Tipsy to Tremulous

Managing Alcohol Intoxication and Withdrawal

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Disclosures

I have no pertinent disclosures.

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Objectives

At the end of this session, participants should be able to:

- Recognize co-existing, life-threatening disorders related to alcohol consumption
- Develop an approach to the evaluation of patients with alcohol intoxication and/or possible withdrawal
- Identify patients at risk for withdrawal, using tools such as the Clinical Institute Withdrawal Assessment for Alcohol Scale (CIWA-Ar)
- Determine treatment strategies for patients who would benefit from pharmacologic treatment
- Discuss disposition decision-making for the patient with problems related to alcohol use

Alcohol is Everywhere

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Binge Drinking 17%
Heavy Drinking 6%[1]

88,000+ deaths annually[2]

600,000 treated in EDs annually for EtOH intoxication[3]

One study found…

24% of adults brought to ED by EMS suffer from alcoholism[4]

21% of ICU admits at inner city hospital were alcohol-related[5]

15-40% of patients presenting to ED had EtOH on board[6]

All studies find…

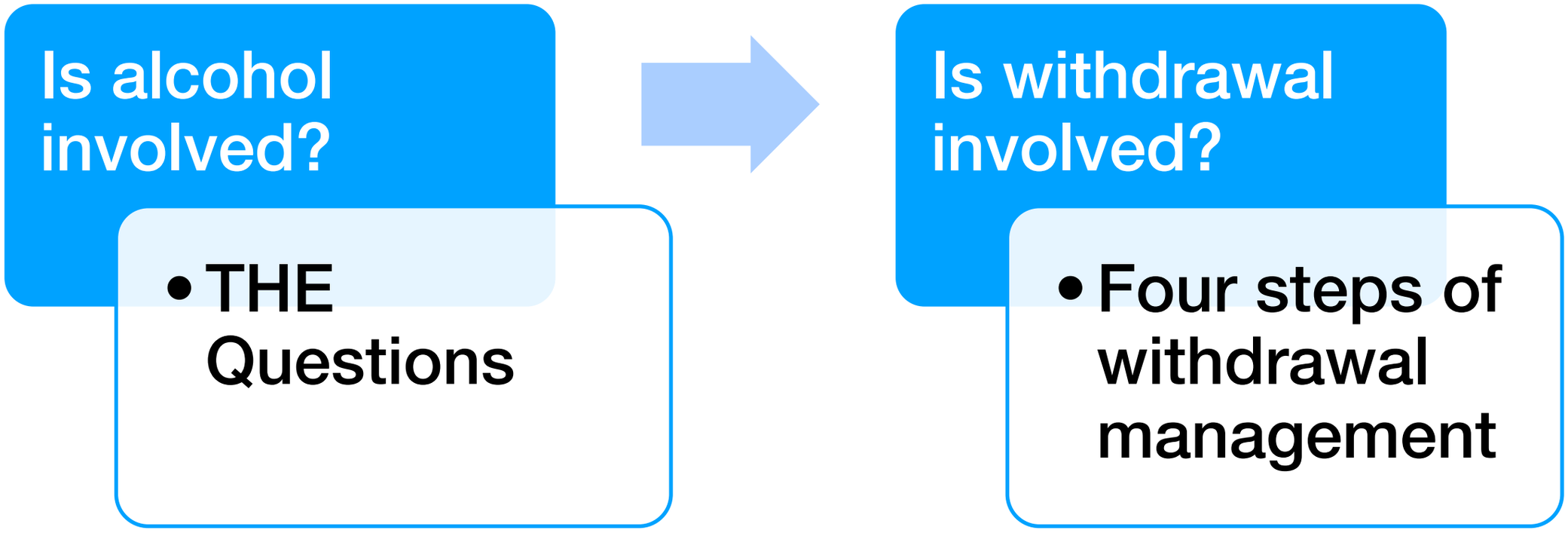
Increased morbidity and mortality

Excessive Alcohol Consumption (2010)[7]

$249 billion overall

$27.39 billion in health care expenses

The Approach



THE Questions

1. Is the patient ACTUALLY intoxicated?

2. Are there concomitant organic/other pathologies or problems?

3. Is the patient at risk of withdrawal complications?

THE Questions

1. Is the patient ACTUALLY intoxicated?

- History – EMS, PMH, Report of patient, family, co-ingestions

- Vital signs – ABCs, tachycardia, hypertension, respiratory rate, temp

- Exam - Evidence of trauma, other focal findings, complete exam

THE Questions

1. Is the patient ACTUALLY intoxicated?

- <u>Lab Studies</u> – If uncomplicated, likely unneeded. If a question/complicated: e*thanol level (can withdrawal at any level), glucose, +/- basic labs*, +/- EKG, Mg?, UDS?, others?

- <u>Imaging Studies</u> – low threshold, if indicated - trauma or altered. Consider head and c-spine imaging, decreased sensitivity of clinical decision-making tools

THE Questions

2. Are there concomitant organic/other pathologies or problems?

- Head Injury – Canadian CT Rule and NEXUS criteria not valid
- Wernicke's or other encephalopathy (hepatic)
- Electrolyte disturbances
- Blood sugar
- Infection
- Hypothermia
- Toxidromes
- Serotonin Syndrome
- Neuroleptic Malignant Syndrome
- Hypertensive Crises
- Thyrotoxicosis
- Other reason for altered mental status

THE Questions

2. Are there concomitant organic/other pathologies or problems?

Toxicologic	Alcohol intoxication Sympathomimetic intoxication Anticholinergic syndrome Sedative-hypnotic withdrawal Serotonin syndrome Neuroleptic malignant syndrome
Medical	Thyrotoxicosis Myocardial ischemia Pulmonary Embolism Meningitis/encephalitis Acute psychosis Hypoglycemia Head trauma Hepatic failure Gastritis - GI bleed Pancreatitis Sepsis and septic shock

THE Questions

3. Is the patient at risk of withdrawal complications?

- Level of intoxication
- History of alcohol abuse
- History of alcohol withdrawal
- Length of stay in the ED

Patient Presenting with Apparent Alcohol Withdrawal[8]

(EM Cases – Episode 87)

The ideal management of alcohol withdrawal involves 4 steps:

1. Identify which patients actually have alcohol withdrawal and require treatment.

2. Use a standardized, symptom guided approach to assess symptom severity and guide treatment.

3. Ensure that patients are fully treated prior to ED discharge.

4. Provide a pathway to support patients who are trying to quit.

1. Identify which patients actually have alcohol withdrawal and require treatment.

Timing of Withdrawal Symptoms

- Begin within 6-8 hours, peak at 72 hours, and diminish in 5-7 days.
- If patient's withdrawal does not progress, symptoms will typically resolve in 24-48 hours.
- Delirium tremens (DT) can occur from 3-12 days following abstinence.

It is important to recognize that a patient can have alcohol in their system and still be withdrawing.

Patients who have not had any withdrawal symptoms more than 24 hours after cessation are unlikely to develop such symptoms.

1. Identify which patients actually have alcohol withdrawal and require treatment.

<u>Alcohol withdrawal is a clinical diagnosis and one of exclusion</u>

Signs/Symptoms:

- Characteristic tremor
  - Constant intention tremor at 7-12 Hz - does not fade with time
  - Tongue tremor
- GI Upset
- Anxiety
- Nausea/Vomiting
- Diaphoresis
- Tachycardia
- Hypertension
- Headache

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1. Identify which patients actually have alcohol withdrawal and require treatment.

Alcohol hallucinations: Occur in 12-24 hours after last drink

- Occur in 7-8% of patients with AWS[9]
- Most commonly tactile (formications) but can also be visual
- Sensorium is otherwise normal – they are aware of hallucinations

1. Identify which patients actually have alcohol withdrawal and require treatment.

Withdrawal Seizures: Occur in 12-24 hours after last drink

- Generalized tonic-clonic seizures
- Generally mild – short duration, isolated, little post-ictal period
- Must consider other causes of seizures
- Higher likelihood of progression to DT – 1/3 will progress to DT[10]

1. Identify which patients actually have alcohol withdrawal and require treatment.

Delirium Tremens: Occur in 3-12 days after last drink

- Rapid onset, fluctuating disturbance of attention and cognition plus alcohol w/d symptoms and autonomic instability

- In patients hospitalized with withdrawal, 3-5% will have DT, 1-4% mortality rate for those patients[10]

- Typically last for 1-8 days

1. Identify which patients actually have alcohol withdrawal and require treatment.

Delirium Tremens: Risk Factors[11]

- History of previous DT
- History of sustained drinking
- CIWA scores > 15
- Patients with SBP > 150, or patients with HR greater than 100
- Recent withdrawal seizures
- Prior withdrawal delirium or seizures
- Older age
- Recent misuse of other depressants
- Concomitant medical problems

2. Use a standardized, symptom-guided approach to assess symptom severity and guide treatment.

<u>CIWA-Ar Protocol</u>

- 9-item scale
- Well-validated
- Not for use in patients with delirium tremens
- Assessed hourly
- Treat patient if score is greater than 10
- After two subsequent hourly scores of <10, patient considered for discharge

For all scales beware of limitations, contraindications, and possible false positives.

Clinical Institute Withdrawal Assessment Scale for Alcohol, Revised (CIWA-Ar)

- Nausea and Vomiting
- Paroxysmal Sweats
- Agitation
- Visual Disturbances
- Tremor
- Tactile Disturbances
- Headache
- Auditory Disturbances
- Orientation and Clouding of the Sensorium

The CIWA-Ar is not intended to be diagnostic, but rather to guide therapy.

Clinical Institute Withdrawal Assessment Scale for Alcohol, Revised (CIWA-Ar)

mdcalc.com/ciwa-ar-alcohol-withdrawal

Nausea and Vomiting
0 – No nausea or vomiting
1
2
3
4 – Intermittent nausea with dry heaves
5
6
7 – Constant nausea, frequent dry heaves and vomiting

Paroxysmal Sweats
0 – No sweat visible
1 – Barely perceptible sweating, palms moist
2
3
4 – Beads of sweat obvious on forehead
5
6
7 – Drenching sweats

Agitation
0 – Normal activity
1 – Somewhat more than normal activity
2
3
4 – Moderate fidgety and restless
5
6
7 – Paces back and forth during most of the interview or constantly thrashes about

Visual Disturbances
0 – Not present
1 – Very mild photosensitivity
2 – Mild photosensitivity
3 – Moderate photosensitivity
4 – Moderately severe visual hallucinations
5 – Severe visual hallucinations
6 – Extreme severe visual hallucinations
7 – Continuous visual hallucinations

Tremor
0 – No tremor
1 – Not visible, but can be felt at finger tips
2
3
4 – Moderate when patient's hands extended
5
6
7 – Severe, even with arms not extended

Tactile Disturbances
0 - None
1 – Very mild paraesthesias
2 – Mild paraesthesias
3 – Moderate paraesthesias
4 – Moderately severe hallucinations
5 – Severe hallucinations
6 – Extremely severe hallucinations
7 – Continuous hallucinations

Headache
0 – Not present
1 – Very mild
2 - Mild
3 - Moderate
4 – Moderately severe
5 - Severe
6 – Very severe
7 – Extremely severe

Auditory Disturbances
0 – Not present
1 – Very mild harshness or ability to frighten
2 – Mild harshness or ability to frighten
3 – Moderate harshness or ability to frighten
4 – Moderately severe hallucinations
5 – Severe hallucinations
6 – Extremely severe hallucinations
7 – Continuous hallucinations

Orientation and Clouding of the Sensorium
0 – Oriented and can do serial additions
1 – Cannot do serial additions
2 – Disoriented for date but not more than 2 calendar days
3 - Disoriented for date by more than 2 calendar days
4 – Disoriented for place/person

Cumulative scoring

Cumulative score	Approach
0 – 8	No medication needed
9 – 14	Medication is optional
15 – 20	Definitely needs medication
>20	Increased risk of complications

SHOT Protocol[12]

Sweating, Hallucinations, Orientation and Tremor

Sweating	0 –No visible sweating 1 –Palms moderately moist 2 –Visible beads of sweat on forehead
Hallucinations “Are you feeling, seeing, or hearing anything that is disturbing to you? Are you seeing or hearing things you know are not there?”	0 –No hallucinations 1 –Tactile hallucinations only 2 –Visual and/or auditory hallucinations
Orientation “What is the date, month, and year? Where are you? Who am I?”	0 –Oriented 1 –Disoriented to date by one month or more 2 –Disoriented to place or person
Tremor Extend arms and reach for object. Walk across hall (optional)	0 –No tremor 1 –Minimally visible tremor 2 –Mild tremor 3 –Moderate tremor 4 –Severe tremor

This scale is not yet validated.

Discontinue when score is 0 or 1 on two consecutive occasions. Consider treating if score ≥ 2.

Treatment

Pharmacologic Treatment of Patients with Alcohol Withdrawal

First line – Benzodiazepines

- ***Use oral benzos in stable patients with mild symptoms and who are not vomiting***
- IV formulations allow faster onset and easier titration in severe withdrawal (better manages higher risk of seizure)
    - Can start at 10mg IV and double dose Q 5min as needed
- Be aware of risk of respiratory depression

CIWA Score	Severity	Treatment
< 10	Mild	No treatment
10-20	Moderate	Diazepam 5-10 mg PO and assess response
> 20	Severe	Diazepam 10-20 mg IV and assess response

Pharmacologic Treatment of Patients with Alcohol Withdrawal

<u>First line – Benzodiazepines</u>

- ***Diazepam***
    - Long half-life (~100 hours)
    - Decreased risk of developing withdrawal symptoms once discharged
    - Faster onset than lorazepam (1-5 minutes)
    - Caution in patients with liver failure
- ***Lorazepam***
    - Short half-life (8-12 hours), slower onset (5-20 minutes)
    - Less hepatic risk, titrate slowly if encephalopathic
    - Risk of developing withdrawal symptoms once worn off

Pharmacologic Treatment of Patients with Alcohol Withdrawal

Overtreatment

Undertreatment

Airway Protection

Prolonged LOS

Encephalopathy

Poor Control/ Worsening of Symptoms

Risks with Co-Ingestion of Opioids

Risk of Progression to DTs

Sedation

Unnecessary Admit

Tolerance

Pharmacologic Treatment of Patients with Alcohol Withdrawal

Phenobarbital

- ***No evidence phenobarbital is better than benzodiazepines***
- May be considered after large doses of benzodiazepines have been given

Ketamine

- Single dose or as an adjunct

Librium (chlordiazepoxide)

- Only available PO
- Possible use in outpatient setting

Pharmacologic Treatment of Patients with Alcohol Withdrawal

Thiamine (Vitamin B1)

- Can give 100 mg IV initially (low risk, well tolerated)
- If concern for Wernicke's encephalopathy (nystagmus, ataxia, confusion) give higher dose (500 mg IV q8h)

Fluids

- Often patients are hypovolemic and hypoglycemic
- In these cases, give glucose-containing fluids
    - Glucose before thiamine - Theoretical risk of causing Wernicke's encephalopathy; Glucose and thiamine compete for the same co-factor
    - No evidence a single dose of glucose will cause this
    - Can give glucose at same time or after thiamine
    - Don't delay urgent glucose

Management of Specific Patients – Severe Alcohol Withdrawal

Agitated and Disoriented Patient

- Avoid antipsychotics like Haldol – can prolong QT and decrease seizure threshold
- Consider intubation with:
    - Airway concerns
    - Refractory seizures

Refractory Seizures

- Consider adjunctive medications
    - Propofol, phenobarbital, dexmedetomidine, ketamine
- In these cases, give glucose-containing fluids
    - Glucose before thiamine - Theoretical risk of causing Wernicke's encephalopathy

Activated Charcoal and Gastric Lavage

- Not helpful due to rapid absorption of alcohol

3. Ensure patients are fully treated prior to ED discharge.

- Treat in ED with longer acting benzodiazepines as indicated (diazepam 5-10mg PO) and reassess
    - CIWA-Ar score of ~10-20
- **It is not recommended to prescribe benzodiazepines for home use**
    - If adequately treated in ED, patients should be protected from developing serious symptoms
    - Risk of overdose, drug-seeking behavior, drug dependence

4. Provide a pathway to support for patients who are trying to quit.

- Vulnerable state

- Provide several options to the patient, as available (i.e., AA, local treatment programs)

- Consider sharing the following:

    1. You need help for your serious alcohol problem
    2. You can’t do it on your own
    3. There are effective treatments available to you
    4. With treatment the way you feel, your mood, social relationships and work will be profoundly better

Disposition

Patient Disposition
Discharge

- Patient not currently intoxicated (alcohol or other drugs)
- No history of complicated AWS (seizures, hallucinosis, DT)
- No significant medical or psychiatric comorbidities

With two successive CIWA-Ar scores <10 two hours apart, may consider discharge from ED, if:

- No concerning risks for deterioration
- Tremor should be minimal or resolved, regardless of CIWA-Ar score

Patient Disposition
Admission to Medical or Detox Unit

- Higher risk without underlying medical or surgical condition requiring ICU-level care
- Normalization or near-normalization of vitals in ED
- Clear sensorium
- Responsive to 10-20 mg diazepam
- Tolerates 2-4 hours between benzodiazepine doses
- Presence of medical or psychiatric condition requiring inpatient admission

PAWSS - Screens hospitalized patients for complicated alcohol withdrawal (seizures, delirium tremens)

Patient Disposition
Suggested ICU Admission Criteria

- Based on local protocols and a variety of factors, but, the following likely necessitate ICU admission:
    - Underlying medical or surgical condition that requires ICU-level care
    - Requires second-line therapy to control withdrawal (benzo-resistant)
    - Hyperthermia
    - Recurrent seizures
    - Severe altered mental status

Cases

Case 1

A 51-year-old man is brought to the ED by EMS. Paramedics report he was “found down” outside a local drug store. He appears clinically intoxicated and states his last drink was on the ride over in the ambulance. You recall seeing the patient with a similar presentation previously.

What is your approach to this patient?

THE Questions

1. Is the patient ACTUALLY intoxicated?

   - Appears to be – Communicative, although slurred speech and slightly unsteady gate

2. Are there concomitant organic/other pathologies or problems?

   - No – Exam and history do not indicate concomitant pathology(ies)

3. Is the patient at risk of withdrawal complications?

   - Perhaps, but not currently – History of heavy drinking, but no symptoms and no previous w/d or needed detox treatment

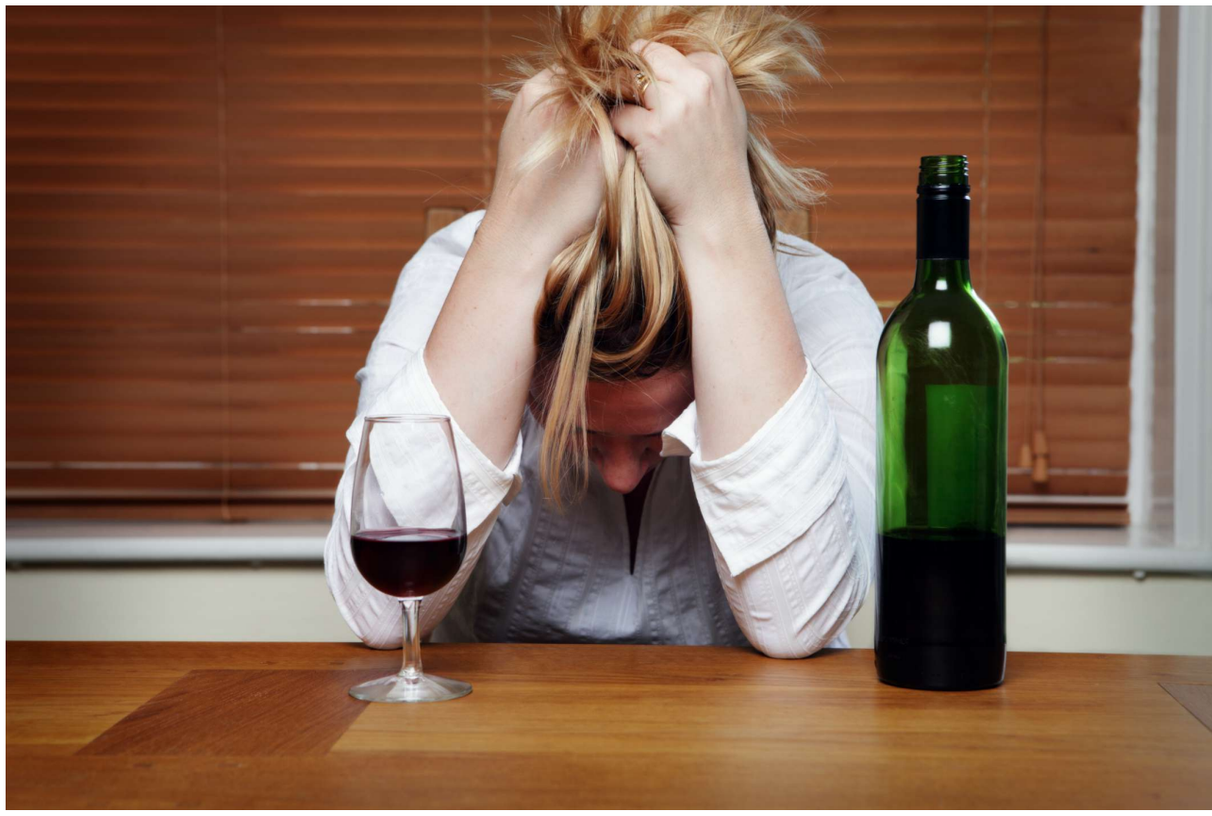
Case 1

What is your approach to this patient?

- Monitor regularly
- Supportive care
- Discharge with support once clinically sober and safe for disposition, detox center?

Case 2

A 43-year-old female presents in the ED stating she “wants to stop drinking” as it has recently caused her to lose her job and led to a divorce. She states her last drink was 24 hours ago. Over the last 6-8 hours she “has been feeling bad!” and noted a restless feeling. She reports a 1-2 year history of alcohol abuse.



What is your approach to this patient?

THE Questions

1. Is the patient ACTUALLY intoxicated?
   - No – Alcohol level: 0 mg/dL; Glucose: 84 mg/dL; Lytes: Normal

2. Are there concomitant organic/other pathologies or problems?
   - No – Exam and history do not indicate concomitant pathology(ies), however does show intention tremor and tongue fasiculations

3. Is the patient at risk of withdrawal complications?
   - Yes – History of heavy drinking, exam findings of tremors and apparent anxiety. No previous w/d or needed detox treatment.

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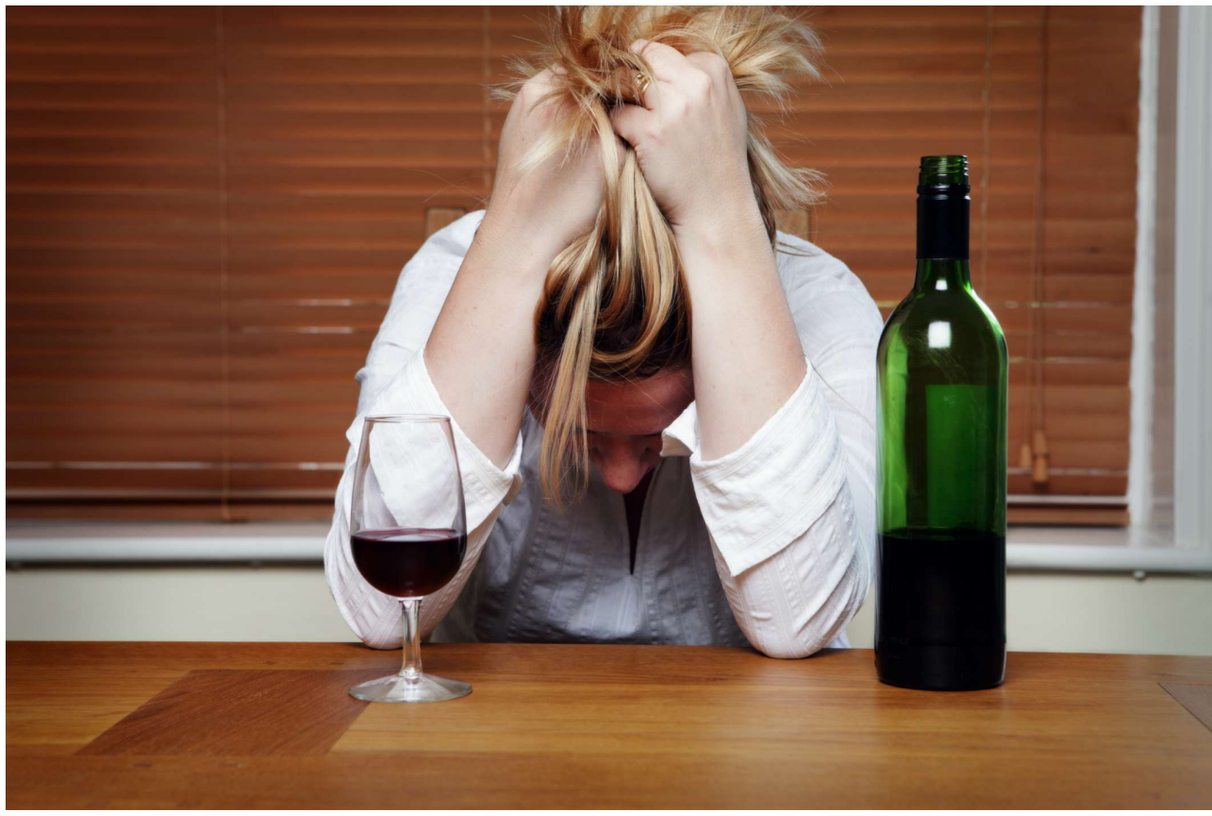


What is your approach to this patient?

Case 2

8 points

Patients with scores ≤8 typically do not require medication for withdrawal.

Copy Results | Next Steps

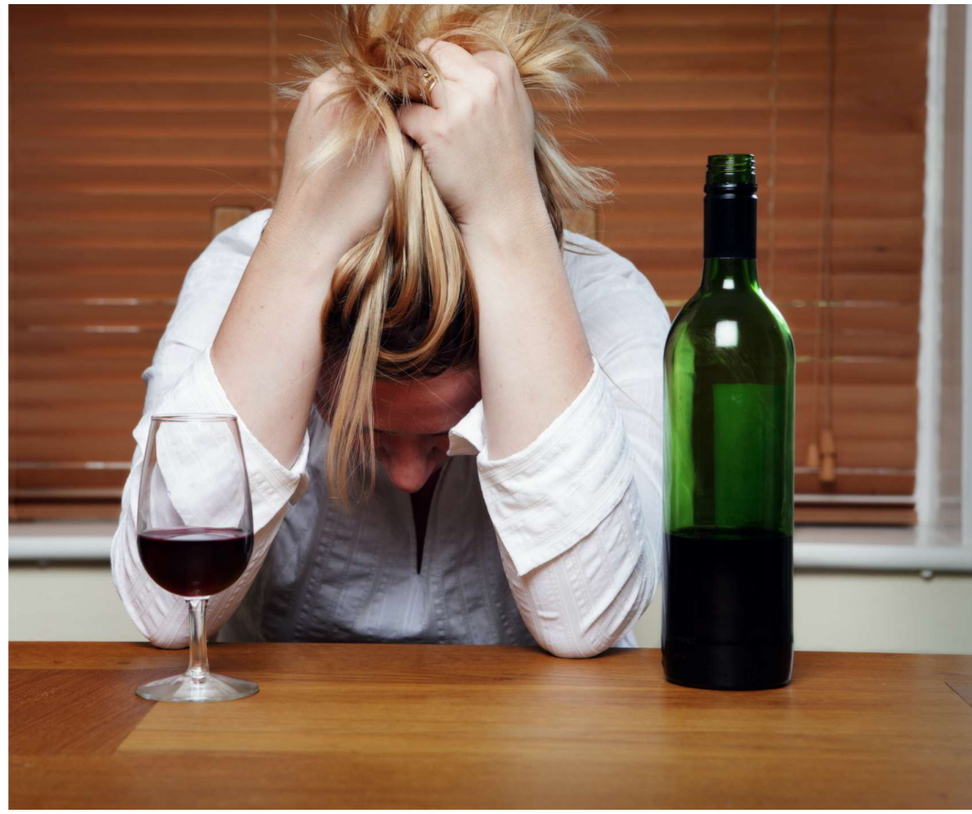
» Next Steps | Evidence | Creator Insights

ADVICE

- Benzodiazepines are generally used to control psychomotor agitation and prevent progression to more severe withdrawal.
- DiazePAM (Valium), LORazepam (Ativan), and chlordiazePOXIDE (Librium) are the most frequently used benzodiazepines. Follow your hospital's own alcohol withdrawal protocol; frequently treatment begins with benzodiazepines when CIWA-Ar scores reach 8-10, with standing or as needed dosing for scores 10-20. Some protocols even include transfer to the ICU for scores >20.
- Consider additional supportive care, including intravenous fluids, nutritional supplementation, and frequent clinical reassessment including vital signs.

MANAGEMENT

Assessment protocols utilizing CIWA-Ar vary and include medication dosing triggered by symptoms only and combined symptom-triggered + fixed-dose medication dosing.



Case 3

A 34 year-old male is brought to the ED by EMS after sustaining a witnessed tonic-clonic seizure at the local homeless shelter. Because of recent cold weather and a bad snow storm, he has not been able to access alcohol for the last 24 hours.

Case 3

He is only slightly post-ictal, appears anxious, has a severe tremor of the hands, and is unable to hold a glass of water without spilling its contents. The rest of the physical exam is unremarkable.

What is your approach to this patient?

Case 3

He is only slightly post-ictal, appears anxious, has a severe tremor of the hands, and is unable to hold a glass of water without spilling its contents. The rest of the physical exam is unremarkable.

What is your approach to this patient?

Case 3

Workup:

- *Non-contrast CT head:* No acute pathology
- *CBC:* Normal other than slight anemia
- *CMP:* Normal other than elevated liver enzymes; Glucose 92 mg/dL
- *Ethanol level:* 82 mg/dL
- *EKG:* Sinus tachycardia at 112, QTc 430 ms, no other abnormalities
- *CIWA-Ar Score:* 21 initially, with significant tremor

Case 3

What is your approach to this patient?

IV Access: 10 mg diazepam

CIWA scoring and reevaluation every ~10 min

Likely admission, possbily to the ICU

Summary

- The differential for alcohol intoxication and withdrawal is broad and significant.

- Treatment should be directed at symptomatic relief and halting progression to more significant disease, such as DT.

- Patients who have not had any withdrawal symptoms more than 24 hours after cessation are unlikely to develop such symptoms.

- Though alcohol withdrawal is usually mild, an estimated 20 percent of patients experience more advanced manifestations such as hallucinosis, seizures, and delirium tremens[13]

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