Alcohol abuse in older people - presentation and scope of the problem - a clinical review

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Abstract

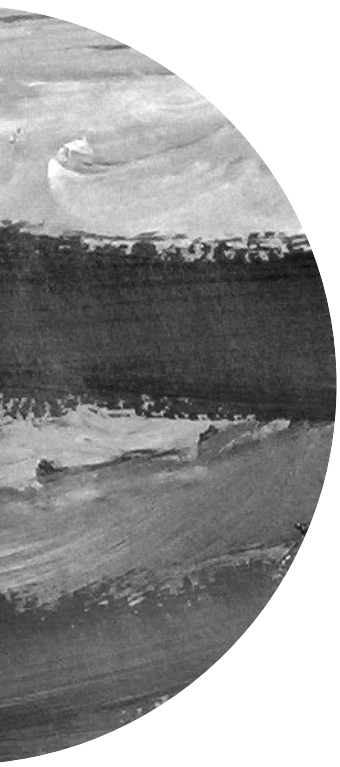
Alcohol abuse is recognised as a serious problem in the UK and there is a strong correlation between average consumption, the prevalence of heavy drinking and associated harm. Alcohol abuse disorders are thought to be common in older people and associated with impairments in physical, psychological, social and cognitive well-being. The effects of co-morbidity, medication and age may exacerbate the risks of alcohol abuse.

We conducted a review of published literature using a defined search strategy of electronic databases, including articles in English, between 1960-2004. This yielded 74 papers that matched the search criteria. Six papers were selected for detailed analysis.

Alcohol abuse in older people has a prevalence of between 1-4% in the general population, rising to between 7-22% in inpatients and 23-44% for psychiatric inpatients. The health-related effects of alcohol use in older people are still uncertain. Neither screening for elderly alcohol abuse in a general population nor the use of validated tools such as the CAGE questionnaire may not be effective in the general population. However, for rapid assessment in a clinical setting, the CAGE questionnaire, with a cut-off score of >=2, will effectively discriminate older patients with a history of drinking problems from those without such a history.

In the UK there has been little high-quality research reporting the prevalence, identification and treatment of alcohol use disorders in older people. There is a clear need for a specific research programme to address these issues in line with the government's Alcohol Harm Reduction Strategy and the NSF for Older People.

Keywords: Older people, alcohol abuse, alcohol dependence, screening, prevalence



Introduction

Alcohol abuse is recognised as a serious problem in the UK "across gender and age groups" (Plant 2004). The government have recognised this in the recent publication of their harm reduction strategy for England (Cabinet Office 2004), though this has recently been criticised in the BMJ as "the dampest of squibs" (Smith 2004). Alcohol consumption in Britain has increased by more than 50% in the last 30 years and alcohol related deaths, particularly liver cirrhosis, have risen as a result (Marmot 2004). Alcohol is also responsible for much morbidity, social disruption and failure. In their recent report, the Academy of Medical Sciences noted that there is a strong correlation between average consumption, the prevalence of heavy drinking and associated harm. In Britain the price of alcohol has fallen steadily in recent years, while consumption and alcohol related harm have risen (The Academy of Medical Sciences 2004).

Are we perhaps complacent about alcohol abuse and its effects? It is after all our favourite drug and as the Prime Minister states in the foreword to his strategy document "Millions of us enjoy drinking alcohol with few, if any, ill effects. Indeed, moderate drinking can bring some health benefits". Despite the correlation between alcohol consumption and poor health, there are few votes in being serious about alcohol reduction, especially when there are a million jobs associated with alcohol production, distribution and consumption in the UK.

Alcohol abuse disorders are thought to be common in older people and associated with considerable morbidity. The ageing of the population means that the absolute number of older people with alcohol use disorders will increase, even if the prevalence rate of abuse disorders remains constant. Alcohol abuse in older people is probably under-detected and misdiagnosed (O'Connell et al 2003). It is often associated with impairments in physical, psychological, social and cognitive well-being. The effects of co-morbidity, medication and age itself mean that recommendations about safe levels of alcohol use in older people are uncertain. It seems important that we try to better understand the likely presentation and scope of alcohol abuse disorders in our older patients.

We decided to conduct a study into the scope and presentation of alcohol abuse in older people in the form of a detailed literature review. This would run as one of two principal research projects within the Fisher Medical Centre Research Unit (FMCRU) during 2003/4. Once we had developed an outline project, this was presented to South West Yorkshire Mental Health Trust (SWYMHT) and the Medical Research Council General Practice Research Framework (MRC GPRF) and both organisations were supportive of the study. At this stage we formally linked this study to the SWYMHT "Modernising mental health and learning disabilities services" research programme through their ageing and mental health task group.

The Fisher Medical Centre research team includes Dr James Newell and Ms Hannah Rossall who provided expert statistical and information services advice respectively.

This paper is the report of our literature review study and will form the basis of a research protocol for a collaborative project between Fisher Medical Centre, SWYMHT and possibly the MRC GPRF.

Method

The Fisher Medical Centre is a research general practice based in Skipton, North Yorkshire. We have research links with several organisations including South West Yorkshire Mental Health Trust (SWYMHT) and the MRC GPRF. The practice population is 13,500 patients based in and around Skipton and the surrounding villages and dales. It is a popular retirement area and some 20% of our practice population are aged over 65 years.

This study arose from clinical general practice. The two GP authors were aware that they seemed to be seeing a lot of elderly patients with physical, mental, psychological and social problems where alcohol use seemed to be a significant factor. However, there did not seem to be much easily available information about the prevalence, presentation or scope of alcohol abuse in older patients, though anecdotally, most of the practice GPs felt that it was an important problem.

We defined the research question as "what is the presentation and scope of alcohol abuse in older people?" We used the standard definition of alcohol abuse and dependence provided by the Diagnostic and Statistical Manual of mental disorders (DSM IV – see Table 1). A systematic review of published literature was conducted using a defined search strategy (see Table 2) of electronic databases. The scope of the review was international but we only included articles in the English language. We decided to review the literature from 1960 onwards (1960-2004) to improve the prospects of us finding epidemiological/prevalence studies.

We defined older people as those aged 65 years and over. The GP authors would read abstracts of all papers that matched the search criteria and reach agreement on the list of articles to be included in the review (see Table 2). This review would include the full range of published articles that met our search criteria, not just experimental studies; therefore it was not our aim to perform any kind of meta-analysis of the data.

Table 1 – definitions

DSM-IV Alcohol Abuse (1 or more criteria for over 1 year)

- Role Impairment (e.g. failed work or home obligations)
- Hazardous use (e.g. Driving while intoxicated)
- Legal problems related to alcohol use
- Social or interpersonal problems due to alcohol

DSM-IV Alcohol Dependence (3 criteria for over 1 year)

- Tolerance (increased drinking to achieve same effect)
- Alcohol Withdrawal signs or symptoms
- Drinking more than intended
- Unsuccessful attempts to cut down on use
- Excessive time related to alcohol (obtaining, hangover)
- Impaired social or work activities due to alcohol
- Use despite physical or psychological consequences

N.B. DSM-IV = Diagnostic & Statistical Manual of Mental Disorders

Table 2- search strategy

- (MeSH term applied where available)
- Alcohol Abuse (KW, MeSH 1960_) OR
- Alcoholism (KW, MeSH, 1960_) OR
- Alcohol Drinking (KW, MeSH, 1960_) AND
- Elderly (KW, MeSH 1960_) OR
- Aged (KW, MeSH 1960_) OR
- Old$ Person$ (KW, MeSH 1960_) OR
- Old$ People$ (KW, MeSH 1960_) AND
- Age - Aged 65 Yrs and Older (Filter) OR
- Age – Very Old 85 Yrs and Old (Filter) AND
- Prevalence (KW, MeSH 1960_) OR
- Diagnosis (KW, MeSH 1960_) OR
- Assessment Diagnosis (KW, MeSH 1960_) OR
- Detection (KW, MeSH 1960_) OR
- Substance Abuse Detection (KW, MeSH 1960_) OR
- Alcohol Abuse Detection (KW, MeSH 1960_) OR
- Alcohol Use Disorders Identification Test (KW, MeSH 1960_) AND
- English Language (Filter) AND
- Systematic Review$ (KW, Filter) OR
- Review$ (KW, Filter) OR
- Meta Analysis (KW, Filter) OR
- Literature Review (Filter) OR
- Review Articles (Filter)

KW = Keyword search

Results

1. Prevalence and presentation of the problem

The initial search of electronic databases yielded 68 papers that matched the search criteria. A further six were added from journal hand searches and personal contacts, making a total of 74 papers for initial review. Six of these papers were selected for detailed analysis, including two clinical review articles, two systematic reviews, one meta-analysis and one combined systematic review and meta-analysis.

The prevalence of alcohol use disorders in older people is generally accepted to be lower than in younger groups. Most prevalence studies have been carried out in North America and the diagnostic criteria used seem to vary considerably or are not clearly defined. There is general agreement that the prevalence is lower in community based studies than for older inpatients and those attending emergency departments. Among older people, socio-demographic factors associated with alcohol abuse include being; male, socially isolated and single, separated or divorced. Overall the prevalence in the general (US) population ranged from 1-4%, rising to between 7-22% of older inpatients and as much as 23-44% for psychiatric inpatients(Conigliaro, Kraemer, & McNeil 2000; Fiellin, Reid, & O'Connor 2000; O'Connell, Chin, Cunningham, & Lawlor 2003).

Alcohol abuse disorders may be undetected or under-diagnosed in older people for many reasons. Those commonly reported include; reluctance of older people to disclose the information, cognitive impairment and unreliability of history, atypical presentations (e.g. falls, confusion, depression, social failure), and a lower degree of health professional suspicion. There is no clear guidance on safe levels of drinking for older people and diagnostic/screening criteria tend to focus on current drinking rather than lifetime alcohol consumption (Conigliaro et al 2000; O'Connell et al 2003).

Alcohol use disorders in older people are associated with a wide spectrum of adverse effects in terms of physical, psychological, cognitive and social health. The effects of ever having been a heavy drinker have been shown to be long-lasting and have adverse effects on illness, perceived health status, mental health and social wellbeing. There is some evidence that moderate alcohol intake may be beneficial but there is insufficient data to exclude personality and social factors as being more important and there is uncertainty whether or not the magnitude of risk posed by alcohol increases with age (Carrington Reid, Boutros, O'Connor, Cadarin, & Concato 2002; Conigliaro et al 2000; O'Connell et al 2003).

One systematic review of the health-related effects of alcohol use in older persons (Carrington Reid et al. 2002;) assessed 91 exposure-outcomes in 84 articles, relating to four outcomes; falls, functional impairment, cognitive impairment and all cause mortality. The age criteria were not always clearly defined but 63% included only participants aged over 60 years. Two thirds of the studies measured the effects of alcohol on only one of these four outcomes, five studies measured the effects on two and only one measured the effects on three outcomes. Seventeen (20%) of the 84 studies demonstrated harm associated with increased alcohol exposure, 59 (70%) studies found no association between increased alcohol use and adverse effects and eight (10%) reported benefit from greater alcohol use. Studies that demonstrated harm did not have higher methodological scores than those that found no association or benefit from alcohol use. The reviewers commented that most studies had methodological limitations related to; problems with quantity-frequency measures, under-reporting of alcohol use, lack of information about past drinking behaviour and current drinking patterns (e.g. binge drinking). They concluded that the magnitude of the risk posed by alcohol among older adults remained uncertain and recommended prospective studies to better define the health-related effects of alcohol use in this age-group.

2. Screening for alcohol abuse in older people

Given the multi-faceted presentation of alcohol abuse disorders in older people – are there effective screening strategies to identify patients with alcohol problems in primary care settings? In their systematic review Fiellin et al (2000) found 27 studies that screened for alcohol abuse and dependence. This systematic review was not restricted to an elderly population. The reviewers found that the AUDIT (10 questions) and CAGE (four questions) diagnostic tools performed consistently better than other methods with the results varying by sex and ethnicity. The AUDIT tool was most effective at finding subjects with at-risk, hazardous or harmful drinking (sensitivity 51-97% and specificity 78-96%), while the CAGE tool was most effective for identifying alcohol abuse and dependence (sensitivity 63-70% and specificity of 82-91%) in older populations for a score of two or more. Unfortunately, most of the studies reviewed, inconsistently adhered to both methodological standards and reporting of alcohol intake by amount and duration.

In their clinical review Conigliaro et al (2000) assessed the CAGE, MAST-G and AUDIT tools for the screening and identification of older adults with alcohol problems in primary care. In populations over the age of 60 years, they found that the CAGE questionnaire was the most effective brief screen (sensitivity 70%, specificity 91%) for a score of two or more. However, they warned that CAGE may be less sensitive in elderly populations. The modified 24 item MAST-G scale was also a valid tool in older people with good sensitivity (95%) and specificity (78%) but was lengthy and time-consuming to use. The AUDIT tool was found to perform poorly in elderly populations.

These reviews would seem to suggest that alcohol abuse screening in older people may be feasible in primary care using the standard 4 item CAGE questionnaire with a score of two or more. However, two recent reviews have cast doubt on the value of the CAGE questionnaire for screening for alcohol abuse and dependence in general clinical populations (Aertgeerts, Buntinx, & Kester 2004) and the effectiveness of screening at all for excessive drinkers in general practice as a precursor to brief interventions (Beich, Thorsen, & Rollnick 2003).

Beich et al (2003) reported a systematic review and meta-analysis of screening in brief intervention trials targeting excessive drinkers in general practice. They reported that for every 1000 patients screened, 90 will require further assessment of which 25 will qualify for brief intervention and two or three can be expected to reduce their alcohol intake. They concluded that screening in general practice did not appear to be an effective precursor to brief interventions targeting excessive alcohol use.

Aertgeerts et al (2004) reported a diagnostic meta-analysis to evaluate the CAGE questionnaire in screening for alcohol abuse and dependence in general clinical populations. They identified 35 articles that used the DSM-IV criteria as the gold standard to test the diagnostic value of CAGE, 10 of which were included in the meta-analysis. They calculated that with a cut off score of two or greater, the pooled sensitivity of CAGE was far better in hospital inpatients (87%) than in primary care (71%) or ambulatory patients (60%). This ties in closely with the results reported earlier in this paper (Conigliaro et al 2000; Fiellin et al 2000; O'Connell et al 2003). They concluded that the diagnostic value of the CAGE questionnaire was of limited value as a screening test for alcohol abuse and dependence.

An analysis of pooled results comparing the different screening tools is shown below in Table 3.

3. Summary of results

Alcohol abuse disorders are probably common and important causes of morbidity and mortality in older people. They are likely to be unrecognised and under-diagnosed for a variety of reasons. There is no accepted safe level of alcohol intake

in older people, but the effects of co-morbidity and medication may increase the risk of alcohol use and abuse in this population.

Unfortunately, there is no single screening test or tool that can be used to reliably detect alcohol abuse in older people across a range of settings (clinical and research) and populations (community, primary care, out-patients and in-patients). However, for rapid assessment in a clinical setting, the CAGE questionnaire with a cut off score of >=2 will effectively discriminate older patients with a history of drinking problems from those without such a history (sensitivity 70%, specificity 90%, positive predictive value 75% - see table 3).

Discussion

Alcohol abuse disorders are recognised as being important in the UK by both the health professions and the government. However, there is no agreement between the two on what measures are appropriate to combat alcohol abuse (Marmot 2004).

Alcohol abuse in older people is often associated with impairments in physical, psychological, social and cognitive well-being. The effects of co-morbidity, medication and age itself are likely to exacerbate the effects of alcohol, making it increasingly important that we improve our effectiveness at identifying and treating this under-detected and misdiagnosed problem.

Unfortunately, alcohol abuse disorders have a multi-faceted presentation (physical, psychological, cognitive and social) and the prevalence varies according to the setting where the patient is seen (from 1-44%). Screening tools such as the CAGE questionnaire can be useful diagnostic aids, even though the latest evidence-based reviews cast doubt on the effectiveness of screening and brief interventions for alcohol abuse in the general population.

Recommendations

In the community, alcohol disorders in older people are common and likely to be identified opportunistically. In clinical practice, clinicians should also ask questions about quantity, frequency and drinking patterns (e.g. binge drinking) as well as specific questions about the effects and consequences of alcohol use. Any elderly-specific alcohol screen needs to include questions on physical, psychological, cognitive and social well-being. Patients identified may benefit from a brief intervention approach such as simple advice and education to the patient delivered by a health or social care professional.

In secondary care, alcohol abuse disorders have a higher prevalence and screening or case-finding may be viable. The CAGE questionnaire is quick and easy to administer and should be considered as an initial screen for those presenting with symptoms or signs suggestive of alcohol use disorder in the community and should be considered as part of the standard assessment of all those older people in secondary care (in-patients and out-patients) because of the higher prevalence of alcohol problems in these populations.

Many of the questionnaires and screening tools discussed in this review have been developed and validated in younger populations. Future clinical care and research must find ways of consistently recording and quantifying current and past alcohol intake levels. Recommended alcohol intake, screening instruments and diagnostic criteria need to be redefined in older people.

There is a clear need for high-quality prospective research in a UK setting to improve our understanding of the prevalence, presentation, diagnosis and treatment of alcohol abuse disorders in older people across the social and ethnic spectrum. Future research in this area will benefit from increased adherence to explicit methodological standards. Clinical trials (intervention studies) should be based on the accurate

Table 3 – Pooled comparison of screening tools for diagnosis of alcohol dependence and abuse

Screening Tool	Sensitivity %	Specificity %	Positive predictive value %	Reference (Setting)
CAGE				Aertgeerts et al 2004
Score 1	87	68	54	(all studies)
Score 2	71	90	75	
Score 3	42	97	87	
Score 4	20	99	92	
CAGE				Fiellin et al 2000
Score >=2	43-94			(primary care)
(63-70)*	70-97			
(82-91)*				
AUDIT				
Score >=8	33-96	70-97		
S-MAST				
Score >=2	21-100	77-85		
CAGE				Conigliaro et al 2000
Score >= 2	70	91	79	(older people - primary care)
MAST-G				
Score >=5	95	78	89	
AUDIT				
Score >=8	33-80	89-91	69	

Key

* subset scores for older patients in review

Abbreviations

CAGE = Cut, Annoyed, Guilty, Eye opener
MAST-G = Michigan Alcohol Screening Test - Geriatric
S-MAST = Short Michigan Alcohol Screening Test
AUDIT = Alcohol Use Disorder Identification Test

identification of patients with alcohol abuse disorders, offering them a clearly defined intervention which in turn, is linked to explicit outcome measures.
In the meantime information, support and advice may be helpful, particularly within a trusting therapeutic relationship. All those involved in caring for older people might usefully consider appropriate lifestyle advice to their patients or carers and be on the lookout for the multi-faceted symptoms and signs of alcohol abuse disorders in older people.

References

Aertgeerts, B., Buntinx F., & Kester A. 2004. The value of CAGE in screening for alcohol abuse and alcohol dependence in general clinical populations: a diagnostic meta-analysis. Journal of Clinical Epidemiology 57, 30-39..

Beich, A., Thorsen, T., & Rollnick, S. 2003. "Screening in brief intervention trials targeting excessive drinkers in general practice: systematic review and meta-analysis", British Medical Journal, 327, (7414), 536-542.

Cabinet Office, P. M. S. U. 2004. Alcohol harm reduction strategy for England.

Carrington Reid, M., Boutros, M.M., O'Connor, P.G., Cadarin A., & Concatom J. 2002. The health-related effects of alcohol use in older persons: A systematic review. Substance Abuse 23, 149-164.

Conigliaro, J, Kraemer K, & McNeil M. 2000. Screening and identification of older adults with alcohol problems in primary care. Journal of Geriatric Psychiatry and Neurology 13,106-114.

Fiellin, D.A., Reid, M.C., & O'Connor P.G. 2000. Screening for alcohol problems in primary care: a systematic review. Archives of internal medicine 160, 1977-1989. 10-7-2000.

Marmot, M. G. 2004. Evidence based policy or policy based evidence?
British Medical Journal, 328, (7445), 906-907.

O'Connell, H., Chin, A. V., Cunningham, C., & Lawlor, B. 2003. Alcohol use disorders in elderly people--redefining an age old problem in old age. British Medical Journal, 327, (7416), 664-667.

Plant, M. 2004. The alcohol harm reduction strategy for England, British Medical Journal, 328, (7445), 905-906.

Smith, R. 2004. Why are we complacent about alcohol? British Medical Journal, 328, (7441).

The Academy of Medical Sciences. 2004. Calling time: the nation's drinking as a major health issue. London.