Acute Care Management of Alcohol Withdrawal
Objectives

At the end of this presentation, the learner will be able to:

1. Explain the pathophysiology of alcohol withdrawal.
2. Describe the assessment of a patient’s risk for alcohol withdrawal using the PAWSS score.
3. Describe the use of the Alcohol Withdrawal Orders including: monitoring of the patient, doses of medications, and CIWA-Ar scale. (Clinical Institute Withdrawal assessment for Alcohol-Revised)
Facts

- 9.6% of the population in the U.S. are alcoholics.
- It is estimated that 1 out of 5 hospitalized patients abuses alcohol.
- Approximately 25% of patients withdrawing from alcohol have seizures, usually within 24 hours after drinking has stopped.
Pathophysiology
Alcohol and the Brain

Alcohol use affects two major neurotransmitters, GABA and glutamate.
Pathophysiology
Alcohol and the Brain

- GABA (γ-aminobutyric acid) allows chloride into the brain cell and has a natural calming or sedative effect. Alcohol will take over this function and allow more chloride into the brain cell causing increased sedation.

- During withdrawal, the neurons no longer have alcohol to allow chloride into the cell for its sedative effect. This acts as a stimulus (hyperexcitability state).
Glutamate is an excitatory (NMDA) neurotransmitter which would normally increase brain activity and energy levels. Alcohol suppresses the release of glutamate, causing increased sedation.

During withdrawal, alcohol is no longer present to suppress the release of excitatory glutamate.
Pathophysiology Of Alcohol Withdrawal

- The lack of chloride and the excess glutamate cause brain hyperexcitability which can be seen as: anxiety, HTN, tremors, insomnia, irritability, hallucinations, palpitations, diaphoresis, headache, and GI upset, seizures and Dt’s.

- Seizures are more common if the patient has a history of multiple episodes of detoxification or history of seizures.
# Symptoms of Alcohol Withdrawal Syndrome

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Time to symptoms after cessation of alcohol</th>
</tr>
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<tbody>
<tr>
<td>Minor: insomnia, anxiety, GI upset, HA, tremors, diaphoresis</td>
<td>6 – 12 hours</td>
</tr>
<tr>
<td>Visual/auditory/tactile hallucinations</td>
<td>12 – 24 hours</td>
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</tbody>
</table>
# Symptoms of Alcohol Withdrawal Syndrome

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<thead>
<tr>
<th>Symptoms</th>
<th>Time to symptoms after cessation of alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawal seizures</td>
<td>24 – 48 hours</td>
</tr>
<tr>
<td>Withdrawal delirium (DTs) hallucinations, tachycardia, HTN, low-grade fever, agitation, diaphoresis</td>
<td>48 – 72 hours</td>
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</table>
Complications of Alcohol Withdrawal

■ Delirium Tremens (DT’s)
  Severe mental and neurological changes, including psychosis and seizures that typically occur within 72 hours after the last drink of alcohol. DTs are a life-threatening complication and are treated with life-support measures, anti-seizure medications, antihypertensive medications, and sedatives.
Complications of Chronic Alcohol Use

Wernicke-Korsakoff Syndrome

- A degenerative brain disorder caused by the lack or deficiency of thiamine (vitamin B1) due to poor nutritional status from chronic alcohol abuse.

- Symptoms: confusion, stupor, coma, hypotension, gait abnormalities (ataxia), paralysis of certain eye muscles (ophthalmoplegia), and nystagmus.
Complications of Chronic Alcohol Use

Wernicke-Korsakoff Syndrome

- Treated by giving Thiamine 100 mg IV on order set within the first 4 hours of admission.
- Memory function may improve slowly with treatment although it may never completely restored.
Complications of Chronic Alcohol Use

Folate Deficiency

- Chronic alcohol consumption leads to deficiency of folic acid due to poor diet, intestinal malabsorption, decreased hepatic uptake.
- Folate deficiency can cause anemia leading to fatigue, weakness, lethargy, pale skin and shortness of breath.
- Treated with daily po folic acid on order set.
Prediction of Alcohol Withdrawal Severity Scale (PAWSS)

### Part A: Threshold Criteria:
Have you consumed any amount of alcohol (i.e., been drinking) within the last 30 days? OR did the patient have a "+" BAL on admission?
If the answer to either is YES, proceed with test:

### Part B: Based on patient interview:
1. Have you been recently intoxicated/drunken, within the last 30 days?
2. Have you ever undergone alcohol use disorder rehabilitation treatment or treatment for alcoholism?
   (i.e., in-patient or out-patient treatment programs or AA attendance)
3. Have you ever experienced any previous episodes of alcohol withdrawal, regardless of severity?
4. Have you ever experienced blackouts?
5. Have you ever experienced alcohol withdrawal seizures?
6. Have you ever experienced delirium tremens or DT’s?
7. Have you combined alcohol with other "downers" like benzodiazepines or barbiturates, during the last 90 days?
8. Have you combined alcohol with any other substance of abuse, during the last 90 days?

### Part C: Based on clinical evidence:
9. Was the patient’s blood alcohol level (BAL) on presentation ≥ 200?
10. Is there evidence of increased autonomic activity?
   (e.g., HR > 120 bpm, tremor, sweating, agitation, nausea)

**Total Score:**

- **Maximum Score possible is 10**
- **Patients with a score of ≥4 are “HIGH RISK”**
- **Physician should complete and document in progress note or H&P**
- **Order for bolus based on score**
Show Video
Guidelines to CIWA-Ar Scores

- The CIWA-Ar should be completed with each assessment and reassessment
  - Completing the assessment within the designated timeframe will help determine if an alternate level of care is needed
- Each time the CIWA-Ar is completed there should be a RASS score documented
  - The RASS score is needed to help determine over sedation

<table>
<thead>
<tr>
<th>CIWA-Ar</th>
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<tbody>
<tr>
<td>Nausea and Vomiting</td>
</tr>
<tr>
<td>Tactile Disturbances</td>
</tr>
<tr>
<td>Tremor</td>
</tr>
<tr>
<td>Auditory Disturbances</td>
</tr>
<tr>
<td>Paroxysmal Sweats</td>
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<tr>
<td>Visual Disturbances</td>
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<tr>
<td>Anxiety</td>
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<tr>
<td>Headache, Fullness in Head</td>
</tr>
<tr>
<td>Agitation</td>
</tr>
<tr>
<td>Orientation and Clouding of Sensorium</td>
</tr>
<tr>
<td>CIWA-Ar Total</td>
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</tbody>
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<thead>
<tr>
<th>Sedation</th>
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<tbody>
<tr>
<td>Richmond Agitation Sedation Scale</td>
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<tr>
<td>Goal RASS</td>
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<thead>
<tr>
<th>Vitals</th>
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<tbody>
<tr>
<td>BP</td>
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<tr>
<td>Resp</td>
</tr>
<tr>
<td>Heart Rate</td>
</tr>
<tr>
<td>Heart Rate Source</td>
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<tr>
<td>SpO2</td>
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</tbody>
</table>
Guidelines to CIWA-Ar Scores

Score

- <8  Monitoring only
- 0-8  Mild withdrawal symptoms
- 9-15  Moderate withdrawal symptom
- >15  Severe withdrawal symptoms and pending DT’s

Nurse assesses patient’s CIWA-Ar score per alcohol withdrawal orders, which ranges from every 15 minutes to every 4 hours.

This is symptom-triggered therapy (medication given per symptoms) and has been shown to result in the use of less medication and shorter treatment times.
Guidelines to CIWA-Ar Scores

- 2 order set options for alcohol withdrawal
  - Ativan order set
  - Phenobarbital order set
Benzodiazepines (ie. Ativan)

- Binds to the GABA-A receptor and produces an inhibitory effect similar to alcohol
- Has been considered first-line medication used to prevent seizures
  - Rapid onset to control agitation
  - Long action to control breakthrough symptoms
  - May cause respiratory depression.
- IV Ativan is a potential caustic agent and can damage the vein or cause burns at the injection site; assess the IV site every 4 hours for signs of infiltration.
Phenobarbital

- Enhances binding of GABA to the receptor and slows the activity of the brain and nervous system.
- Onset 5min, max effect 30min; half-life 53-140h.
- Administration: Slow IV injection, do not exceed 60mg/min, dilute in 10ml NS.
- Inject slowly to avoid severe respiratory depression, apnea, laryngospasm, hypertension or vasodilation.
- Over sedation and respiratory depression are possible side effects.
Medication Concepts

- The effects of the ativan or phenobarbital must be documented every 15 minutes to 1 hour per the alcohol withdrawal orders to include sedation level, respiratory rate and depth and SpO2 level.

- IV Ativan is a potential caustic agent and can damage the vein or cause burns at the injection site; assess the IV site every 4 hours for signs of infiltration.
Medication concepts

- Flumazenil (romazicon) is used to reverse over sedation (RR ≤ 10 or sedation level of < -3 caused by benzodiazepines Lorazepam (Ativan).
- No Reversal Agent for Phenobarbital overdose. Treatment is aimed at supportive care.
Alcohol Withdrawal Orders

- Patient is placed on pulse oximetry
- It is recommended that the patient is placed on telemetry monitoring at the time of the initial dose of a benzodiazepine and remains on telemetry until the withdrawal orders are discontinued.
Use Richmond Agitation Sedation Scale (RASS) to assess level of sedation when using drugs to chemically sedate a patient

**RASS Sedation Scale**

- **+4** = Combative – Violent
- **+3** = Very Agitated – Pulls at tubes
- **+2** = Agitated – Nonpurposeful movement
- **+1** = Restless – Anxious/apprehensive
- **0** = Alert & calm

- **-1** = Drowsy – Not fully alert (eye contact >10 sec)
- **-2** = Light Sedation – Briefly awake to voice (eye contact < 10 sec)
- **-3** = Moderate Sedation – Opens eyes to voice, but no eye contact
- **-4** = Deep Sedation – Movement to physical stimulation only
- **-5** = Unarousable – No response to voice/touch

RASS scale is found in the in the pain assessment section in EPIC and also on the CIWA flowsheet.

Call MD if RASS score is -3 or lower and support patient respiratory status. Consider RRT.
Call Physician For:

- Heart rate > 120; SBP > 160 or < 100; DBP > 100 or < 60; RR > 30 or < 10; Temp > 38.5
- Lethargy (RASS Sedation Score less than -3)
- Seizure
- Need for restraints
- Consider transfer to higher level of care
Call Physician For:

- Evaluation for transfer from Med/Surg to Stepdown/Progressive Care Unit
  - CIWA-Ar severity score of 9 – 15 on more than 2 consecutive assessments
  - Patient has more than 6 mg Ativan in 2 hours
  - RASS -2 to -3

- Evaluation for transfer to ICU
  - Seizure activity
  - CIWA-Ar score increase of more than 10 over previous measurement
  - CIWA-A score exceeding 15 on 4 consecutive measurements
  - Patient has required 14 mg or more of Ativan within 2 hours
  - Patient has required 780 mg of Phenobarbital (bolus dose and 4 doses of 130mg) within 24 hours
  - RASS -4 to -5
Questions?

Adapted from:
Poudre Valley Hospital
Fort Collins, Colorado
July 2007
Case Study # 1

- A 43 year old male with a history of HTN and pancreatitis is admitted from the ED with a BAL (blood alcohol) of 1.2 (legally intoxicated = <0.8)
  - He has abdominal pain and admitted to a medical unit.
  - During the admission assessment, he reports that he drinks 1 pint of vodka every day.

What additional information should you get?
Case Study #1

- Ask when the patient last had a drink of alcohol
- Ask if the patient has ever had seizures or any kind of difficulty when withdrawing from alcohol.
- Look for the PAWSS score by the MD in H&P or progress notes.
- **What is your responsibility for this patient?**
Case Study #1

- Call physician and report the patient’s condition, alcohol use, and last drink.
- Include information about seizures or DTs with previous ETOH withdrawal.
- Document patient’s responses as well as the call made to the physician and orders given.
- Consider Social Work consult for alcohol abuse resources.
Case Study #1

- The physician gave an order for the Ativan alcohol withdrawal protocol for this patient.
- Your assessment reveals that the patient has become increasingly agitated and diaphoretic with tremors.
- What action would you take at this time?
Case Study #1

- The primary nurse will assess the patient and use the CIWA-Ar scale and based on the score will administer Lorazepam (Ativan) as ordered.

- What other orders and nursing care do you anticipate?
Case Study #1

- Place the patient on continuous pulse oximetry and telemetry.
- Administer IV bag (1000 ml) with MVI, thiamine, and folic acid (banana bag) for 3 days.
- Assess CIWA as ordered by the severity level until less than or equal to 8.
- Discontinue CIWA assessments when less than 8 for 72 hours.
- Monitor VS, labs, I & O.
- Provide a supportive and quiet environment.
POST Test
References

Alcohol. Retrieved January 3, 2007, from www.thebrain.mcgill.ca/flash/i/i_03/i_03_m/i_03_m_par/i_03_m_par_alcool.htm


