

# Navigating the Storm: Mastering Acute Alcohol Withdrawal in the Emergency Department

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# OBJECTIVES

- ▶ Understand the pathophysiology and clinical presentation of alcohol withdrawal.
- ▶ Identify high-risk patients and complications of alcohol withdrawal syndrome (AWS).
- ▶ Review evidence-based assessment tools for AWS.
- ▶ Learn effective management strategies, including pharmacologic and supportive care.

# Why Alcohol Withdrawal Matters



MEDICAL EMERGENCY



Prevalence: ~50% of heavy alcohol users develop withdrawal symptoms.



5-10% may progress to Delirium Tremens (DTs) if untreated.



Mortality: Untreated DTs have a mortality rate of 15-20%.



ED Challenges: Rapid identification and treatment are critical to prevent complications.

# Facts about Alcohol

- ▶ According to the 2023 National Survey on Drug Use and Health (NSDUH), 28.9 million people ages 12 and older (10.2% in this age group) had AUD in the past year.
- ▶ Among the estimated 28.9 million people ages 12 and older with past-year AUD in 2023, **only 1.9%** (or 554,000 people in this age group) received medication-assisted treatment (MAT) for AUD in the past year.

12 fl oz of regular beer = 8–10 fl oz of malt liquor or flavored malt beverages such as hard seltzer (shown in a 12 oz glass) = 5 fl oz of table wine = 3–4 fl oz of fortified wine (such as sherry or port; 3.5 oz shown) = 2–3 fl oz of cordial, liqueur, or aperitif (2.5 oz shown) = 1.5 fl oz of brandy or cognac (a single jigger) = 1.5 fl oz shot of distilled spirits (gin, rum, tequila, vodka, whiskey, etc.)



about 5% alcohol



about 7% alcohol



about 12% alcohol



about 17% alcohol



about 24% alcohol



about 40% alcohol




about 40% alcohol

*Each drink shown above represents one U.S. standard drink and has an equivalent amount (0.6 fluid ounces) of "pure" ethanol.*

# Pathophysiology of Alcohol Withdrawal

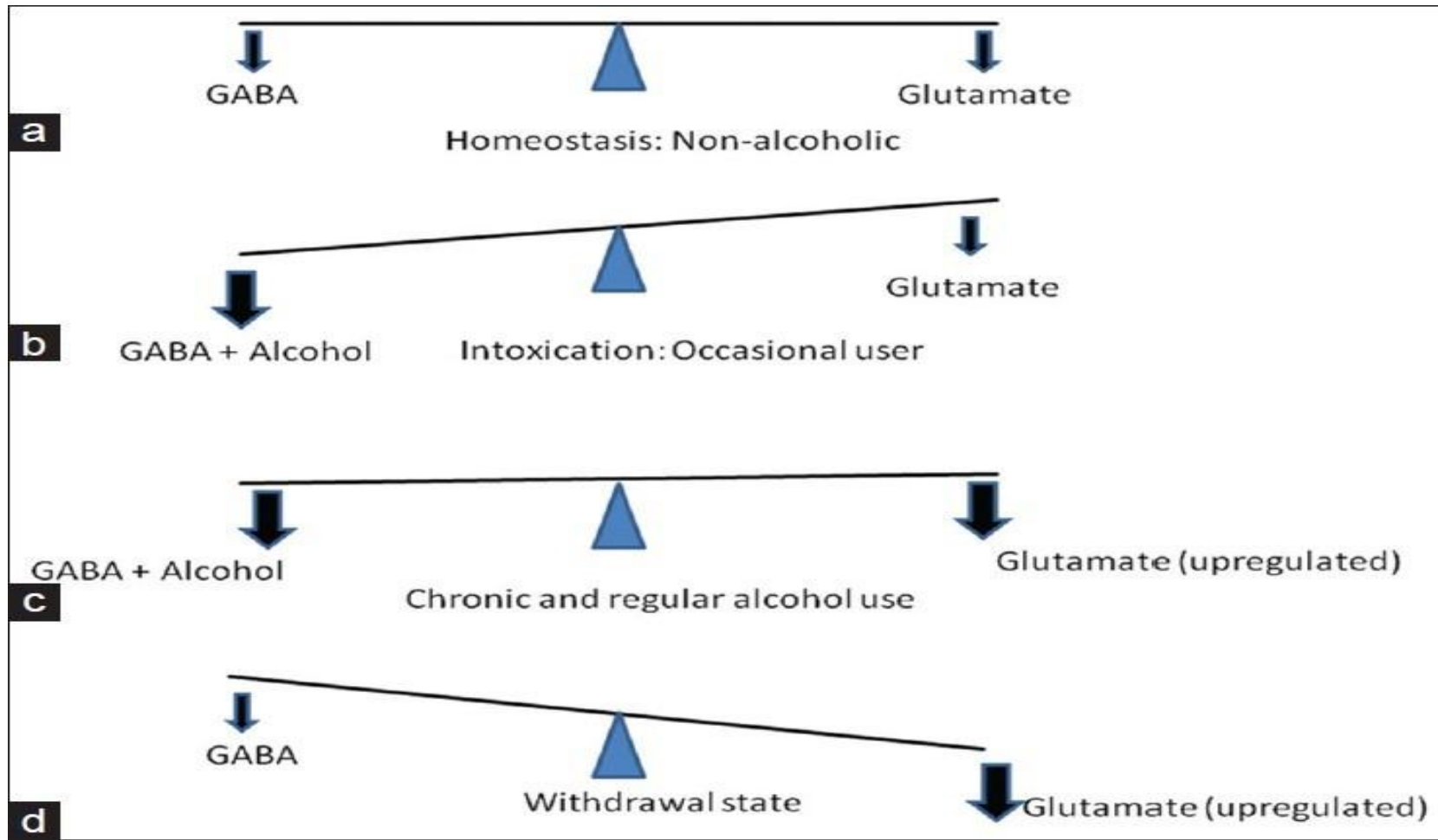
Chronic Alcohol Use: Enhances GABA (inhibitory neurotransmitter) activity. Suppresses glutamate (excitatory neurotransmitter).

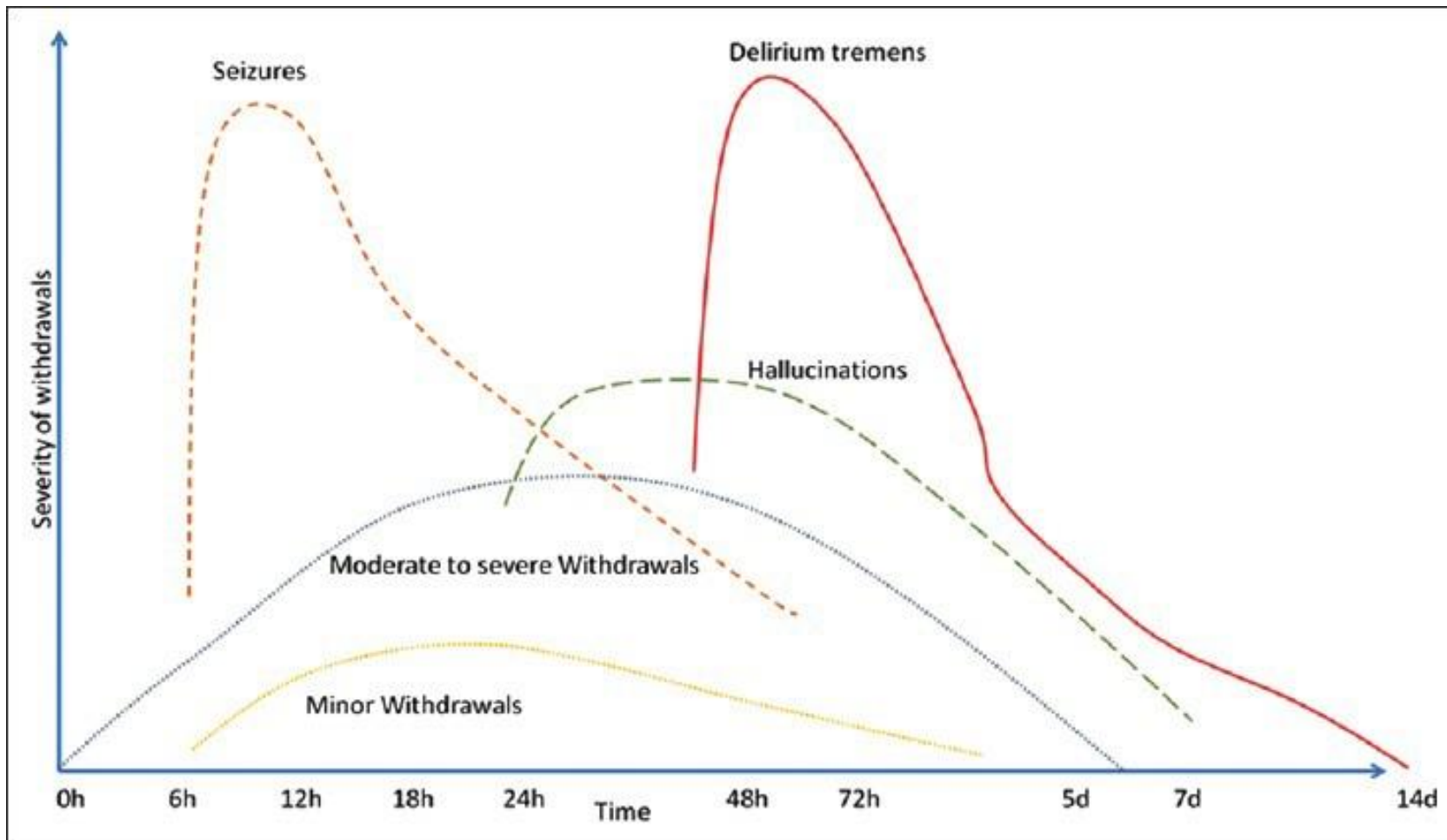


Withdrawal: Abrupt cessation leads to decreased GABA activity and unopposed glutamate action.



Result: Central nervous system (CNS) hyperexcitability.







# Uncomplicated vs Complicated Withdrawal

## **Uncomplicated** Withdrawal

- ▶ Early symptoms
  - ▶ Begin early in course of withdrawal
    - ▶ Anxiety, diaphoresis, nausea, vomiting, tremor, nystagmus

## ▶ **Complicated** Withdrawal


- ▶ **Lack of GABA**
- ▶ Generally, symptoms begin in 3-5 days
  - ▶ Autonomic hyperactivity - hypertension, tachycardia
  - ▶ Disorientation, paranoia, psychosis
- ▶ **Seizures peak < 24hrs**

# Stages of Alcohol Withdrawal

Mild Withdrawal (6-12 hours): Tremors, anxiety, nausea, insomnia, tachycardia.



Moderate Withdrawal (12-24 hours): Agitation, diaphoresis, hallucinations (often visual).



Severe Withdrawal (24-72 hours): Seizures (6-48 hours). Delirium Tremens (48-96 hours): Confusion, severe autonomic instability.



# Risk Factors for Severe Withdrawal

High Risk:

**History of withdrawal seizures or DTs.**

Long duration or high quantity of alcohol use.

Concurrent medical illnesses (e.g., infections, trauma).

Electrolyte imbalances (e.g., hypokalemia, hypomagnesemia).

# Case Introduction

**Scenario: 52-year-old male presents intoxicated - brought in by brother.**

+tremors, sweating, and confusion.  
Brother states drinking heavily for years and stopped abruptly 12 hours ago.  
Vitals: BP 158/92 mmHg, HR 122 bpm, Temp 100.4°F, RR 18/min.  
Question: What are your initial priorities in this patient's management?

# Immediate Priorities in the ED

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Stabilize the Patient: Airway, breathing, circulation (ABCs). - **No Obvious Signs of Trauma**

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Continuous monitoring of vitals, oxygenation, and **mental status**.

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IV Access and Labs: to do/ not to do? If withdrawal or suspected w/d **DO!**

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Labs: CBC, CMP, **magnesium, phosphorus**, glucose, **blood alcohol level (BAL)**

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Other: **Urine drug screen (Caution)** chest X-ray if suspected aspiration or pneumonia.

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Symptom Management: **Begin pharmacologic treatment for symptom control.**

# Assessing Alcohol Withdrawal

- ▶ Assessment Tools:
- ▶ Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar): 10-item scale assessing symptoms like tremors, agitation, nausea, and hallucinations.
- ▶ Mild: <8, Moderate: 8-15, Severe: >15. Prediction of Alcohol Withdrawal Severity Scale (PAWSS): Identifies patients at risk for severe withdrawal or DTs. Useful in the ED for risk stratification.

# BAL - Important Tips

- ▶ For a BAL of say 300; on average it will **drop 25 points an hour**
- ▶ A pt can times, admitted to Psychiatry for detox if the BAL is around 100 with no withdrawal symptoms- otherwise would be medical admit (could be ICU depending on complicated vs. uncomplicated withdrawal).
- ▶ The CIWA does not become relevant until the **BAL is around 100**. Few patients show any withdrawal symptoms when the BAL is high. Do not give Ativan until there are true w/d symptoms and you have labs to verify the Bal
- ▶ Too many times, patients request Ativan when their bal is still high. With the Ativan we don't know the true w/d symptoms.
- ▶ You could be seeing someone with their first withdrawal symptoms or seizures.

# Managing Delirium Tremens (DTs)

- ▶ Key Symptoms: Severe agitation, confusion, autonomic instability (e.g., tachycardia, hyperthermia).
- ▶ Treatment: High-dose benzodiazepines or phenobarbital if BZDs are insufficient.
- ▶ ICU admission for close monitoring and advanced care (e.g., sedation with propofol).



# Pharmacologic Management

- ▶ **First-Line: Benzodiazepines (BZDs)**
- ▶ Mechanism: Enhances GABA activity to reduce CNS hyperexcitability.
- ▶ Lorazepam: Preferred/ First line .
- ▶ Diazepam: Long-acting, effective for severe withdrawal (admitted patients)
- ▶ Chlordiazepoxide: Long-acting, preferred in mild/moderate cases.
- ▶ Symptom-Triggered Dosing:

**Doses administered based on CIWA-Ar scores to avoid overtreatment. Reduces total medication use compared to fixed dosing.**

# Adjunctive Therapies

- ▶ Thiamine (100 mg IV/IM): Prevents Wernicke's encephalopathy and Korsakoff syndrome.
- ▶ IV Fluids: Correct dehydration with isotonic fluids (e.g., normal saline).
- ▶ Electrolyte Replacement: Correct hypokalemia, hypomagnesemia, and hypophosphatemia.
- ▶ Clonidine or Dexmedetomidine (Adjunctive Use): Controls autonomic hyperactivity (e.g., tachycardia, hypertension).



# Non-Pharmacologic Care

- ▶ Environment: Quiet, low-stimulation setting to reduce agitation.
- ▶ Reassurance: Frequent reorientation and support for confused patients.
- ▶ Fall Prevention: Monitor closely to prevent injuries due to agitation or confusion.

# Disposition Planning

## ▶ Criteria for Admission:

Severe symptoms (CIWA-Ar >15), seizures, or DTs. Co-occurring conditions requiring close monitoring (e.g., infection, trauma).

Discharge: Mild symptoms with access to outpatient care. Ensure follow-up with primary care or addiction medicine.

# Preventing Readmissions

- ▶ Education: Discuss early signs of withdrawal and importance of medical follow-up
- ▶ Referral to Addiction Services: Facilitate connections to outpatient detox, counseling, or support groups (e.g., AA).
- ▶ Medication-Assisted Treatment (MAT): Consider initiating or referring for medications like naltrexone or acamprosate for long-term sobriety.

# NIAAA Single Question Screener

- ▶ How many times in the past year have you had 5 or more drinks in a day (♂)

or 4 or more drinks in a day (♀)?

**>0 is considered a positive screen.**

- ▶ Other screening tools:

Audit -C



## Case Resolution

- ▶ Progress: Patient stabilized with lorazepam symptom-triggered dosing.
- ▶ Thiamine and fluids administered.
- ▶ Admitted to telemetry for ongoing management.
- ▶ **Takeaway: Early intervention and symptom-based management prevented escalation to DTs.**

# Key Takeaways

- ▶ Alcohol withdrawal is a medical emergency requiring early recognition and treatment .
- ▶ Use validated tools like CIWA-Ar to guide symptom-triggered therapy.
- ▶ Benzodiazepines remain the cornerstone of treatment, with adjunctive care for complications.
- ▶ Prevent complications like seizures and Wernicke's encephalopathy through proactive measures.
- ▶ Disposition planning and follow-up care are critical for preventing recurrence.



# Questions and Discussion

- ▶ What challenges have you faced managing alcohol withdrawal in the ED?
- ▶ How does your institution use CIWA-Ar or similar protocols?

# References

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# Thank You

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