Commonwealth of Massachusetts
Board of Registration in Medicine
Quality and Patient Safety Division

Advisory
Alcohol Screening and Management Protocols
July 2013

Background

The Quality and Patient Safety Division (QPSD) has received a number of Safety and Quality Review (SQR) reports of patient complications associated with pre-existing alcohol use. This advisory is issued to share some of the lessons learned by the reporting health care facilities, and to support health care facilities in the review and development of their protocols for assessing and managing patients with alcohol abuse and dependency. While some references are provided, this advisory does not include a comprehensive review of the literature; nor is it intended to provide specific recommendations for evidence-based practice.

Overview

An estimated 25% of US adults use alcohol at a hazardous or high-risk level, with 4% of the population dependent on alcohol.[1] Alcohol abuse and dependence are found in 10% to 40% of patients admitted to intensive care units.[2] In patients undergoing elective surgery, alcohol use is associated with increased risks for post-operative pneumonia, sepsis, bleeding, surgical site infections, wound disruptions and prolonged length of stay.[3,4]

Patients with chronic or binge alcohol use are at risk for alcohol withdrawal syndrome (AWS), with effects ranging from anxiety to delirium tremens (DTs) to seizures. Alcohol withdrawal seizures may

[1] Higgins-Biddle J et al. Screening and Brief Interventions (SBI) for Unhealthy Alcohol Use: A Step-By-Step Implementation Guide for Trauma Centers. 2009. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

[2] Tetrault, JM et al. Substance Abuse and Withdrawal in the Critical Care Setting. Crit Care Clin 2008; 24:767–788.

[3] Nath, B et al. Alcohol Exposure as a Risk Factor for Adverse Outcomes in Elective Surgery. J Gastrointest Surg 2010; 14:1732–1741.

[4] Genther, DJ et al. The Effect of Alcohol Abuse and Alcohol Withdrawal on Short-Term Outcomes and Cost of Care After Head and Neck Cancer Surgery. Laryngoscope 2012; 122:1739–1747.

arise within 12–48 hours after decreased alcohol intake.[5] Patients who have previously had seizures due to alcohol withdrawal may be at much higher risk of recurrence, a process known as kindling.[6] Timely and accurate identification of at-risk patients can allow for the implementation of management protocols to minimize symptoms and prevent seizures.

Case Examples

Case One: A patient with multiple co-morbidities was admitted for elective joint replacement, reporting a daily consumption of four mixed drinks. The evening after an uneventful surgery, the patient exhibited tremors and confusion. The medical consult team initiated the CIWA protocol (Clinical Institute Withdrawal Assessment) the morning of POD#1. The patient had been started on Coumadin post-operatively. On POD#9, the patient had an episode of coffee ground emesis. His INR was 4.0 and the Coumadin was discontinued. Later that day he vomited, became apneic and went into ventricular tachycardia.

Lessons Learned: With a clear history of active alcohol use, an alcohol withdrawal protocol should be initiated upon admission. Early awareness of the patient's history by the surgeon, primary care provider and anesthesiologist may provide an opportunity to suggest abstinence prior to elective surgery. Peri-operative medical management may reduce the post-operative complication risk. Chronic alcohol use may increase or decrease the effect of anticoagulation and an INR should be checked daily. Chronic alcohol use and complications such as GI bleeds increase the risk for vomiting and aspiration.

Case Two: A patient was admitted for an elective cardiac surgery. The patient had a possible history of excessive alcohol consumption. Post-operatively the patient became agitated and confused, requiring Ativan, Haldol IV and a 1:1 sitter. A sternal wound infection was noted on POD#5, delaying the patient's discharge.

Lessons learned: An initial absence of alcohol withdrawal symptoms is not predictive of the post-operative course. A more comprehensive review of a patient's recent and chronic alcohol use may help to guide prophylactic alcohol withdrawal management. It was unclear if the significant level of post-operative agitation played a role in the subsequent sternal wound infection, but earlier initiation of an alcohol withdrawal protocol may have been beneficial.

Case Three: A patient with a recent MI presented to the ED; he reported drinking up to five alcoholic drinks on weekends. The CIWA score in the ED did not indicate the need for treatment. The patient was found to have a pericardial effusion; during pericardiocentesis he had a generalized tonic/clonic seizure, without a preceding arrhythmia. The patient's family later reported that he was a heavier drinker than he had indicated and had not had any alcohol for three days prior to the ED visit.

[5] Sarff, M et al. Alcohol withdrawal syndromes in the intensive care unit. Crit Care Med 2010; 38(9) (Suppl.).

[6] Becker, H. Kindling in alcohol withdrawal. Alcohol Health & Research World 1998; 22(1):25-33.

Lessons Learned: A more detailed history of alcohol use and past episodes of withdrawal or seizures may have identified the patient's high risk status. A significant risk or history of withdrawal or seizures should prompt prophylactic treatment regardless of CIWA score.

Areas for Health Care Facility Systems Review

The areas described below provide references, as support for internal discussion and review of health care facility alcohol screening and management protocols.

Screening for alcohol abuse and/or dependence

- Barriers to screening for alcohol abuse by primary care providers in the pre-operative setting may include fear of infringing on patient rights or harming the relationship with the patient.[7] Other health care providers may have similar barriers and biases. Screening and management protocols should account for these factors.

- Health care providers may not consistently or effectively use validated screening tools. For example, in one study, during pre-operative assessments, anesthesiologists identified alcohol abuse in 6.9% of the patients compared to the 18.1% prevalence rate detected by a computer-generated screening program conducted with the same patients.[8]

- Developing a multi-disciplinary planning team for alcohol abuse/dependence screening and management may improve effective implementation.[9] Systems for screening tools, follow up questions for positive screening results, and management protocols should be selected and designed to work together. For example, the information elicited by a nurse in the ED should be communicated effectively to an admitting hospitalist, so that appropriate management plans are developed and implemented in a timely manner. Periodic audits for consistency of assessments can identify opportunities for education and improvement.

- The National Institute on Alcohol Abuse and Alcoholism, US Preventive Services Task Force, World Health Organization and the Centers for Disease Control and Prevention have publications that review and compare various alcohol consumption screening tools.[10,11,12,13] The

[7] Tønnesen, H et al. Risk reduction before surgery. The role of the primary care provider in preoperative smoking and alcohol cessation. BMC Health Services Research 2010; 10(121).

[8] Kip MJ et al. New Strategies to Detect Alcohol Use Disorders in the Preoperative Assessment Clinic of a German University Hospital. Anesthesiology 2008; 109(2):171-179.

[9] Higgins-Biddle, op cit.

[10] National Institute on Alcohol Abuse and Alcoholism. Alcohol Alert: Screening for alcohol use and alcohol-related problems. 2005. No.65. Accessed 4/9/13 at http://www.niaaa.nih.gov

[11] Screening and Behavioral Counseling Interventions in Primary Care to Reduce Alcohol Misuse: Recommendation Statement. U.S. Preventive Services Task Force, Clinical Guidelines, Ann Intern Med. 2004;140:554-556. http://annals.org/article.aspx?articleid=717332

presence of alcohol abuse/dependence, history of AWS, DTs and/or seizures, and recent changes in alcohol consumption are examples of important admission and pre-operative information.

- Screening, Brief Intervention, and Referral to Treatment (SBIRT) is a comprehensive approach to alcohol, substance and tobacco abuse. The purpose of SBIRT is to increase the person's awareness of his or her alcohol use and its consequences and then motivate the person to either reduce risky drinking or seek treatment, if needed.[14] Linking patients to treatment options may reduce their alcohol intake and help to prevent unnecessary admissions and visits to the emergency department.[15] SBIRT may be implemented in the ED, inpatient unit or primary care setting.

Increased risk for seizures and other complications

- The Clinical Institute Withdrawal Assessment - Alcohol (CIWA-A) and a shortened version, the CIWA-A revised (CIWA-Ar) are the best known, most widely used, and most extensively studied scales.[16] High scores on the CIWA-Ar can indicate both severe withdrawal and the potential for the development of seizures and delirium.[17]

- Aggressive treatment should be considered for patients who are experiencing even mild withdrawal symptoms, to prevent the increase in severity of subsequent withdrawal episodes (kindling). [18]

- Approximately 5% of patients experiencing alcohol withdrawal develop DTs. Risk factors include previous episodes of DTs, chronic alcohol abuse, age greater than 30 years, and length of time

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[12] Babor, TF et al. The Alcohol Use Disorders Identification Test. Guidelines for use in primary care, second edition. World Health Organization. 2001.

[13] Higgins-Biddle, op cit.

[14] American Public Health Association and Education Development Center, Inc. (2008). Alcohol screening and brief intervention: A guide for public health practitioners. Washington DC: National Highway Traffic Safety Administration, U.S. Department of Transportation.

[15] Madras, BK et al. Screening, brief interventions, referral to treatment (SBIRT) for illicit drug and alcohol use at multiple healthcare sites: Comparison at intake and six months. Drug Alcohol Depend 2009; 99(1-3):280–295.

[16] Sarff, op cit.

[17] Shulman, GD et al, ed. ASAM Patient Placement Criteria: supplement on pharmacotherapies for alcohol use disorders. 2010. ISBN 9780781791229.

[18] Becker, op cit.

since last drink. DTs have a 5% to 15% mortality rate, and death is often caused by arrhythmias or associated critical illness, for example, pneumonia. [19]

- Chronic and acute alcohol use can alter the metabolism of medications, leading to greater or lesser effects.[20] Adverse events can be decreased through careful review of inpatient and outpatient medications and their potential interactions with alcohol.

Alcohol withdrawal management and protocols

- Pre-operative abstinence can reduce overall complications.[21] Hospitals are encouraged to enhance communication between surgeons, primary care providers and patients about the benefits of reducing or eliminating alcohol consumption for several weeks prior to elective surgery.

- Mild-moderate alcohol withdrawal management can involve symptom-based or fixed schedule administration of long-acting benzodiazepines.[22] Using a symptom-based approach has been shown to result in fewer patients requiring treatment, lower total doses of medication and shorter duration of treatment.[23,24]

- The *consistent* application of a management protocol by the nursing staff is crucial for minimizing the occurrence of AWS and DTs. The use of a symptom-driven protocol, e.g. CIWA-Ar, requires subjective scoring and dose adjustments, and may result in more protocol errors than a fixed protocol.[25] The CIWA-Ar relies on autonomic signs and subjective symptoms, so the presence of other acute illnesses may contribute to increased CIWA-Ar scores unrelated to alcohol withdrawal. Errors may include the frequency of assessments, subjective application of criteria, or the administration of the incorrect dosage of medication. Regular training, refresher in-services about AWS and complications, and audits of scoring are recommended.

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[19] Tetrault, op cit.

[20] Weathermon, R et al. Alcohol and medication interactions. Alcohol Research & Health 1999; 2(1):40-54.

[21] Oppedal, K et al. Preoperative alcohol cessation prior to elective surgery (review). The Cochrane Library. 2012; 7:1-37.

[22] Amato, L. et al. Benzodiazepines for alcohol withdrawal (Review). The Cochrane Library 2010; 3:1-105.

[23] Daeppen, JB et al. Symptom-triggered vs. fixed-schedule doses of benzodiazepine for alcohol withdrawal. Arch Intern Med 2002; 162:1117-1121.

[24] DeCarolis, DD et al. Symptom-Driven Lorazepam Protocol for Treatment of Severe Alcohol Withdrawal Delirium in the Intensive Care Unit. Pharmacotherapy 2007; 27(4):510–518.

[25] Weaver, MF et al. Alcohol Withdrawal Pharmacotherapy for Inpatients with Medical Comorbidity. Journal of Addictive Diseases 2006; 25(2).

- Wernicke-Korsakoff syndrome, most commonly caused by chronic alcohol abuse, includes acute and chronic manifestations of thiamine deficiency. Patients with a history of alcohol dependence should be evaluated for this disorder and appropriate thiamine replacement initiated.[26]

Discharge planning for medications, counseling, and identification at next admission

- Discharge medications may have unintended side effects or inadequate results if patients resume pre-admission alcohol use patterns. One study found that a significant number of outpatients used medications influenced by alcohol, while consuming three or more drinks in a day.[27] Consideration of a pharmacy consult for interactions of discharge medications with alcohol is recommended.

- Hospitals should consider discharge planning efforts aimed at consistent referral to outpatient treatment including counseling and medications, and follow up appointments with primary care providers. The SBIRT model is an example of potential options to consider.

- Clinically significant alcohol use and withdrawal events should be documented in a manner that informs clinical staff at subsequent admissions or emergency department visits. Relevant information should also be communicated with primary care providers.

Conclusion

Alcohol use, abuse and dependency is common in patients admitted acutely and for elective surgery. Early, consistent and effective screening should be conducted routinely in all areas of the hospital, with particular attention to any history of withdrawal, seizures or DTs. Alcohol withdrawal management protocols should be ordered promptly and nursing staff education should focus on their consistent and objective implementation to minimize withdrawal and improve patient safety. Clinical staff education on the phenomenon of kindling and alcohol withdrawal, and the identification of high risk patients are key components of risk reduction strategies. Inpatient and discharge medications should be reviewed routinely with the pharmacy for potential adverse effects. Patients having surgery should be advised of their increased risk of complications with alcohol use, with abstinence prior to surgery considered as a part of the pre-op recommendations.

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[26] Lingford-Hughes, AR et al. BAP updated guidelines: evidence-based guidelines for the pharmacological management of substance abuse, harmful use, addiction and comorbidity: recommendations from British Association for Psychopharmacology. J Psychopharmacology 2012; 26(7) 899–952. Accessed 4/29/13 at http://jop.sagepub.com/content/26/7/899

[27] Jalbert, JJ et al. A profile of Concurrent Alcohol and Alcohol-Interactive Prescription Drug Use in the US Population. J Gen Intern Med 2008; 23(9): 1318–1323.

Additional resources and references

American College of Surgeons Committee on Trauma et al. Alcohol screening and brief intervention (SBI) for trauma patients. COT Quick Guide.

American Society of Addiction Medicine (ASAM) http://www.asam.org/

Hasin, D et al. Prevalence, correlates, disability, and comorbidity of DSM-IV alcohol abuse and dependence in the United States. Arch Gen Psychiatry 2007; 64(7):830-842.

Mattila, MJ. Alcohol and drug interactions. Annals of Medicine 1990; 22(5):363-369.

National Institute on Alcohol Abuse and Alcoholism (NIAAA) www.niaaa.nih.gov/

Substance Abuse and Mental Health Services Administration (SAMHSA) http://www.samhsa.gov/

Substance Abuse and Mental Health Services Administration. Results from the 2008 National Survey on Drug Use and Health: National Findings. Accessed on 4/17/13 at www.samhsa.gov/data/nsduh/2k8nsduh/2k8results.pdf