



SUBSTANCE AND OPIOID USE DISORDER TOPIC STUDY POINTS

Alcohol Use Disorder

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Key Elements

Emergency Department Treatment

- The emergency physician has several interventions to use for the treatment of patients with alcohol use disorder (AUD). Treatment can include 1) managing acute withdrawal and comorbid medical conditions; 2) addressing additional associated substance use or addressing mental health conditions; 3) referring to community-based support organizations; and, 4) prescribing appropriate anti-craving medications.

Alcohol Withdrawal Syndrome (AWS)

- AWS is a progressive, potentially lethal, and unpredictable condition with occasionally severe metabolic derangements (Table 1). Patients who present with AWS and a positive alcohol level are at risk for more severe withdrawal.

Table 1. Stages of Alcohol Withdrawal Syndrome

Stage	Timeframe (hours)	Signs and Symptoms
“The Shakes”	6-12	Restless, agitated, vomiting, tremulous, tachycardic, hypertensive
“Rum Fits”	12-36	Hallucinations (visual & auditory), paranoia, seizures
Delirium Tremens	24-73	Tachycardic, hypertensive, hyperthermic, delirious

Screening and Severity Tools

- There are several alcohol use disorder (AUD) screening tools, such as AUDIT-C (Alcohol Use Disorder Identification Test); CAGE (Cut down, Annoyed, Guilty, and Eye-opener); or, Single-Item Screening Question—Alcohol (SISQ-Alc).

- Universal screening of hospitalized patients shows that 11% of patients have moderate- or high-risk alcohol use.
- AWS severity and risk scales include:
 - [CIWA-Ar](#) (Clinical Institute Withdrawal Assessment for Alcohol-Revised)
 - SEWS (Severity Ethanol Withdrawal Scale)
 - [RASS](#) (Richmond Agitation Sedation Scale)
 - PAWSS (Prediction of Alcohol Withdrawal Severity Scale)
 - LARS (Luebeck Alcohol Withdrawal Risk Scale)
 - *Physicians should refer to the article for more information.*
- Patients with severe AWS require in-patient management (CIWA-Ar ≥ 19), especially if they are demonstrating a hyperadrenergic state. Pregnant patients should be considered for inpatient care (CIWA-Ar > 10).
- High-risk patients have previously had seizures or ICU admission. Other risk factors are age of 65 years or older, comorbid conditions, longer/heavier alcohol use, concomitant benzodiazepine use, and at least moderate AWS (CIWA-Ar ≥ 10 ; RASS ≥ 2) on presentation to the emergency department.

Treatment of AWS

- Certain patients should be treated before manifesting withdrawal symptoms, especially if a prolonged ED stay is anticipated. The Substance Abuse and Mental Health Services Administration (SAMHSA) recommends that high-risk AUD patients receive withdrawal prophylaxis, including patients who will be admitted to the hospital.
 - Commonly used oral agents for prophylaxis include: chlordiazepoxide (50-100mg), lorazepam (1-2 mg), and gabapentin (600-1,200 mg).
- The pharmacologic treatment of *mild* AWS is based on symptoms. Patients who are discharged from the ED should receive a bridging medication to transition them to a follow up appointment.
 - These patients should have a CIWA-Ar < 10 or a RASS of 0 or 1.
 - Mild AWS is often treated with diazepam (10 mg p.o. q6h x 4 doses, then prn) or lorazepam (0.5-1 mg p.o. q6h as needed).

In addition to the benzodiazepines mentioned above, carbamazepine or gabapentin are also appropriate choices.

- *Moderate* AWS is characterized by tachycardia, retching, and tremor.
 - CIWA-Ar score of 10-18 or RASS 2.
 - Benzodiazepines are the first-line treatment. Moderate AWS can be treated with diazepam (20 mg p.o. q2h x 3 doses, then as needed) or lorazepam (1-2 mg p.o. q2h as needed). Midazolam can be given intramuscularly (5-10 mg) initially followed by longer-acting medications.
 - Moderate to severe AWS can also be treated with phenobarbital. Phenobarbital should be restricted to hospital inpatient use only due to the potential for adverse effects.
- *Severe* AWS is characterized by psychomotor agitation, delirium, hallucinations, seizure, and autonomic hyperactivity.
 - CIWA-Ar ≥ 19 , may be impractical to use
 - Severe AWS can be treated with intravenous benzodiazepines such as diazepam (10 mg with escalating doses up to a total of 400mg) or lorazepam (2 mg). Repeat dosing might be as frequent as every 5-20 minutes. Dosing is highly variable and based on the clinical presentation.
 - Inadequate dosing is more common than underdosing.
 - Seizures are initially treated with benzodiazepines.
 - As noted previously, severe AWS can be treated additionally with phenobarbital. Doing so requires inpatient admission with close cardiorespiratory monitoring for the potential for impending respiratory failure requiring intubation.

Managing Cravings

- Medications to diminish cravings for alcohol should be considered for patients being discharged from the ED.
 - Naltrexone or NTX (Revia®, Vivitrol®), acamprosate (Campral®), and disulfiram (Antabuse®) are FDA-approved anti-craving medications.
 - Due to the potential for adverse effects, naltrexone and disulfiram are increasingly being discouraged and is contraindicated in medically comprised patients (e.g., cirrhosis).
 - Gabapentin (Neurontin®) and topiramate (Topamax®) are also used off-label.
 - NTX can be given in a daily oral form or a monthly depot extended-release IM injection.

Management of Alcohol Intoxication (AI)

- In most cases, AI is initially assessed for comorbid conditions or injuries, mental status impairment, initial vital signs, pulse oximetry, and finger stick blood glucose level. Other studies are only ordered as medically indicated.
 - For easily arousable, uncomplicated patients, a blood alcohol level (BAC) is not medically indicated.
- The routine use of intravenous fluids does not enhance the clearance of ethanol. Thiamine (IM) should be routinely given to patients who use alcohol daily.
 - Timing thiamine administration prior to glucose administration is unnecessary.
 - Glucose should be administered immediately in hypoglycemic patients.
- Agitation is common and is best treated first with de-escalation. If medications are required, the clinical context should be considered. IM midazolam works quicker than many medications. For AI patients who have received a sedating medication, oxygenation, ventilation, and mental status should be frequently monitored.
 - Commonly used combinations include:
 - IM midazolam (5 mg) or lorazepam (2 mg) with droperidol (5 mg)
 - Olanzapine (5 mg), or
 - Haloperidol (5 mg).
 - For violent patients, ketamine (4-5 mg/kg IM or 1-2 mg/kg IV) can be used.
- When ketamine is given to violently intoxicated patients, procedural sedation protocols should be used, especially to monitor for respiratory depression.
- In the absence of other medical indications and if the medications are used in recommended doses, an ECG is not required to address the risk of QTc prolongation.
- AUD can lead to metabolic derangements and nutritional deficiencies. Oral vitamin administration is reasonable, low-cost, and low-risk, although evidence to support routine vitamin administration is very limited. The routine use of intravenous fluids and multivitamins is not recommended.
- Hyponatremia can occur from beer potomania (beer is a hypotonic fluid), SIADH (syndrome of inappropriate antidiuretic hormone secretion), or cirrhosis. Hypokalemia and hypomagnesemia are common.
- Alcoholic ketoacidosis (AKA) results from fat breakdown in the absence of adequate dietary carbohydrate and protein. The treatment of AKA includes intravenous fluids, dextrose, vitamin supplementation, and electrolyte supplementation.
- Severe thiamine deficiency can cause Wernicke's encephalitis (WE) and, if untreated, Korsakoff syndrome (a memory disorder associated with amnesia, tremor, disorientation). WE is characterized by altered mental status, oculomotor dysfunction, and cerebellar ataxia. The treatment for WE is IV thiamine (500 mg). Again, if the patient is concurrently hypoglycemic, dextrose can be given immediately, even prior to thiamine administration.

- Evaluating seizures in patients with AUD is complicated by the differential diagnosis for withdrawal, intracranial hemorrhage, metabolic disturbances, or an underlying seizure disorder.
- Fetal alcohol syndrome should be discussed with pregnant patients with AI or AUD. In this setting, inpatient care or close outpatient follow-up care is needed. Pregnant patients with AWS should be considered for admission given the potential risk to the fetus resulting from either ongoing maternal alcohol use or alcohol withdrawal. Although benzodiazepines have teratogenic potential, they should be used in the setting of AWS in pregnancy. Untreated AWS can lead to placental abruption, preterm delivery, and fetal distress.

Emergency Department Interventions

- One option for identifying patients with AUD is the SBRIT approach (Screening, Brief Intervention, and Referral to Treatment). As the acronym implies, SBIRT includes a screening tool, a conversation with the patient about risky alcohol use, and referral (if appropriate). SBRIT appears to have a greater impact in the primary care setting than in the ED. SBIRT takes about 15-30 minutes and can be performed by many different types of providers. Referral to Mutual Help Organizations such as Alcoholics Anonymous should also occur.

Frequent Presentations

- A “frequent presenter” to the ED is often defined as 2-4 presentations in a 12-month period. Unfortunately, the ED is not the ideal environment for addressing complex social issues or many chronic medical issues affecting patients with AUD. Treatment plans should attempt to coordinate outpatient care for a patient’s medical and psychosocial needs.

Impaired Driving and Forensic Samples

- There is a tension for emergency physicians between protecting the public by reducing alcohol-related driving injuries/deaths and maintaining patient confidentiality. Reporting requirements vary by state, requiring physicians to use their judgment in many instances. Emergency physicians are encouraged to speak with institutional risk managers to align their clinical practice with local expectations, institutional standards, and state reporting requirements.
- Regarding obtaining blood samples for alcohol levels, when the patient can and does consent, a study can be obtained. When the patient is unable to consent, even with a court order, the physician should follow institutional policies or contact its legal representative.

Summary

When indicated, patients should be screened for AUD. When AUD is present, anti-craving medications can be used along with referral to community resources. Further intervention is determined by the clinical situation.

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