Chapter 43
Substance Abuse and Dependence

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BACKGROUND

Substance abuse and dependence pose several risks in the perioperative setting. For example, excessive alcohol use increases the risk of morbidity during surgery—including cardiopulmonary, infections, wound, bleeding, and neurologic complications [1]. Surgical patients who drink over four alcoholic drinks daily have a two- to threefold increased risk for postoperative complications when compared to patients who drink less than two drinks a day [3]. However, other than for alcohol, there are limited data for interventions to improve perioperative outcomes.

PREOPERATIVE EVALUATION

Patients should be assessed for substance abuse or dependence. There are various screening tools, including the AUDIT-C questionnaire, for alcohol abuse or dependence as shown in Table 43.1. Key points include:

- Higher scores on the AUDIT-C are associated with increases in postoperative complications [3, 4].
- In heavy alcohol users (five or more drinks a day), research demonstrated that 4 weeks of preoperative abstinence decreases the risk of postoperative complications [5].
- Acute withdrawal may contribute to postoperative morbidity and should be avoided if possible.

The use of illicit drugs is associated with pulmonary and cardiac complications that may affect management in the perioperative setting [6]. Identifying patients who abuse illegal drugs can be screened effec-

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TABLE 43.1 SCREENING ASSESSMENT: AUDIT-C QUESTIONNAIRE [2]

Question 1: "How often did you have a drink containing alcohol in the past 12 months?"
Response (score): never (0), monthly or less (1), 2–4 times a month (2), 2–3 times a week (3), 4 or more a week (4)
Question 2: "How many drinks containing alcohol did you have on a typical day when you were drinking in the past 12 months?"
Response (score): 0 drink (0), 1–2 drinks (0), 3–4 drinks (1), 5–6 drinks (2), 7–9 drinks (3), and 10 or more (4)
Question 3: "How often did you have 6 or more drinks on an occasion in the past 12 months?"
Response (score): never (0), less than monthly (1), monthly (2), weekly (3), and daily (4)
AUDIT-C score is the sum of the points from each question (range 0–12 points)

tively using a single question: "How many times in the past year have you used an illegal drug or used a prescription medication for non-medical reasons?" In an urban primary care setting, this single screening question was 100 % sensitive and 73.5 % specific for the detection of a drug use disorder [7].

- An injection drug use history should prompt investigation for infectious or other complications.
- Active substance abuse or dependence identified during preoperative evaluation is an indication for referral to primary care and counseling or rehabilitation resources.

PERIOPERATIVE MANAGEMENT

Patients at risk for withdrawal during preoperative evaluation should have appropriate measures taken in the postoperative setting. Consideration of withdrawal syndromes is part of a full assessment of delirium in the postoperative setting (see Chap. 46). In some cases, patients have undergone emergency surgery and are unable to provide a history—additional information regarding substance use may need to be obtained from other sources. Patients identified with substance abuse or dependence should be referred to appropriate rehabilitation services. Withdrawal management strategies for specific substances are summarized below [8].

ALCOHOL

Withdrawal Signs and Symptoms

- Acute alcohol withdrawal generally starts 6 to 24 h after the patient takes the last drink of alcohol.
- Signs and symptoms include: restlessness, agitation, anxiety, nausea, vomiting, tremor, increased blood pressure, hyperthermia, delusions, delirium, and seizures.

Withdrawal Management

- Monitoring and treatment use Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-Ar) paired with symptom-triggered use of benzodiazepines [9]

OPIOIDS

Withdrawal Signs and Symptoms

- Tachycardia, hypertension, hyperthermia, insomnia, enlarged pupils, diaphoresis, hyperreflexia, increased respiratory rate, abdominal cramps, nausea, vomiting, diarrhea, muscle pain, and anxiety

Withdrawal Management

- Consider monitoring and measuring opioid withdrawal using Subjective Opioid Withdrawal Scale (SOWS) and Objective Opioid Withdrawal Scale (OOWS) [10].
- The currently approved medications for management of opioid withdrawal include: methadone, clonidine, and buprenorphine. Consider consultation with a pharmacist for additional questions.

BENZODIAZEPINES AND OTHER SEDATIVE-HYPNOTICS

Withdrawal Signs and Symptoms

- Sleep disturbance, irritability, anxiety, panic attacks, tremors, nausea, vomiting, palpitations, headaches, potential delirium, and seizures

Withdrawal Management

- Current treatment recommendations are to begin a slow taper based on patient's assessed use of medications, consideration of switching to a benzodiazepine with a longer half-life (e.g., diazepam).
- In some cases phenobarbital substitution may be considered.

STIMULANTS (COCAINE AND AMPHETAMINES)

Withdrawal Signs and Symptoms

- Depression, insomnia, fatigue, anxiety, paranoia, and increased appetite

Withdrawal Management

- Withdrawal usually does not involve medical danger and management is based on patient symptoms.

MARIJUANA AND OTHER DRUGS CONTAINING THC-SUBSTANCES

Withdrawal Signs and Symptoms

- Irritability, aggression, depressed mood, restlessness, weight loss, headaches, sweating, fever, chills, and sweating

Withdrawal Management

- Withdrawal usually does not involve medical danger and management is based on patient symptoms.
- Evidence is limited on pharmacologic treatments for marijuana withdrawal.

REFERENCES

1. Tonnesen H, Kehlet H. Preoperative alcoholism and postoperative morbidity. Br J Surg. 1999;86:869–74.
2. Bush K, Kivlahan DR, McDonell MB, Fihn SD, Bradley KA. The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. Ambulatory Care Quality Improvement Project (ACQUIP). Alcohol Use Disorders Identification Test. Arch Intern Med. 1998;158:1789–95.
3. Bradley KA, Rubinsky AD, Sun H, Bryson CL, et al. Alcohol screening and risk of postoperative complications in male VA patients undergoing major non-cardiac surgery. J Gen Intern Med. 2011;26(2):162–9.
4. Rubinsky AD, et al. AUDIT-C alcohol screening results and postoperative inpatient health care use. J Am Coll Surg. 2012;214(3):296–305.
5. Tonnesen H, Rosenberg J, Nielsen H, et al. Effect of preoperative abstinence on poor postoperative in alcohol misusers: randomized controlled trial. BMJ. 1999;318(7194):1311–6.
6. Laine C, Williams SV, Wilson JF. In the clinic. Preoperative evaluation. Ann Intern Med. 2009;151(1):ITC1–15.
7. Smith PC, Schmidt SM, Allensworth-Davies D, Saitz R. A single-question screening test for drug use in primary care. Arch Intern Med. 2010;170(13):1155–60.
8. Center for Substance Abuse Treatment. Detoxification and Substance Abuse Treatment. Treatment Improvement Protocol (TIP) Series 45. DHHS Publication No. (SMA) 06-4131. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2006.
9. Mayo-Smith MF. Pharmacological management of alcohol withdrawal: a meta-analysis and evidence-based practice guideline. JAMA. 1997;278(2):144–51.
10. Handelsman L, et al. Two new rating scales for opiate withdrawal. Am J Drug Alcohol Abuse. 1987;13(3):293–308.