**Blame it on the... Alcohol withdrawal**

**Objectives:** At the conclusion of this document, the learner will be able to identify what entails alcohol withdrawal, explain complications of alcoholism, diagnose and assess patients withdrawing from alcohol, and treat alcohol withdrawal with correct medications.

**Introduction**

14% of Americans qualify for alcohol abuse disorder. Nearly 50% of these patients will experience some withdrawal symptoms upon drinking cessation. Of these, 20% will have severe symptoms: hallucinations, seizures, DTs.

Pathophysiology: remember that alcohol, like benzodiazepines, potentiates the frequency of GABA channel opening in the brain and from addiction this build tolerance. A sudden withdrawal of alcohol will lead to a decreased inhibitory tone and symptoms may develop.

**Symptom timeline:**

**Acute alcohol withdrawal:** overall about 6-48 hours since last drink.
- Mild symptoms: anxiety, tremors, agitation, diaphoresis, palpitations, headache, nausea/vomiting.
- Moderate symptoms: tachycardia, hypertension, hyperactive reflexes, tremor at rest.
- Severe symptoms:
  - alcohol hallucinosis (formication). Classically involves visual and tactile phenomena (snakes or spiders in the room).
  - withdrawal seizures: risks include polysubstance abuse, typically tonic-clonic in nature.

**Delirium tremens:** ~48-96 hours. Rapid onset, altered sensorium, hallucinations, +/- seizures.

The hallmark is *extreme sympathomimetic symptoms* (hypertension, diaphoresis, tachycardia, hyperthermia). The presence of early alcohol withdrawal symptoms (see above) increase the risk of DTs developing.

Historically, up to 30% of patients would die from DT’s, but now with modern medical therapy, rates are between 1-4%.

Mortality is related to sympathomimetic complications, respiratory failure secondary to aspiration, electrolyte abnormalities.

“God put alcoholics on this earth to humble physicians”

Alcoholics, like diabetics, have multisystem pathology and additionally are often very unreliable historians with poor disease insight. Always look for other acute medical problems that could confound the picture of withdrawal. Our great mnemonic can help: Remember, “POUR ME A GLASS”

**Pancreatitis**

- Oral cancers (mouth, neck, esophageal)
- Ulcers
- Rhythm disorders (A. fib)

**Metabolic changes:** hyponatremia, hypomagnesemia, hypoglycemia

**Encephalopathy (Wernicke, Korsakoff)**

**Anemia**

- GI bleed
- Liver cirrhosis
- Aspiration
- Suicide
- Sepsis

Laboratory workup: CBC, CMP, lipase, +/- ethanol level and UDS, EKG

Consider Head CT in altered patients where there is questionable history and concern for head trauma.

**Assessing level of withdrawal**

The best predictor of a significant withdrawal is the PAWSS (Prediction of Alcohol Withdrawal Severity Score). >4.

There are many severity scoring systems as to severity of withdrawal, but the most studied and most used is CIWA. CIWA does NOT predict withdrawal (that’s PAWSS), but it determines withdrawal severity and guides therapy.

Although not posted here, the score can easily be assessed via the internet or hospital protocol guides.

Scoring:
- 0-9: very mild withdrawal
- 10-15: mild withdrawal
- 16-20: moderate withdrawal

**Wernicke Encephalopathy:** B1 (thiamine) deficiency

- Confusion, Gait ataxia, Oculomotor dysfunction
- Only a triad in 1/3 of patients
- Confusion is most common solo sign
- Debatably found in large minority of alcohol-related deaths on autopsy. Diagnosis is difficult.

Do not trust blood testing. Treat with IV thiamine and a high index of suspicion! Patients will need multiple doses as well.

Prognosis: majority will have residual nystagmus, ataxia. If untreated, high risk of Korsakoff.
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Scores <8-9 do not warrant treatment.
Scores >20 usually indicate ICU admission.

Managing withdrawal symptoms

Supportive care: IV fluids, nutrition, avoid stimulation.

-thiamine and glucose with other multivitamins. IV is expensive, and unless the patient demonstrates inability to tolerate oral medications or is clearly in Wernicke encephalopathy, PO is reasonable. The classic dogma of giving thiamine prior to glucose is just that, dogma, but board exams love it.

Agitation management: benzodiazepines or phenobarbital
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Phenobarbital

Benzodiazepines: lorazepam and diazepam are preferred, and dosing needs to be aggressive (preferably IV) if CIWA score is >16. The goal is titration of sedatives to CIWA to <8.

-Diazepam 5 to 10 mg IV every 10 minutes or
-Lorazepam 2 to 4 mg IV every 20 minutes until appropriate CIWA score achieved.

Refractory DTs

No clear definition, so really these are patients who are not well controlled after about 5 doses of either diazepam or lorazepam in 1 hour.

Phenobarbital: ~130 mg for mild symptoms or ~260 mg for severe symptoms. 100 or 200 mg PO/IM for maintenance dosing every 60 minutes. Wide therapeutic index but not wide if BNZs are being given.

Studies show phenobarbital had lower rates of ICU admission compared to BNZs alone.

Intubation with Propofol sedation: a last resort. These are patients who are either too sick to tolerate multiple BNZ/phenobarbital dosing, have multiple comorbidities, have a complex medical presentation, or simply are too aggressive/delirious/not protecting their airway.

Disposition

Many require ICU admission. There is no set criteria on ICU admission, however clinical gestalt is paramount and one must consider refractory DT and other patient factors including current presentation, comorbidities, and prior presentations as a guide for appropriate level of care.

References: