

Identification of Risky Alcohol Consumption in the Preoperative Assessment

Opportunity to Diagnose and Intervene

ALCOHOL abuse and dependence are important comorbidities that have a major impact on global health, accounting for up to 1.4% of the world's total disease burden (World Health Organization, 2003). *Alcohol abuse* is a distinct *Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition, diagnosis with a pattern of repeated alcohol-related consequences involving health, relationships, and the legal system, without evidence of addiction. In contrast to this, *alcohol-dependent* individuals not only experience these same consequences, but also show signs of addiction, including withdrawal symptoms, craving, and preoccupation with alcohol. A recent large epidemiologic study in the United States determined the prevalence of alcohol use disorders (AUDs), including alcohol abuse and dependence, to be 8.26%,¹ whereas in Europe, the prevalence is even greater (World Health Organization, 2004).² Given these data, the likelihood for anesthesiologists to encounter a patient preoperatively with an AUD is assured. In this issue of ANESTHESIOLOGY, Kip *et al.*³ provide insight into how to identify such individuals preoperatively where time is short and resources are limited. Their findings should prompt a reevaluation and potential overhaul of standard operating procedures for preoperative visits.

Using a brief questionnaire administered by computer in the preoperative setting, these investigators demonstrated that patients who met criteria for an AUD could be identified at a significantly greater rate than what could be determined in an anesthesiologist's standard preoperative assessment. The Alcohol Use Disorders Identification Test (AUDIT) was both embedded in the computer questionnaire and available to the anesthesiologists in the clinic. It is a 10-question survey developed to identify current unhealthy drinking habits that includes questions about quantity, frequency, and binge behavior, as well as symptoms of alcohol dependence, and has been validated in a variety of clinical settings.⁴ Although not precisely the same as a *Diagnostic and Statistical Manual of Mental Disorders* diagnosis of alcohol abuse or dependence, the sensitivity of the AUDIT

for the detection of AUDs ranges from 63% to 90%, with a specificity of 79% to 97%, depending on the subject's sex and clinical status, and the prevalence of alcohol abuse in the population.

Of what relevance is obtaining a history of an AUD to the practicing anesthesiologist? As Kip *et al.* aptly point out, the reasons are twofold. First, an accurate history of alcohol consumption helps to identify those at greatest risk for postoperative complications. Almost a decade ago, Tonneson and Kehlet⁵ reviewed the literature related to postoperative morbidity in alcohol abusers. In a combination of prospective and retrospective studies, increased morbidity among those with AUDs was observed after such diverse procedures as colonic surgery, prostatectomy, ankle surgery, subdural hematomas, upper gastrointestinal tract surgery, abdominal surgery, and hysterectomy. Separate studies in thoracic and vascular surgery patients have shown both increased morbidity⁶ and a higher rate of readmission to the intensive care unit among those who abuse alcohol.⁷ Postoperative morbidity among these patients with AUDs most commonly includes infections, but bleeding disorders, need for ventilator support, and cognitive dysfunction can also occur.^{5,7,8} One possible solution to limit postoperative morbidity in those with AUDs is a period of preoperative abstinence. A single study demonstrated reductions in postoperative morbidity among individuals with AUDs undergoing colonic surgery after a 4-week abstinence period,⁹ but no confirmatory studies in the literature exist to further advocate its use. In addition, implementation of such a change in practice would be difficult without cooperation from the patient and acceptance of procedure postponement by the surgeon. Nevertheless, knowledge regarding AUDs gleaned from a preoperative assessment would be useful for physicians caring for these patients to increase vigilance during the postoperative period and potentially avoid these complications.

Another reason anesthesiologists should be interested in accurate identification of AUDs is the potential they have to identify individuals with risky drinking habits, thereby facilitating modification of this behavior before the development of end-organ damage. Kip *et al.* demonstrated that it was more likely for anesthesiologists to identify patients older than 50 yr as having an AUD. Although helpful in predicting future postoperative morbidity, diagnosis of an AUD in an individual of advanced age could be much harder to remediate, and also may occur too late to prevent irreversible organ damage. A recent systematic review of randomized controlled trials

This Editorial View accompanies the following article: Kip MJ, Neumann T, Jugel C, Kleinwaechter R, Weiss-Gerlach E, Mac Guill M, Spies CD: New strategies to detect alcohol use disorders in the preoperative assessment clinic of a German university hospital. ANESTHESIOLOGY 2008; 109:171-9.

Accepted for publication May 5, 2008. The author is not supported by, nor maintains any financial interest in, any commercial activity that may be associated with the topic of this editorial.

and cost-efficacy studies related to alcohol screening and counseling was performed to assess their utility.¹⁰ Preventative services of this type were determined to be very high yield, with a cost-effectiveness ratio similar to what is observed in screening for colorectal cancer, hypertension, and influenza or pneumococcal vaccinations. Nevertheless, alcohol screening and counseling are not delivered at the same rate as these other services, possibly because of limited time and resources. Computer-based alcohol screening could improve the efficiency of alcohol screening in the preoperative population, and when patients with unhealthy alcohol use are identified, a brief intervention could potentially be performed in the same setting. Brief interventions are short counseling sessions designed to help patients reduce drinking and minimize alcohol-related problems.¹¹ One option in the preoperative setting might be a short statement of concern by the anesthesiologist that the patient's drinking exceeds recommended limits and may lead to future problems, with a recommendation to limit alcohol intake or stop drinking. A higher-level intervention might include two short sessions 1 month apart with a telephone call 2 weeks after each session. In a randomized clinical trial of this type of intervention following almost 800 subjects over a 4-yr time period, this style of brief intervention was found to be efficacious in the primary care setting, even when performed by those without specific training in addiction medicine.¹² Patients in the intervention group had a significant decrease in their alcohol use and fewer days in the hospital compared with the control group. No studies to date have investigated the utility of brief interventions in the preoperative population specifically, although one might postulate that an impending operation combined with the specter of potential postoperative morbidity would be a compelling reason for many to consider changing their alcohol consumption habits.

Certainly, in a busy clinical setting such as the preoperative evaluation clinic described in the work by Kip *et al.*, efficiency in screening and identifying those with unhealthy alcohol consumption is imperative. Traditional algorithms, such as those available to anesthesiologists working in their clinic, are frequently too cumbersome and time-consuming to use routinely, reflected in the 100% nonadherence to an alcohol assessment algorithm (that included the AUDIT survey) by these anesthesiologists. Computerized assessments of alcohol consumption that decrease the amount of time for screening and potentially enhance the honesty of subjects' reporting were used as early as 1977.¹³ Using computer-based screening embedded with the AUDIT questionnaire im-

proved detection of AUDs in this study population, revealing a prevalence of AUDs more than twofold higher by computer assessment compared with the preoperative anesthesiologist's detection rate of 6.9%. Computer-based screening was also potentially more specific in detecting AUDs compared with the physician's assessment. It is unclear whether computer-based screening enhanced the validity of alcohol use history by subjects in this study. Approximately 20% of enrolled patients did not complete the computer survey and were not included in the analysis; these patients may have not wanted to share this part of their history with either the computer or the physician. Nevertheless, no study except this one has examined the utility of a computer-based assessment in identifying AUDs in a preoperative population. This work highlights the possibility for such a method to improve detection of AUDs preoperatively, and provides a potential venue to intervene and positively affect the health of these individuals.

Ellen L. Burnham, M.D., Division of Pulmonary Sciences and Critical Care Medicine, University of Colorado Health Sciences Center, Denver, Colorado. ellen.burnham@uchsc.edu

References

1. Grant BF, Dawson DA, Stinson FS, Chou SP, Dufour MC, Pickering RP: The 12-month prevalence and trends in DSM-IV alcohol abuse and dependence: United States, 1991-1992 and 2001-2002. *Drug Alcohol Depend* 2004; 74:223-34
2. Bloomfield K, Stockwell T, Gmel G, Rehn N: International comparisons of alcohol consumption. *Alcohol Res Health* 2003; 27:95-109
3. Kip MJ, Neumann T, Jugel C, Kleinwaechter R, Weiss-Gerlach E, Mac Guill M, Spies CD: New strategies to detect alcohol use disorders in the preoperative assessment clinic of a German university hospital. *ANESTHESIOLOGY* 2008; 109:171-9
4. Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M: Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption-II. *Addiction* 1993; 88:791-804
5. Tonnesen H, Kehlet H: Preoperative alcoholism and postoperative morbidity. *Br J Surg* 1999; 86:869-74
6. Paull DE, Updyke GM, Baumann MA, Chin HW, Little AG, Adebajo SA: Alcohol abuse predicts progression of disease and death in patients with lung cancer. *Ann Thorac Surg* 2005; 80:1033-9
7. Maxson PM, Schultz KL, Berge KH, Lange CM, Schroeder DR, Rummans TA: Probable alcohol abuse or dependence: A risk factor for intensive-care readmission in patients undergoing elective vascular and thoracic surgical procedures. *Mayo Perioperative Outcomes Group. Mayo Clin Proc* 1999; 74:448-53
8. Hudetz JA, Iqbal Z, Gandhi SD, Patterson KM, Hyde TF, Reddy DM, Hudetz AG, Wartier DC: Postoperative cognitive dysfunction in older patients with a history of alcohol abuse. *ANESTHESIOLOGY* 2007; 106:423-30
9. Tonnesen H, Rosenberg J, Nielsen HJ, Rasmussen V, Hauge C, Pedersen IK, Kehlet H: Effect of preoperative abstinence on poor postoperative outcome in alcohol misusers: Randomised controlled trial. *BMJ* 1999; 318:1311-6
10. Solberg LI, Maciosek MV, Edwards NM: Primary care intervention to reduce alcohol misuse ranking its health impact and cost effectiveness. *Am J Prev Med* 2008; 34:143-52
11. Fleming MF: Screening and brief interventions in primary care settings. *Alc Res Health* 2005; 28:57-62
12. Fleming MF, Mundt MP, French MT, Manwell LB, Stauffacher EA, Barry KL: Brief physician advice for problem drinkers: Long-term efficacy and benefit-cost analysis. *Alcohol Clin Exp Res* 2002; 26:36-43
13. Lucas RW, Mullin PJ, Luna CB, McInroy DC: Psychiatrists and a computer as interrogators of patients with alcohol-related illnesses: A comparison. *Br J Psychiatry* 1977; 131:160-7