Overview

Patients admitted to Ivinson Memorial Hospital who exhibit signs/symptoms of alcohol withdrawal or with known history of alcohol abuse will be evaluated for alcohol withdrawal syndrome (AWS).

IMH has a clinical procedure for alcohol withdrawal management. The purpose of the order set is to assist with early identification and management of the patients at risk for AWS and to prevent negative physical and/or psychosocial consequences of the withdrawal experience.

The desired patient outcomes are as follows: the patient will experience minimal discomfort related to withdrawal syndrome, the patient will experience minimal or no complications related to detoxification and withdrawal symptoms, the patient will recognize the signs and symptoms of withdrawal syndrome and the patient will experience a promotion of patient dignity.

Learning Objectives

After completing this course you will be able to:

- Discuss scope and prevalence of alcohol related complications encountered in hospitalized patients in the U.S.
- Describe the progression of alcohol withdrawal
- Identify when and how to use the withdrawal assessment tool (CIWA)
- Identify two drugs commonly administered to prevent alcohol withdrawal seizures

Prevalence of Alcoholism in the United States

- 10% lifetime prevalence of alcohol use disorders
- 20% of hospital admissions are related to alcohol use
- 40% of trauma patients have positive blood alcohol levels

In the US, alcohol withdrawal is seen in . . .

- 8% of all general admissions
- 16% of post-surgical patients
- 31% of trauma patients.
Common Signs and Symptoms of Alcohol Withdrawal

Early/Mild Withdrawal Signs and Symptoms (approximately 6 hours after last drink)

- Anxiety
- Mild diaphoresis
- Hyperalertness, may startle easily
- Mild itching, vague pins and needles under skin
- Shakes and jitters with movement
- Nausea, anorexia
- Headache

Moderate Withdrawal Signs and Symptoms (approximately 12-48 hours after last drink)

- Tremors at rest
- Diaphoresis, especially face and palms
- Increased anxiety and emotional lability
- Nausea and vomiting
- Clouding orientation
- Increased sensitivity to touch
- Elevated heart rate and/or blood pressure

Severe Withdrawal Signs and Symptoms (approximately 48-72 hours after last drink)

- Tachycardia, Hypertension, Fever
- Total body tremor
- Profuse diaphoresis
- Extreme agitation, paranoia
- Complete disorientation
- Gastric pain, diarrhea
- Hallucinations

Most patients have mild symptoms which are nonspecific: tremor, sweating, anxiety, insomnia and headache. Some patients have more severe symptoms that may create significant risks in elderly patients or those with comorbidities.
Neurophysiology of Chronic Alcohol Intake on the Brain

The brain maintains neurochemical balance through inhibitory and excitatory neurotransmitters. The main inhibitory neurotransmitter is gamma aminobutyric acid (GABA) which acts through GABA-alpha (GABA-A) neuroreceptor. One of the major excitatory neurotransmitters is glutamate, which acts through N-methyl-D-aspartate (NMDA) neuroreceptor, which are inhibited by alcohol consumption.

The consumption of alcohol opens GABA-A receptors. The sudden loss of inhibitory GABA-A activity with abrupt drinking cessation renders the CNS disinhibited and hyperreactive.

Alcohol is a depressant, enhancing the effects of GABA, leading to decreased overall brain excitability. Chronic exposure to alcohol results in the compensatory decrease of GABA-A neuroreceptor response to GABA, evidenced by increasing tolerance to the effects of alcohol.

Abrupt cessation of alcohol exposure results in brain hyperexcitability because receptors previously inhibited by alcohol are no longer inhibited. Brain hyperexcitability manifests clinically as agitation, anxiety, irritability, and tremors. Severe manifestations include seizures and delirium tremens.

Standard treatment is to replace this GABA activity and slowly withdraw, giving the CNS time to adapt.

Benzodiazepines such as Lorazepam, Diazepam and Chlordiazepoxide and Barbiturates such as Phenobarbital are commonly used for GABAergic treatment. Benzodiazepines have the same physiologic action as alcohol (cross tolerance) and can be used to replace the amount of alcohol that the patient has routinely ingested. Benzodiazepine treatment of alcohol withdrawal is a controlled weaning of an equivalent addictive agent.

Potential Complications of Alcohol Withdrawal

Alcohol Withdrawal Seizures

Seizures are usually single, with 24% of persons who present with an alcohol-related seizure having a second seizure, if unmedicated. The risk of alcohol withdrawal seizures increases with:

- History of previous seizures
- Multiple episodes of alcohol withdrawal
- Use of benzodiazepines or other sedatives in addition to alcohol

Seizures occur early in the withdrawal process. The peak incidence is at 24 hours, with 90% occurring between 6 and 48 hours after the last drink and can occur while the blood alcohol level is still above zero.

Thiamine Deficiency

Chronic alcohol intake interferes with thiamine absorption from the GI tract and hepatic storage. This, combines with poor nutrition leads 30-80% of alcohol dependent patients to be thiamine deficient. Thiamine plays a major role in glucose metabolism. Thus, the major organs affected by thiamine deficiency are those dependent on energy from the metabolism of carbohydrates – peripheral nerves, heart, and brain.

Acute thiamine deficiency can trigger Wernicke’s encephalopathy. Clinical changes seen with Wernicke’s include horizontal and vertical nystagmus, partial ophthalomoplegias, gait ataxia, and global confusion. Prognosis is dependent on early diagnosis and prompt intervention. Treatment consists of immediate administration of thiamine, and supportive rehydration, correction of electrolyte imbalance, and general
nutritional therapy. Left untreated, this disorder can progress to Korsakoff psychosis, which results in memory deficits. Confabulation is usually an early sign of Korsakoff’s, as patients will unconsciously create imaginary or confused accounts of events they cannot recall.

**Alcohol Withdrawal Delirium (Delirium Tremens)**

Alcohol withdrawal delirium (AWD), also known as Delirium Tremens or “DT’s” occurs in 5-10% of alcohol withdrawal patients, and presents late, after 2-3 days. Diagnostic features of AWD include disturbance of consciousness, change in cognition or perceptual disturbance developing in a short period. Other clinical signs include hyperpyrexia, tachycardia, hypertension and diaphoresis.

The hallmark feature of AWD is hallucinations, which can occur with or without insight. The typical alcohol hallucination is bland, and the bizarre features of a psychotic hallucination are usually absent.

**Other potential complications**

- Arrhythmia
- Aspiration
- Rhabdomyolysis
- DVT’s
- Fall risk

**Treatment Principles in Alcohol Withdrawal**

**Effective Communication with Persons with Substance Use Illness**

Stigma against persons with substance use disorders continues in American society as a whole. The attitude of caregivers has been demonstrated to impact patient self-efficacy and self-management of chronic illness. When patients encounter negative bias and stereotyping via negative and discouraging attitudes on the part of caregivers, health outcomes are adversely affected.

Qualities of an effective patient-provider relationship include clinician self-awareness of negative bias and stereotype and clinician self-regulation regarding any personal issues about substance use that have resulted from such influences as family history with substance users.

**Assessing Alcohol Withdrawal Using the CIWA Scale**

The Clinical Institute Withdrawal Assessment for Alcohol scale (CIWA) is widely used to predict the progression of alcohol withdrawal. It contains a 0-7 numerical scale for categories such as nausea and vomiting, tremor, paroxysmal sweats, anxiety, agitation, tactile disturbances, auditory disturbances, visual disturbances, headache, orientation/clouding of sensorium. These categories and assessed through observation and patient interaction. Diaphoresis is one of the best early predictors of alcohol withdrawal.

In using the CIWA scale, it is important to remember underlying medical factors that can affect the reliability of the CIWA scoring. Some of these factors include patients who are: critically ill, post-surgery, have a psychiatric history, are on beta blockers or other anti-hypertensives, and those abusing benzodiazepines or other sedatives.
Vital signs will be taken concurrently with each CIWA assessment. These assessments need to be completed as outlined in the order sets around the clock.

**Treatiding Alcohol Withdrawal with Benzodiazepines**

Early treatment coupled with close and regular monitoring appears to be effective in avoiding prolonged withdrawal, sedation-related morbidity and extra resource utilization. Each benzodiazepine acts the same chemically in treating alcohol withdrawal. Their only variation is the onset and duration of action.

<table>
<thead>
<tr>
<th>Medication</th>
<th>Onset</th>
<th>Metabolized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorazepam</td>
<td>Fast</td>
<td>Fast</td>
</tr>
<tr>
<td>Diazepam</td>
<td>Fast</td>
<td>Slow</td>
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</tbody>
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**Screen Shot of CIWA Assessment in Meditech**
The severity of alcohol withdrawal varies between patients. Individualized, symptom-triggered treatment results in less medication being given and decreased length of alcohol withdrawal treatment than fixed regimens.

Ivinson Memorial Hospital Clinical Institute Withdrawal Assessment (CIWA) Guidelines

The use of an assessment scale increases the accuracy in predicting if patients will or will not require benzodiazepine loading or other appropriate drugs to avoid complications of alcohol withdrawal. Use of the CIWA assessment and subsequent medication protocol is to PREVENT complications associated with withdrawal from alcohol.

When to start the CIWA:

- If the patient’s history indicates a likelihood of withdrawal reaction – large amounts over a long period of time, history of withdrawal symptoms, last drink within the past 12 hours.
- If history not evident, observe informally until symptoms occur – not all people develop withdrawal symptoms.

When to stop the CIWA:

- Discontinue the CIWA 72 hours after initiated or per physician order.
- If the CIWA score is <10 after three consecutive assessments, you may consider notifying the physician to discontinue the CIWA.
- Continue to informally monitor patient after discontinuation of CIWA to ensure there is not a re-emergence of symptoms.

Using the CIWA Assessment:

- Documentation of the CIWA will be performed in the patient’s computerized medical record.
- If there is a history of alcohol abuse, either documented or suspected, the time to begin using the assessment tool is before withdrawal begins.
- Reassessment of CIWA
  - If the CIWA score is ≤10, reassess the patient in four hours
  - If the CIWA score is >11, reassess the patient every hour while awake.
- If the CIWA score is >15 x2 times or >20 x1 time and a treatment protocol is not yet in place, contact the physician for treatment protocol.

Important points to remember:

- Patient’s CIWA score can change quickly, do assessments per the CIWA Protocol, but if patient’s symptoms increase do the assessment sooner than indicated.
- If Blood Alcohol Level (BAL) on admission is 0, this patient may be inclined to go into alcohol withdrawal faster than a patient with a high BAL.
- Do not verbally contradict what the client tells you. Adjust the score based on the subjective and objective signs and symptoms.
- Trust your assessment skills and trust the CIWA assessment for accuracy (although scoring will vary from nurse to nurse the CIWA remains an accurate assessment tool.
- Once medication therapy is initiated, i.e. loading dose is given, the next CIWA assessment should not be done until one hour after the last dose
- Advise MD if patient has been receiving regular doses of benzodiazepines, barbiturates, warfarin (Coumadin), is diabetic, is pregnant, or if there are other significant medical problems.
- Use Ativan/Lorazepam in patients with an AST/ALT >200, and in any patient with documented cirrhosis no matter what the liver panel shows.
THE CLINICAL INSTITUTE WITHDRAWAL ASSESSMENT (CIWA) ORDER SET

Treatment of Withdrawal:
- Initiate CIWA protocol
- Discontinue after 72 hours

For **Mild Withdrawal** (CIWA score 1-10) – no medication is required.

For **Moderate Withdrawal** (CIWA score 11-15)
- Diazepam 10 mg PO every hour until patient is in mild withdrawal (1-10)
- Lorazepam 2 mg PO every hour until patient is in mild withdrawal (1-10)

For **Severe Withdrawal** (CIWA score 16 and above)
- Diazepam 20 mg PO every hour times three doses (for a TOTAL of 60 mg).
  - If the patient is awake an hour after the third dose, an additional CIWA will be checked.
  - If the CIWA remains 16 or above, the nurse will notify the attending physician for orders to continue the load rate of Diazepam 20mg every hour times three additional doses.
- Lorazepam 2 mg IM or IV every hour until patient in moderate withdrawal (11-15).

**Additional Medications:**
- Thiamine 100 mg IV QDay x3 days, then 100 mg PO QDay thereafter
- Folic Acid 1 mg PO QDay
- Magnesium Sulfate 1 gram IV every 8 hours x3 days
- Magnesium Sulfate 1 gram IM every 8 hours x3 days
- Promethazine 25 mg PO every 6 hours PRN nausea/vomiting
- Promethazine 25 mg IM every 6 hours PRN nausea/vomiting
- Promethazine 12.5 mg IV every 6 hours PRN nausea/vomiting
- Aluminum-Magnesium Hydroxide with Simethicone 15 ml PO every 4 hours PRN indigestion
- Loperamide 2 mg PO PRN after each loose stool up to 8 tablets/24 hours

**Nursing:**
- Social Work Consult
- Seizure Precautions
- Continuous Pulse Oximetry
- Telemetry
- Hold medication doses for respirations <10 or if patient is unresponsive to voice, difficult to arouse, has a decreased pulse oximetry, or shows other signs of intoxication.

____________________________________                     ____________________
Physician Signature               Date/Time

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PATIENT IDENTIFIER
Other Considerations

Some services may choose to use additional criteria such as the NWI for assessing and managing alcohol withdrawal and/or fit these guidelines to their particular patient population.

Labs

The following labs may be considered by the physician. The labs need to be drawn prior to administering benzodiazepine therapy.

- CBCD
- PT
- PTT
- MAGNESIUM
- PHOSPHATE
- LIVER PANEL (albumin, total bilirubin, direct bilirubin, AST, ALT, alkaline phosphatase, protein)
- CMP
- HEPATITIS B CORE ANTIBODY
- HEPATITIS B SURFACE ANTIGEN
- HEPATITIS C ANTIBODY
- DRUG SCREEN
- HIV 1 & 2

Patient Education

It is important to educate the patient to the signs and symptoms of withdrawal and the importance of reporting these to the staff. It is also important to educate the patient and family regarding use of PRN medication for withdrawal signs and symptoms.