Alcohol and Health: Current Evidence

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Screening and Brief Intervention for Risky Drinking in General Practice

National professional organizations recommend that primary care clinicians conduct alcohol screening and brief intervention. Although systematic reviews support the efficacy of brief intervention, questions remain about its benefit in routine primary care practice. To examine the efficiency of screening and the efficacy of subsequent counseling, researchers performed a systematic review and meta-analysis of 8 randomized clinical trials that used screening as a precursor to brief intervention for risky (but not dependent) drinkers.

In the studies examined, 9% of the adults screened drank risky amounts, and 3% received brief intervention (including physician feedback, information, and advice). The pooled reduction in absolute risk of drinking risky amounts was 10.5% (from 69% of patients drinking risky amounts to 57%). Based on this reduction, 10 risky drinkers would need brief intervention to yield 1 patient no longer drinking risky amounts. The authors also calculated that screening 1000 patients (and then conducting brief intervention with those screening positive) would yield 2 – 3 patients no longer drinking risky amounts.

Comments: This review raises a concern about the effort required to achieve a benefit from alcohol screening and intervention. However, as an editorialist points out, the small proportion of patients reported to have received brief intervention is overly pessimistic given that the research studies excluded many more patients than would be excluded from interventions in clinical practice. This review confirms what recent clinical trials suggest—brief intervention in primary care settings is efficacious for decreasing alcohol use by risky drinkers. And based on the reported number-needed-to-treat, screening and intervention efforts appear to be at least as effective as other preventive health measures.

Richard Saitz, MD, MPH

References: Beich A, et al. Screening in brief intervention trials targeting excessive drinkers in general practice: systematic review and meta-analysis. *BMJ*. 2003;327(7414):536 – 542; Whitlock EP. Alcohol screening in primary care. *BMJ USA*. 2003;327(7429): E263 – E264.

Does Drinking Frequency—More than Average Consumption—Influence Mortality?

Volume of alcohol consumption impacts the risk of coronary heart disease, with moderate drinkers at lower risk than abstainers or heavy drinkers. The effects of drinking frequency and quantity consumed per drinking session on the risk of all-cause mortality and CHD are less clear. To investigate the contributions of alcohol consumption patterns on all-cause mortality and CHD, researchers analyzed self-reported drinking habits and CHD events (angina or fatal/non-fatal myocardial infarction) in 10,308 London-based civil servants who were followed for a median of 11 years.

The relationship between average alcohol consumption at baseline and all-cause mortality and CHD at follow-up was U-shaped (moderate consumption was associated with lowest mortality and CHD rates). In analyses adjusting for multiple risk factors (e.g., age, smoking) and average consumption, abstinence was associated with all-cause mortality (for men, RR 2.2; non-significant for women) and CHD (for men, RR 1.8; for women, RR 2). Drinking 2 or more times per day, compared to 1 – 2 times per week, was associated with all-cause mortality in both men and women (RR 2.4 and 7, respectively), but not associated with CHD. Usual amount consumed per drinking session was not associated with all-cause mortality or CHD.

Comments: Further study in similar cohorts may ultimately demonstrate drinking frequency as an independent predictor of all-cause mortality. However, this study's findings should be taken with caution because drinking frequency may have been inadequately separated from total volume of consumption in statistical analyses, especially in the higher frequency categories.

Peter Friedmann, MD, MPH

Reference: Britton A, et al. Different measures of alcohol consumption and risk of coronary heart disease and all-cause mortality: 11-year follow-up of the Whitehall II Cohort Study. *Addiction*. 2004;99:109 – 116.

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Primary Care Brief Intervention Works Equally Well For Women and Men

Previous meta-analyses have produced inconclusive results on whether brief intervention for excessive, non-dependent drinkers is equally effective in men and women. To clarify this issue among primary care patients, researchers in Spain performed a meta-analysis of randomized controlled trials of brief intervention in primary care settings that reported outcomes (i.e., alcohol consumption at 6- to 12-month follow-up) separately by sex.

Six trials including 1980 men and 1001 women were examined. Reductions in drinking associated with brief intervention were similar for both men and women. As assessed in 4 studies, brief intervention increased the odds of drinking below hazardous levels (defined variably in each study) for men (OR 2.3; 95% CI, 1.8 – 2.9) and women (OR 2.3; 95% CI, 1.6 – 3.2).

Comments: Equivalence is difficult to prove. However, the substantial overlap of the confidence intervals for both sexes in these high quality studies convincingly demonstrates that brief intervention moderates hazardous drinking equally well in men and women. More studies are needed to determine whether brief intervention works equally well for men and women of diverse ethnic, racial, and national backgrounds.

Peter Friedmann, MD, MPH

Reference: Ballesteros J, et al. Brief interventions for hazardous drinkers delivered in primary care are equally effective in men and women. *Addiction*. 2004;99:103 – 108.

Co-Occurring Conditions in Insured People with Alcohol and Other Drug Problems

Prior research on the prevalence of medical and psychiatric conditions in patients receiving treatment for alcohol and other drug problems has focused on inpatients and patients in publicly-funded programs. Much less is known about the prevalence of such problems in insured outpatients receiving treatment through managed care programs.

Using patient questionnaires and clinical records, this study compared the 12-month prevalence of medical and psychiatric conditions among 747 patients entering alcohol and/or drug treatment, and age- and sex-matched controls from the same large group-model health maintenance organization. Patients were young (mean age of 38), and 59% had alcohol dependence.

Compared with controls, patients with alcohol and/or other drug problems had a higher prevalence of the following (among others): depression (29% vs. 3%), headache (9% vs. 4%), anxiety (17% vs. 2%), asthma (7% vs. 3%), injury/overdoses (26% vs. 12%), hypertension (7% vs. 3%), major psychoses (7% vs. 0.4%), acid-related disorder (5% vs. 2%), lower back pain (11% vs. 6%), and arthritis (4% vs. 1%). Findings were similar among patients with alcohol dependence. Patients with alcohol dependence were also more likely than controls to have liver cirrhosis (1% vs. 0.1%).

Comments: In private managed care settings (as in other settings), common medical conditions are more prevalent among patients with alcohol and other drug problems. These findings support the practice of screening for substance abuse problems in medical clinics and for medical problems in substance abuse treatment programs. Private and managed-care substance abuse treatment programs should follow the lead of many publicly-funded treatment programs and address linkages to primary care services.

Kevin Kraemer, MD, MSc

Reference: Mertens JR, et al. Medical and psychiatric conditions of alcohol and drug treatment patients in an HMO. *Arch Intern Med*. 2003;163:2511 – 2517.

Comparison of Alcohol Screening Questionnaires for Women

Despite widespread agreement that primary care physicians should screen for alcohol problems, there is no consensus on the optimal screening test, especially for women. This study compared the performance of the 5-question TWEAK (*T*olerance, *W*orried, *E*ye-opener, *A*mnesia, *C*ut down), the 10-question AUDIT (*A*lcohol *U*se *D*isorders *I*dentification *T*est), and the 3 consumption questions from the AUDIT (AUDIT-C) to an interview reference standard in 393 female veteran outpatients.

Of the veterans, 23% met criteria for hazardous drinking (i.e., amounts that placed them at risk for consequences) and/or for alcohol abuse or dependence. Ten percent met criteria for active alcohol abuse or dependence alone. At cutoffs that retained acceptable specificity for hazardous drinking and/or active alcohol abuse or dependence, the TWEAK identified 44% of patients (specificity of 89%); the AUDIT identified 70% at a cutoff of 3, well below the usually recommended score of 8 or greater (specificity of 86%); and the AUDIT-C detected 81% (specificity of 86%). At the same cutoffs for each test, sensitivity was greater for detecting active alcohol abuse or dependence than for detecting the whole spectrum including hazardous drinking, abuse, or dependence.

Comments: Of the 3 questionnaires tested, the AUDIT-C appears to be the best for detecting hazardous drinking and alcohol use disorders in women. Before its widespread use can be recommended, these findings need to be replicated in other patient populations (e.g., men, non-veterans). With replicated validation, the AUDIT-C will have a notable advantage (its brevity) over the other tests, and therefore may help solve the greatest deficiency in screening in current practice—the failure to use any validated questionnaire to screen at all.

Joseph Conigliaro, MD, MPH

Reference: Bush KR, et al. The TWEAK is weak for alcohol screening among female veterans affairs outpatients. *Alcohol Clin Exp Res*. 2003;27(12):1971 – 1978.

Evidence for Effectiveness of Brief Alcohol Intervention in Hospitals

Brief counseling for alcohol problems is efficacious in primary care settings. However, few studies have tested its efficacy in hospitals, where alcohol use disorders are even more prevalent. Dutch researchers systematically reviewed the literature to summarize the results of relevant controlled trials of brief intervention conducted in general hospitals.

Researchers identified 8 studies that compared the effects of brief intervention to usual care in 1597 men and women. Two of the studies were conducted with hospital outpatients while 6 were with inpatients on orthopedics, medicine, and surgery services for various reasons (from elective to more urgent). Brief interventions ranged from education to simple advice to counseling (or a combination of these) and were associated with decreases in alcohol-related problems in 4 of 6 studies; a decrease in consumption in only 1 study (which was of outpatients) of 7 studies; and significant decreases in serum gamma-glutamyltransferase levels in 2 of 4 studies.

Comments: The fact that any benefits were detected in these studies—given their diverse settings, intervention content, and subjects whose clinical conditions varied in nature and urgency—is impressive. It is also notable that the review did not include studies of hospital trauma centers, where intervention is known to be effective. Nonetheless, this review points out that universal screening and intervention for all general hospital inpatients may be effective, but the evidence is inconclusive.

Richard Saitz, MD, MPH

Reference: Emmen MJ, et al. Effectiveness of opportunistic brief interventions for problem drinking in a general hospital setting: systematic review. *BMJ*. 2004;328(7435):318.

People with Social Anxiety Drink to Cope

People with social anxiety are twice as likely as the general population to have an alcohol use disorder. Several hypotheses that try to account for this association suggest that people with social anxiety drink more than others to reduce their anxiety. Over time, this self-medication may lead to dependence. No study, however, has investigated whether people who are socially anxious are more likely to drink to cope with their social fears than are controls without anxiety.

This study compared 23 patients with high social anxiety with 23 matched controls without social anxiety. Participants were asked via questionnaire about their alcohol use in social situations. Compared with controls, the group with social anxiety was significantly more likely to report using alcohol to feel more comfortable before (74% vs. 39%) and during (87% vs. 61%) social situations; avoiding social situations at least some of the time if alcohol was unavailable before (47% vs. 0%) and during (55% vs. 7%) a social situation; and experiencing greater relief of anxiety from alcohol (mean 5.2 vs. 3.3, on a scale from 0 to 10).

Comments: This study confirms that people who are socially anxious intentionally drink alcohol to cope with their social fears and are able to endure social situations as a result of alcohol's anxiety-reducing effects. Although these data support the self-medication hypothesis, they do not explain whether the relationship between social anxiety and alcohol use is causally related to developing dependence. Nevertheless, the associations reported in this study are compelling for the primary care clinician who should consider social anxiety as a risk factor for alcohol problems.

Joseph Conigliaro, MD, MPH

Reference: Thomas, SE, et al. Drinking to cope in socially anxious individuals: a controlled study. *Alcohol Clin Exp Res*. 2003;27(12):1937 – 1943.

Pharmacotherapy for Sleep Problems in Patients Recovering from Alcoholism

Sleep disturbance is common among patients in recovery from alcoholism and can precipitate relapse. Little is known about how physicians currently manage sleep disturbance in these patients, although a spectrum of potential treatments is available. Researchers surveyed a random sample of physician members of the American Society of Addiction Medicine by mail (311 respondents; 62% response rate) to examine their use of pharmacotherapy for sleep disturbance among patients in early recovery from alcoholism.

Physicians reported that 65% of their patients in the first 3 months after detoxification had a sleep disturbance. Sixty-four percent of physicians had recommended a medication to at least 1 of these patients to improve sleep; however, only 22% offered medication to more than half of such patients. Trazodone was the most commonly chosen medication (38% of respondents), followed by antihistamines (12%), other sedating antidepressants (7%), nonbenzodiazepines (4%), and benzodiazepines (3%).

Comments: The authors accurately note that physicians' reluctance to offer pharmacotherapy for sleep disturbance following detoxification is consistent with the traditional view that patients in recovery should avoid medications. The key question of whether treatment of sleep disturbance in early recovery will lower the likelihood of recurrent drinking awaits empiric evaluation. Although this study has limitations (most significantly the use of self-reported physician practices), it does describe current practices of addiction experts in caring for sleep disturbance post-detoxification and highlights our limited understanding of pharmacotherapy's effectiveness for this condition.

Jeffrey Samet, MD, MA, MPH

Reference: Friedmann PD, et al. Treatment of sleep disturbance in alcohol recovery: a national survey of addiction medicine physicians. *J Addict Dis.* 2003;22(2):91 – 103.

Physicians' Preferences for Reporting Alcohol-Impaired Drivers

Physicians are often asked to report patient health conditions that can affect the public's health and safety. However, they do not consistently report alcohol-impaired drivers who present after a motor vehicle crash. As a result, these unreported drivers do not face legal consequences for their risky behavior and may continue to endanger the public.

To examine physicians' attitudes about reporting alcohol-impaired drivers, researchers presented 3 clinical case scenarios in a questionnaire to physicians (including primary care physicians, emergency medicine physicians, and general surgeons) in Rhode Island. The scenarios involved treating an alcohol-impaired male driver who presents with minor injuries 1 hour after a motor vehicle crash and has 1 of 3 levels of intoxication: clinical diagnosis of intoxication, blood alcohol concentration (BAC) of 80 mg/dL, or BAC of 240 mg/dL.

Respondents (261, response rate of 49%) were more comfortable reporting the driver to a medical review board of the Department of Motor Vehicles (DMV) than to the police (66% vs. 36% if clinical diagnosis; 63% vs. 32% if BAC 80mg/dL; and 81% vs. 53% if BAC 240 mg/dL). The most common reasons for not reporting included physician-patient confidentiality and perceived threat of civil action. Comfort with reporting did not differ among specialties.

Comments: The results indicate physicians are willing to report alcohol-impaired drivers to authorities but prefer using a DMV medical board rather than the police. Reporting alcohol-impaired drivers may reduce alcohol-related motor vehicle crashes and injuries. Physician preferences should be heeded when reporting systems in clinical settings are developed and implemented.

Kevin Kraemer, MD, MSc

Reference: Mello MJ, et al. Physicians' attitudes regarding reporting alcohol-impaired drivers. *Subst Abus*. 2003;24(4):233 – 242.

Alcohol Dependence and Major Depressive Episodes in the General Population

Alcohol dependence (AD) and major depression often coexist. To examine the association between AD and major depressive episodes (MDEs) in the general population, researchers analyzed interview data from 72,940 people aged 12 and older who participated in the Canadian National Population Health Survey.

Of participants with MDEs, 9% had comorbid AD (compared to 2% without MDE). Of participants with AD, 20% reported having at least one MDE (compared to 4% without AD). In analyses adjusted for sex, educational level, and employment, researchers found the following: people under age 25 and those who were single, divorced, separated, or widowed were more likely to have both comorbid AD/MDE and pure AD; people with a low family income, living with a non-intact family (e.g., children living without 2 parents and any siblings), and non-whites were more likely to have comorbid AD/MDE but not pure AD; and immigrants were less likely to have comorbid AD/MDE or pure AD. Those with comorbidity were much more likely than those with pure AD to use mental health services in the past year (47% vs. 8%, respectively).

Comments: In addition to confirming that alcohol dependence and major depressive episodes often coexist, this study identified risk factors for comorbidity. These risk factors can help clinicians identify patients in greatest need of mental health services, and hopefully increase receipt of appropriate care.

Jeffrey Samet, MD, MA, MPH

Reference: Wang, JL, et al. Sociodemographic factors associated with comorbid major depressive episodes and alcohol dependence in the general population. *Can J Psychiatry*. 2004;49(1):37 – 44.

Effects of Alcohol Consumption During Pregnancy on Preterm Birth

While drinking alcohol during pregnancy can cause teratogenic effects, its relationship to preterm delivery, a main cause of neonatal morbidity and mortality, is unclear. To examine this relationship, researchers assessed 40,892 women in the Danish National Birth Cohort (a study of pregnant women and offspring) who completed a computer-assisted telephone interview while pregnant and gave birth to a liveborn singleton.

Of the births, 1,880 were preterm (<37 weeks gestation). In analyses adjusted for risk factors for preterm birth, women who drank 2 – 3.5 drinks per week during pregnancy significantly lowered their risk of preterm birth (relative risk 0.8) compared to abstainers. Those who drank 1.5 or fewer drinks per week lowered risk (e.g., RR 0.9 for 0.5 drinks per week), but not significantly, while those who drank 4 or more drinks per week increased risk (e.g., RR 1.8 for 7 or more drinks per week), but also not significantly. Consuming 1 or more drinks per week increased risk of very preterm birth (<32 weeks gestation) (e.g., RR 3.3 for 7 or more drinks per week), but not significantly. Type of alcoholic beverage was not associated with preterm birth.

Comments: While the increases in preterm birth associated with consuming 4 or more drinks per week were not statistically significant, they are consistent with findings from some previous studies. Because of the many adverse outcomes of heavy alcohol consumption—as well as an undetermined "safe" amount—during pregnancy, advising pregnant women to abstain remains the safest approach. However, patients who have an occasional drink during pregnancy may not be increasing their risk of preterm birth.

R. Curtis Ellison, MD

Reference: Albertsen K, et al. Alcohol consumption during pregnancy and the risk of preterm delivery. *Am J Epidemiol.* 2004;159(2):155 – 161.

Folate, Alcohol, and Cancer Risk

The associations between alcohol intake and certain cancers are well known, but complex. A recent review addressed the relationships between cancer risk, folate and other methyl-related nutrients (i.e., methionine, vitamin B6, and vitamin B12), alcohol, and a specific genetic polymorphism that affects folate metabolism (MTHFR 677C→T). The review found the following: women who drink alcohol and have a high folate intake are not at increased risk of breast cancer; diets low in methionine and folate but high in alcohol are associated with a higher risk of colorectal adenoma and cancer; and people with the MTHFR 677C→T polymorphism who have adequate folate intake may have a lower risk of colorectal cancer but are especially sensitive to alcohol's carcinogenic effects.

The author summarizes intake recommendations based on these conclusions, such as increasing intake of foods rich in folate (e.g., citrus fruits and juices, dark green leafy vegetables, dried beans and peas) and methionine (e.g., poultry, fish, low-fat dairy), and/or using folate supplements.

Comments: This exhaustive review of a complex area suggests that folate may reduce the risk of breast and colorectal cancer in people who drink alcohol. Fortification of foods has led to a decrease in the prevalence of inadequate folate intake. Still, for those who consume alcohol and have a diet low in methyl-related nutrients, it is reasonable to advise folate supplementation or increased consumption of foods rich in folate, methionine, vitamin B6, and vitamin B12. Because of possible folate toxicity, clinicians should recommend increased folate intake only to people with inadequate intake and, in particular, to those who also drink alcohol.

R. Curtis Ellison, MD

Reference: Bailey LB. Folate, methyl-related nutrients, alcohol, and the MTHFR 677C→T polymorphism affect cancer risk: intake recommendations. *J Nutr.* 2003;133:3748S – 3753S.

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