consume alcohol at hazardous or harmful levels.[1] A global alcohol strategy has recently been agreed by the World Health Organization,[2] supported in Britain by extensive guidance from the National Institute for Health and Clinical Excellence (NICE),[3–5] parliamentary committees[6,7] and non-governmental organisations – but to whom does this advice apply?

The sobering facts

Most adults in Britain drink alcohol and do so responsibly.[1] However, some 33% of men and 16% of women drink hazardously – that is, at a level which increases their risk of alcohol-related harm, while 6% of men and 4% of women drink to an extent that is mentally or physically harmful.[8,9] In 2007, 9% of men and 4% of women in England were dependent on alcohol (Table 1).[10]

Alcohol misuse is associated with a wide variety of physical health problems and is also causally linked to accidents, injuries and poisoning. There was a total of 863,300 alcohol-related hospital admissions in England in 2007–8, of which 222,600 were for diseases wholly attributable to alcohol. Two-thirds of these admissions were for mental/behavioural disorders due to alcohol use, while 30,100 were for alcohol-related liver injury.[11,12] Men make up almost two-thirds of the admissions. There are significant differences in admission ages for conditions that are wholly or partly alcohol-related (Fig 1).[11,12]

Table 1. Adult drinking behaviour by gender (individuals in England aged ⩾16 years).[1]

	Variable	Men (%)	Women (%)
Population drinking levels*	Drank alcohol on at least one day the previous week	72	57
	Drank some alcohol every day the previous week	13	7
	aged ⩾65 years	22	12
	aged 16–24 years	3	2
	Drank ⩾8 units (men) or ⩾6 units (women) on at least one day the previous week		
	aged ⩾65 years	3	3
	aged 16–24 years	32	25
Hazardous drinking**	Men >21 <50 units/week Women >14 <35 units /week	31	20
Harmful drinking**	Men >50 units/week Women >35 units/week	9	6
Dependent drinking+	Severity of Alcohol Dependence Questionnaire	9	4

Sources:
* General Household Survey, 2007.[8]
**General Household Survey, 2006.[9]
+Adult Psychiatric Morbidity Survey, 2007.[10]

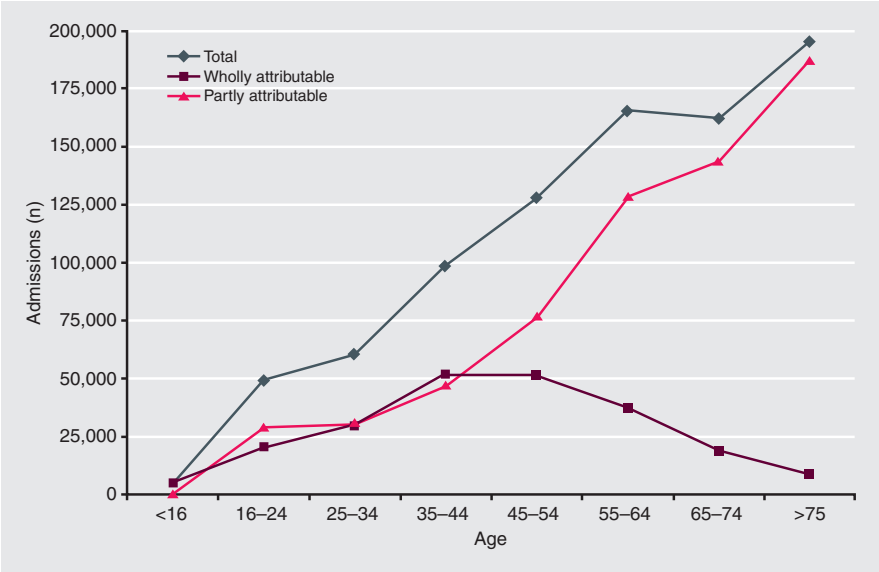

Fig 1. Alcohol-related hospital admissions in England, by age, 2007–8. Activity in NHS hospitals and commissioned activity in the independent sector. Finished activity episodes are identified when an alcohol-related diagnosis is recorded in any of the 20 primary and secondary fields in a Hospital Episode Statistics record. *Wholly attributable* conditions are alcohol-specific (eg alcohol dependence, alcoholic cirrhosis of the liver), peak age for admission 35–54 years. *Partly attributable* conditions such as accidents, injuries and some cancers where varying proportions are alcohol-attributable; total figures adjusted accordingly, highest number of admissions aged >75 years.[11,12]

In 2007, 6,541 deaths in England were directly attributable to alcohol, 4,249 (65%) of them due to alcohol-related liver disease.[11,12] If account is taken of attributable fractions, the number of overall deaths increases substantially, with an estimated figure for 2005 of 14,982.[11,12] The cost of alcohol-related harm to the NHS is £2.7 billion a year at 2006–7 prices.[13]

Management of alcohol dependence

Alcohol withdrawal

Approximately 6% of adults in Britain are dependent on alcohol.[8–10] Management of these individuals centres initially on their safe withdrawal from alcohol.[4,5] The withdrawal may be planned as part of a package of care, and can often be managed safely and effectively in an outpatient setting or at home supervised by a specialist community nurse. However, certain patients are best withdrawn from alcohol in hospital, including those who have experienced severe withdrawal symptoms in the past, have a history of fitting, significant physical and mental comorbidities or complex social needs, and those aged 18 or younger.

Frequently, however, the withdrawal is unplanned, perhaps in the context of an intercurrent illness or accident. In these instances the decision to hospitalise is determined by the severity of the withdrawal, concomitant illness and any comorbidities. However, there are no hard or fast rules.

Patients with moderate or severe alcohol withdrawal symptoms should be sedated. The drug most commonly used is chlordiazepoxide, given in a standard dose reducing steadily over several days.[4,5] Severe established withdrawal, or delirium tremens, is best treated initially with a quick-acting benzodiazepine such as lorazepam, given orally or parenterally, or with haloperidol. Withdrawal seizures should be treated with parenteral lorazepam. Drug dosages should be reduced in patients with cirrhosis and those with respiratory disease because of the risk of respiratory depression. Prophylactic parenteral thiamine should be given to individuals withdrawing from alcohol if they are malnourished, have decompensated liver disease or an acute illness or injury. Otherwise, oral supplements should be used.[4]

Relapse prevention

Once patients have been successfully withdrawn from alcohol they need support to maintain abstinence in the longer term.[5] The level and type of support needed varies considerably.

There are a variety of treatment options although the most successful are psychosocial therapies[5] including cognitive behavioural therapies, counselling,

Key points

Almost one-quarter of adults in Britain are drinking alcohol at hazardous or harmful levels; 6% are dependent drinkers

Dependent drinkers who have previously experienced severe withdrawal symptoms, have a history of fitting, significant comorbidities or complex social needs are best withdrawn from alcohol in hospital; benzodiazepines are the drugs of choice

Patients with severe alcoholic hepatitis should be treated with corticosteroids and supported nutritionally; the diagnosis should be biopsy-proven

Patients with alcohol-related cirrhosis with refractory decompensation, despite abstinence from alcohol for more than three months, should be considered for transplantation

Population-wide risk reduction may be achievable via change in alcohol policies, but active and responsible governmental and non-governmental interest is paramount for effective policy change

KEY WORDS: alcohol dependence, alcohol drinking, alcohol-related liver disease, management, prevention

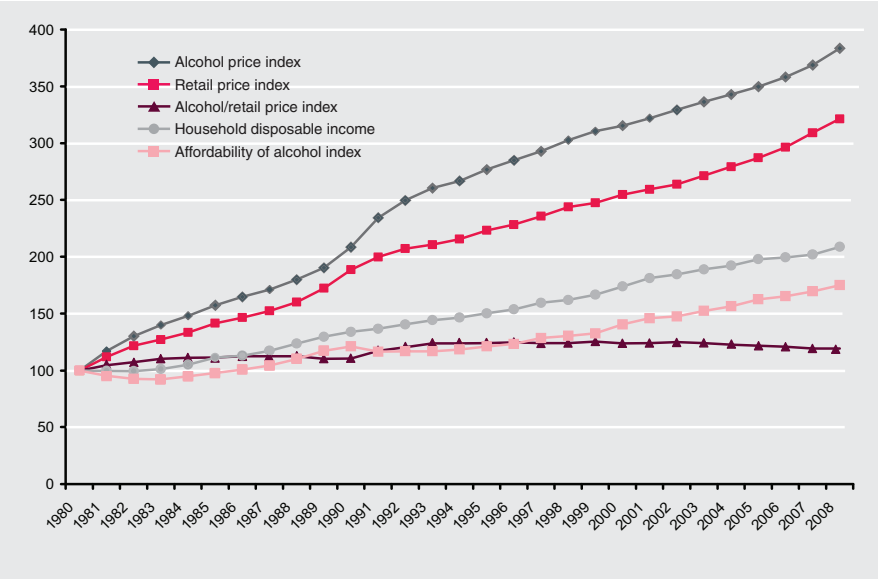

Fig 2. Affordability of alcohol, 1980–2008: indices of alcohol price, retail price for all items, real household disposable income and the consequent affordability of alcohol (indices: 1980 = 100).[18,19]

solution focused relapse prevention, and family/couples therapy.

Pharmacotherapy is a useful adjunct to treatment but is currently underutilised.[1,5]

Acamprosate has a significant, albeit modest, effect on drinking behaviour. It is usually prescribed in a daily divided dose of 2 g and given for 12–18 months. It has an excellent safety profile. Greatest benefit is seen if treatment is started just before the patient is withdrawn from alcohol.

Naltrexone also has a significant but modest effect on drinking behaviour. It is prescribed in a dose of 50 mg daily for up to 12 months. It interacts with opioid drugs and hepatotoxicity has been observed with high doses. It is not currently licensed for use in the UK.

There is no real evidence base for the use of *disulfiram*, although it is still popular in some centres.

Treatment can be delivered within the community or by specialist addiction services. However, as the range of therapies provided in both settings is similar, the boundaries between them are noticeably blurred. GPs now play a more active and important role in the management of these patients. Self-help groups such as Alcoholic Anonymous provide a valuable service. Despite the guidance provided by the Department of Health in 2007,[14] alcohol services are still poorly developed: only one in 18 alcohol-dependent individuals in the UK accesses treatment each year.[15]

Management of alcohol-related liver disease

Although alcohol produces a spectrum of liver injury ranging from fatty liver to alcoholic hepatitis, cirrhosis and hepatocellular carcinoma, only a minority of individuals (perhaps <20%) develop significant liver injury. These lesions do not occur in isolation and may coexist.

Over the past 30 years, mortality from alcohol-related liver disease has increased by over 450% and deaths in young people are rising sharply.[16] Admissions to intensive care units in England and Wales for alcohol-related liver disease tripled between 1996 and 2005.[17]

Few specific management issues arise in these patients. The most important is to secure long-term abstinence from alcohol. In the majority of individuals it is all that is required.

A minority of patients with alcoholic hepatitis present with features of severe hepatic dysfunction, many on a background of already established cirrhosis. The mortality rate in these individuals may be as high as 40%. However, the outcome can be significantly improved by treatment with corticosteroids, typically prednisolone 40 mg daily reducing over six weeks.[5] A discriminant function (DF) of above 32 identifies patients who will benefit from treatment:

$$DF = 4.6 \times (\text{prothrombin time [patient–control]}) + \text{bilirubin}/17$$

The diagnosis of severe alcoholic hepatitis should be biopsy-proven, but this need not delay the start of treatment.[4] Patients should also receive vigorous nutritional support. A small number of patients do not respond to steroids and the treatment options for them are limited. Transplantation has been used in some centres but its use is contentious.

Patients with decompensated alcohol-related cirrhosis who have not improved despite optimal management and abstinence from alcohol for at least three months should be considered for transplantation.[5] At present, patients with alcohol-related liver disease are underrepresented on the majority of transplant waiting lists in the UK.

Prevention: the bigger picture

Population approach

Guidance produced by both the House of Commons Health Select Committee[6] and the Public Accounts Committee[7] suggests that changes in government policy are likely to be highly effective – and cost-effective – in reducing alcohol-related harm, and that national level action is needed to reduce alcohol consumption in the population as a whole.

Between 1980 and 2008 alcohol became 75% more affordable as incomes increased faster than the price of alcohol (Fig 2).[1,18,19] Today, 80% of alcohol consumed in the UK is purchased by less than 30% of the population, suggesting that low pricing is encouraging consumption in those who already drink more heavily.[3]

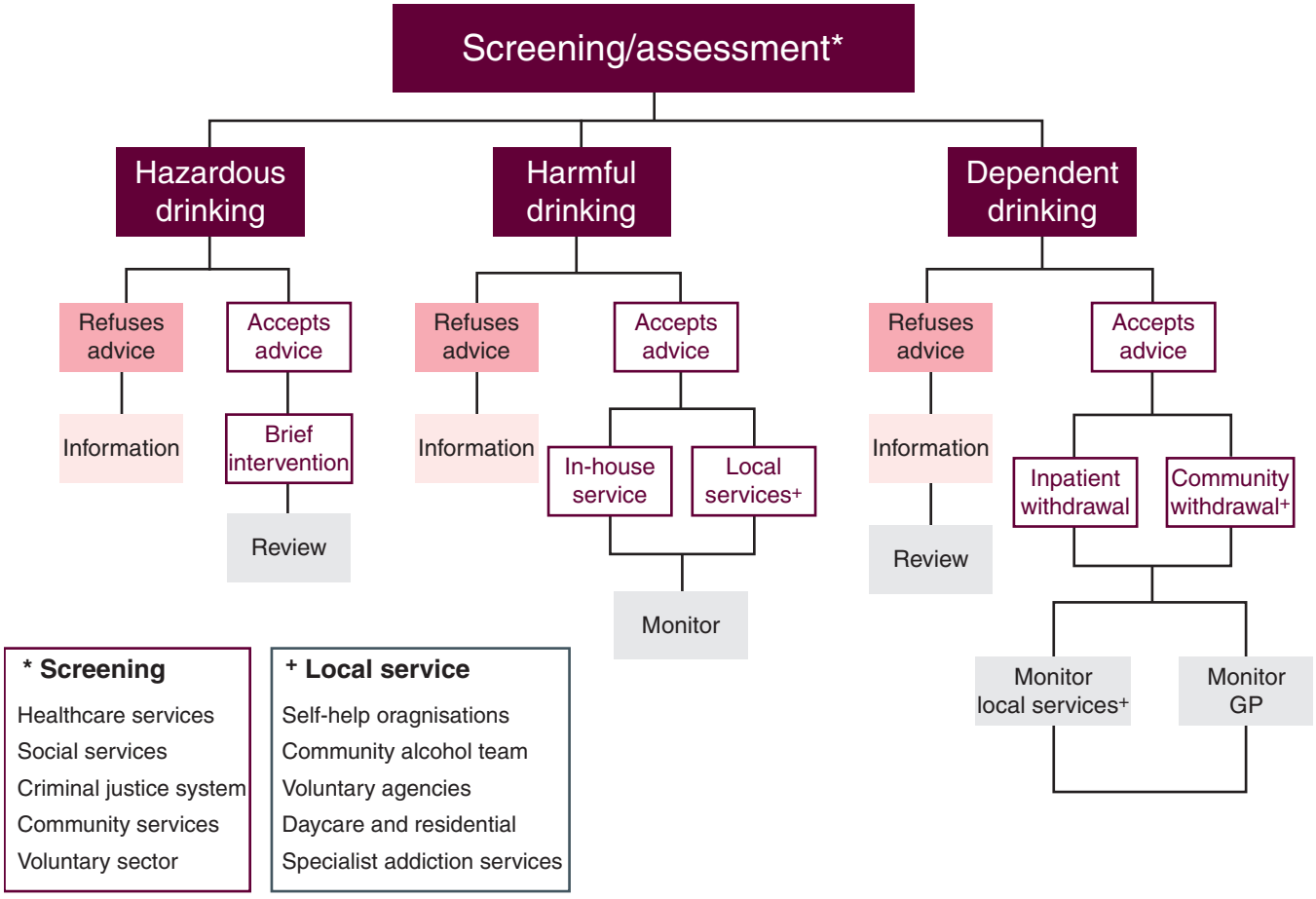

Fig 3. Screening for alcohol use disorders and subsequent proposed care pathways (GP = general practitioner).

Making alcohol less affordable is the most effective way of reducing alcohol-related harm.[3,20] A review of pricing policies is urgently needed. Current excise duty regimens, for example, are anomalous and should be altered to link alcohol duty to the strength of each product. Likewise, the introduction of minimum pricing has long been mooted.

Stricter licensing laws would reduce the consumption of alcohol by making it less available. Stricter marketing laws would work as effectively. Changes in advertising standards are likely to be crucial in any coordinated effort to reduce alcohol-related harm, particularly in young people.[3] Government expenditure on promoting alcohol awareness in 2009–10 was £17.6 million whereas the drinks industry spent £600–800 million on promoting consumption.[3]

Individual approach

Early detection and intervention are key to the prevention of alcohol dependence and harm. NICE guidance recommends that all NHS and other professionals in the public, private, community and voluntary sector should carry out alcohol screening as an integral part of practice,[3] using a validated, screening questionnaire such as the Alcohol Use Disorders Identification Test (AUDIT).[21] Where impractical, screening could be targeted at high-risk groups.

Patients identified as drinking hazardously should be offered either immediate or scheduled motivational advice in the form of a brief intervention (Fig 3). A more prolonged, extended brief intervention may be necessary for some. For many patients, these brief interventions are sufficient to induce lifestyle changes, but they should be reviewed regularly.

Additional help may be required for those drinking in a harmful way or with alcohol dependence and in those who do not respond to brief intervention. Patients who are severely dependent or have coexistent psychiatric and/or physical morbidity should be referred to specialist services (Fig 3).

Conclusions

The hepatologist has a clear role in the management of individuals with significant alcohol-related liver injury, the psychiatrist in managing the patient at the more severe end of the dependence spectrum, and the economist in informing fiscal policy. However, the effective management of the social, health and economic problems caused by alcohol misuse requires a much broader collaborative and multidisciplinary approach led ultimately by government.

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