

Provincial Clinical Knowledge Topic Alcohol Withdrawal, Adult – Inpatient V 1.0

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Revision History

Version	Date of Revision	Description of Revision	Revised By
1.0	March 14, 2018	Completion of Topic	Lindsay Bridgland and Saifal Anwar

Important Information Before You Begin

The recommendations contained in this knowledge topic have been provincially adjudicated and are based on best practice and available evidence. Clinicians applying these recommendations should, in consultation with the patient, use independent medical judgment in the context of individual clinical circumstances to direct care. This knowledge topic will be reviewed periodically and updated as best practice evidence and practice change.

The information in this topic strives to adhere to Institute for Safe Medication Practices (ISMP) safety standards and align with Quality and Safety initiatives and accreditation requirements such as the Required Organizational Practices. Some examples of these initiatives or groups are: Health Quality Council Alberta (HQCA), Choosing Wisely campaign, Safer Healthcare Now campaign etc.

Guidelines

This Clinical Knowledge Topic is based on the following resources:

- World Health Organization
http://www.who.int/mental_health/mhgap/evidence/resource/alcohol_q2.pdf?ua=1
- Alcohol and Other Drug Withdrawal: Practice Guidelines, 2nd ed. Fitzroy, Victoria: Turning Point Alcohol and Drug Centre

Keywords

- Alcohol withdrawal
- Alcohol intoxication withdrawal
- Alcohol use disorder
- ETOH
- CIWA

Alcohol Withdrawal, Adult – Inpatient Order Set

Order Set Keywords: Alcohol withdrawal, Alcohol intoxication withdrawal, Alcohol use disorder, ETOH, CIWA

Risk Assessment/Scoring Tools/Screening: Clinical Institute Withdrawal Assessment for Alcohol ([CIWA-Ar](#))

Patient Care

Activity

- Activity as Tolerated
- Bedrest
- Other Activity: _____

Monitoring

- Vital Signs every _____ minute(s)
- Vital Signs every _____ hour(s)
- Vital Signs every time with CIWA-Ar

Safety and Precautions

- Fall Prevention Risk Assessment
- Seizure Precautions and Monitoring
- Restraints – Mechanical (soft) PRN and elevate head of bed to 30 degrees

Certification

NOTE: Electronic forms do not replace the paper form

- Psychiatric Certification – First Certification. Start Date: _____ (YEAR-MM-DD) at _____ (hh:mm)
- Psychiatric Certification – Second Form 1. Start Date: _____ (YEAR-MM-DD) at _____ (hh:mm)

Diet

- Regular Diet
- NPO - Medications with sips of water and may have Ice chips
- NPO
- Other Diet: _____

Respiratory Care

- O2 Therapy – Titrate to Saturation to maintain SpO2 between 88-92%
- O2 Therapy – Titrate to Saturation to maintain SpO2 between 92-96%

Intravenous Therapy

- Intravenous Cannula – Insert: Initiate IV

- IV maintenance: lactated ringers infusion at _____ mL/hour for _____ hour(s); reassess after _____ hour(s)
- IV maintenance: 0.9% NaCl infusion at _____ mL/hour for _____ hour(s); reassess after _____ hour(s)
- IV Peripheral Saline Flush/Lock: Saline Lock IV, flush with 2 to 5 mL 0.9% NaCl every 8 hours
- IV Bolus: _____ infusion at _____ mL/hour for _____ hour(s) and then at _____ mL/hour; reassess after _____ hour(s)

Ensure IV vitamin B1 (thiamine) is given prior to IV dextrose

- IV fluids (other): _____ at _____ mL/hour for _____ hour(s); reassess after _____ hour(s)

Laboratory Investigations - *Order as appropriate*

Hematology

- Complete Blood Count (CBC) with differential
- INR

Chemistry

- Albumin
- Alkaline Phosphate (ALP)
- ALT
- AST
- Bilirubin Total
- Calcium (Ca)
- CK
- Creatinine
- Electrolytes (Na, K, Cl, CO₂)
- Glucose Random
- Lipase
- Magnesium (Mg)
- Osmolal Gap (Glucose, NA, Urea, Osmolality)
- Phosphate
- Serum Osmolality

Toxicology Screen - *If clinically indicated*

- Acetaminophen
- Ethanol (Blood Alcohol)
- Ethylene Glycol
- Isopropanol
- Methanol
- Salicylate

Urine Tests

- Pregnancy Test, Urine (Urine Pregnancy Beta HCG)

Blood Gases

- Arterial blood gas (Venous blood gas if ABG not available) – STAT

Other Labs

- Blood cultures
- Other: _____

Repeating Labs

- Complete Blood Count (CBC) every _____ (specify frequency) for _____ days
- Creatinine every _____ (specify frequency) for _____ days
- Electrolytes (Na, K, CL, CO2) every _____ (specify frequency) for _____ days
- Mg every _____ (specify frequency) for _____ days
- Phosphate every _____ (specify frequency) for _____ days
- Other: _____

Diagnostic Investigation

- Electrocardiogram – 12 lead: Check Corrected QT Interval (QTc)
- Chest X-ray 2 projections: Posterior-anterior & Lateral (CR Chest, 2 Projections).
Indication: _____
- Chest X-ray Portable PA only (GR Chest, 1 Projection portable).
Indication: _____
- CT Head. Indication: _____
- Other: _____

Medications

Vitamin B1 (thiamine)

For suspected Wernicke's encephalopathy (oculomotor dysfunction, ataxia, encephalopathy)

- vitamin B1 (thiamine) 500 mg IV every 8 hours for 3 days **and then** 300 mg IV daily for additional 5 days then reassess

OR

For Wernicke's prophylaxis dosing

- vitamin B1 (thiamine) 300 mg PO/IV daily for 3 days and reassess

Other Vitamins

- folic acid 1 mg PO daily for 5 days and then reassess

OR

- folic acid 1 mg IV daily if NPO for 5 days and then reassess

- multivitamin 1 tab PO daily

OR

- multivitamin 10 mL in 100 mL of 0.9% NaCl daily if NPO

Electrolyte Replacements - *If clinically indicated*

- magnesium sulphate 2 g in 100 mL of 0.9% NaCl IV over 2 hours

OR

- magnesium sulphate 4 g in 250 mL of 0.9% NaCl IV over 4 hours

- phosphorus (Phosphate Novartis) 500 mg PO every _____ hour(s) for _____ days

OR

- potassium phosphate (22 mmol potassium plus 15 mmol phosphate) in 250 mL 0.9% NaCl IV over 3 hours

Choose only ONE option unless clinically indicated for severe hypokalemia

- potassium chloride 10 mmol in 100 mL of sterile water IV over one hour; give _____ doses

- potassium chloride (K-Dur) 40 mmol PO every _____ hour(s) for _____ days

- potassium chloride oral solution (K-10) 40 mmol PO every _____ hour(s) for _____ days

Antiemetic

For dimenhydrinate, recommended dosage is 25 to 50 mg

- dimenhydrinate _____ mg PO/IV every 4 hours PRN for nausea/emesis

- metoclopramide 10 mg PO/IV every 6 hours PRN for nausea/emesis

For ondansetron, recommended dosage is 4 to 8 mg

- ondansetron _____ mg PO/IV every 8 hours PRN for nausea/emesis

Benzodiazepines

Recommend symptom-based regimen, using the Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar) score. The recommended goal is to achieve light somnolence OR to achieve minimal to moderate sedation.

*CIWA-Ar NOT applicable to mechanical ventilated patients, seizure and post ictal state, delirious patients and patients with baseline cognitive impairment. **Patient must be alert and able to answer questions.***

Lorazepam is the drug of choice for the elderly or patients with COPD or severe liver disease.

Chlordiazepoxide and diazepam should not be used for elderly patients or those with hepatic impairment.

- Clinical Communication – Start CIWA-Ar and follow benzodiazepines orders below based on CIWA-Ar score
- Clinical Communication – For the following CIWA-Ar score:
 - If CIWA-Ar score 0-9, reassess score every 4 hours and PRN
 - If CIWA-Ar score 10 or greater, reassess score every 1 hour until score less than 10 on 3 consecutive measurements
 - If CIWA-Ar score 20 or greater on 2 measurements, continue benzodiazepines AND notify Authorized Prescriber to determine if dose adjustment is required
 - Reassess need for ongoing CIWA-Ar assessments after 5 days
 - If respiratory rate less than 10 breaths/minute, hold benzodiazepines and Notify Authorized Prescriber

If CIWA-Ar score 20 or greater – Severe agitation - Must choose ONE

Choose ONE

- diazepam 10 mg PO/IV every 1 hour PRN for CIWA-Ar score greater than 19
- diazepam 20 mg PO/IV every 1 hour PRN for CIWA-Ar score greater than 19

OR

Choose ONE

- LORazepam 1 mg PO/SL/IV every 1 hour PRN for CIWA-Ar score greater than 19
- LORazepam 2 mg PO/SL/IV every 1 hour PRN for CIWA-Ar score greater than 19
- LORazepam 4 mg PO/SL/IV every 1 hour PRN for CIWA-Ar score greater than 19

If CIWA-Ar score 10-19 – Moderate agitation - Must choose ONE

Choose ONE

- diazepam 5 mg PO/IV every 1 hour PRN for CIWA-Ar score 10-19
- diazepam 10 mg PO/IV every 1 hour PRN for CIWA-Ar score 10-19

OR

Choose ONE

- LORazepam 1 mg PO/SL/IV every 1 hour PRN for CIWA-Ar score 10-19
- LORazepam 2 mg PO/SL/IV every 1 hour PRN for CIWA-Ar score 10-19

If CIWA-Ar score cannot be used OR if a long acting medication is preferred

Do not adjust chlordiazepoxide based on CIWA-Ar, but can use lorazepam PRN based on CIWA-Ar in combination with chlordiazepoxide.

*The initial dose should be based on severity of symptoms, history of amount of alcohol use, and history of severe withdrawal in the past. **As a general guideline**, high alcohol quantity users or severe symptoms, start with 100 mg PO every 8 hours; for lower alcohol consumption or less severe withdrawal consider 50 mg PO every 8 hours or 25 mg PO every 8 hours for mild withdrawal or prophylaxis of withdrawal.*

Avoid chlordiazepoxide or diazepam in severe chronic liver disease, age greater than 65 years and severe Respiratory disease. Do not use both chlordiazepoxide and diazepam together.

Choose ONE

- chlordiazePOXIDE _____ mg PO every 8 hours. Notify Authorized Prescriber if respiratory rate is less than 10 breaths/minute
- diazepam _____ mg PO every _____ hours. Notify Authorized Prescriber if respiratory rate is less than 10 breathes/minute

AND

- LORazepam 1 to 2 mg PO/SL/IV every 1 hour PRN. Hold if respiratory rate is less than 10 breaths/minute

Transition and Referral

- Social Work Referral
- Addiction Medicine Services
- Psychiatry

Analytics

Baseline Analytics – Outcome Measures #1 Usage of Order Set

Name of Measure	Numbers of times order set Alcohol Withdrawal, Adult – Inpatient used.
Definition	For all patients who develop alcohol withdrawal during their admission. Number of times Alcohol Withdrawal Admission order set is used. Overall, by zone, by sites, by domain (ED, Inpatient, etc.), and by units. Will be required on an ongoing basis with the ability to filter by location, time period, domain, etc.
Rationale	Intended to measure how often the order set cited in the knowledge topic is being used, in what domain, and be for different lengths of time. May indicate areas with adoption issues or gaps in topic.

Baseline Analytics – Outcome Measures #2 Compliance to Clinical Standards

Name of Measure	Compliance to clinical standards of CKT items/orders in the order set.
Definition	The elements of the CKT for which it is important to measure compliance against in the order set are: <ul style="list-style-type: none"> • How often was lorazepam versus diazepam versus chlordiazepoxide used? • Use of CIWA-Ar
Rationale	Measure compliance to specified clinical standards within the CKT.
Notes for Interpretation	Drug availability may vary depending on site/region and this may impact practice patterns.

Baseline Analytics – Outcome Measures #3 Length of Hospital Stay

Name of Measure	Assessment of Alcohol Withdrawal Treatment Patterns and Length of Stay.
Definition	For patients admitted using the order set Alcohol Withdrawal Admission to measure the Length of stay tracked against various treatments instituted.
Rationale	Length of stay can be assessed and compared to the different therapeutic options to see whether one drug choice over another decreases length of stay.
Notes for Interpretation	Drug availability may vary depending on site/region and this may impact practice patterns. Severity of alcohol withdrawal will affect length of stay. Time to admission from ER and implementation of order set may affect severity of alcohol withdrawal and therefore affect length of stay.

	<p>Implementation of CIWA scale will depend on site/unit and nursing ratio.</p> <p>Therefore, determining severity of alcohol withdrawal and time to improvement in symptoms may be difficult in some institutions.</p>
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Relevant Clinical Knowledge Topics

[Alcohol Intoxication Withdrawal, Adult Emergency Department](#)

References

1. Sullivan JT, Sykora K, Schneiderman J, Naranjo CA, Sellers. Assessment of alcohol withdrawal: the revised Clinical Institute Withdrawal Assessment for Alcohol scale (CIWA-Ar). *Br Journal of Addict.* 84(11):1353-1357.

Additional References

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Appendix A – CIWA- Ar Scoring Reference

Alcohol Withdrawal Assessment Scoring Guidelines (CIWA-Ar)¹

<p>Nausea/Vomiting Rate on scale 0 – 7</p> <p>0 – None</p> <p>1 – Mild nausea and vomiting</p> <p>2</p> <p>3</p> <p>4 – Intermittent nausea</p> <p>5</p> <p>6</p> <p>7 – Constant nausea and frequent heaves and Vomiting</p>	<p>Tremors Patient to extend arms & spread fingers</p> <p>Rate on scale 0 – 7</p> <p>0 – No Tremor</p> <p>1 – Not visible but can be felt fingertip to fingertip</p> <p>2</p> <p>3</p> <p>4 – Moderate with arms extended</p> <p>5</p> <p>6</p> <p>7 – Severe, even with arms not extended</p>
<p>Anxiety Rate on scale 0 – 7</p> <p>0 – No anxiety, patient at ease</p> <p>1 – Mild anxious</p> <p>2</p> <p>3</p> <p>4 – Moderately anxious or guarded, so inferred anxiety</p> <p>5</p> <p>6</p> <p>7 – Equivalent to acute panic states seen in severe delirium or acute schizophrenic reactions</p>	<p>Agitation Rate on scale 0 – 7</p> <p>0 – Normal Activity</p> <p>1 – Somewhat normal activity</p> <p>2</p> <p>3</p> <p>4 – Moderately fidgety and restless</p> <p>5</p> <p>6</p> <p>7 – Paces back and forth or constantly thrashes about</p>
<p>Paroxysmal Sweats Rate on scale 0 – 7</p> <p>0 – No sweats</p> <p>1 – Barely perceptible sweating, palms moist</p> <p>2</p> <p>3</p> <p>4 – Beads of sweat obvious on forehead</p> <p>5</p> <p>6</p> <p>7 – Drenching sweats</p>	<p>Orientation and Clouding of Sensorium</p> <p>Ask what day is this? Where are you? Who am I?</p> <p>Rate on scale 0 – 4</p> <p>0 – Orientated</p> <p>1 – Cannot do serial additions or is uncertain about the date</p> <p>2 – Disorientated to date by no more than 2 calendar days</p> <p>3 – Disorientated to date by more than 2 calendar days</p> <p>4 – Disorientated to place/and or person</p>
<p>Tactile disturbances – Ask have you experienced any itching, pins & needles, burning or numbness, or a feeling of bugs crawling on or under your skin</p> <p>0 – None</p> <p>1 – Very Mild itching, pins & needles, burning or numbness</p> <p>2 – Mild itching, pins & needles, burning or numbness</p> <p>3 – Moderate itching, pins & needles, burning or numbness</p> <p>4 – Moderate hallucinations</p> <p>5 – Severe hallucinations</p> <p>6 – Extremely severe hallucinations</p> <p>7 – Continuous hallucinations</p>	<p>Auditory Disturbances – Ask Are you more aware of sounds around you? Are they harsh? Do they startle you? Do you hear anything that disturbs you or that you know isn't there?</p> <p>0 – None Present</p> <p>1 – Very middle harshness or ability to startle</p> <p>2 – Mild harshness or ability to startle</p> <p>3 – Moderate harshness or ability to startle</p> <p>4 – Moderate hallucinations</p> <p>5 – Severe hallucinations</p> <p>6 – Extremely severe hallucinations</p> <p>7 – Continuous hallucinations</p>
<p>Visual disturbances – Ask: Does the light appear to be too bright? Is its color different than normal? Does it hurt your eyes? Are you seeing anything that disturbs your or that you know isn't there?</p> <p>0 – Not Present</p> <p>1 – Very mild sensitivity</p> <p>2 – Mild sensitivity</p> <p>3 – Moderate sensitivity</p> <p>4 – Moderate hallucinations</p> <p>5 – Severe hallucinations</p> <p>6 – Extremely severe hallucinations</p> <p>7 – Continuous hallucinations</p>	<p>Headache Ask: Does your head feel different than usual? Does it feel like there is a band around your head? Do not rate dizziness or lightheadedness.</p> <p>0 – Not Present</p> <p>1 – Very mild</p> <p>2 – Mild</p> <p>3 – Moderate</p> <p>4 – Moderate severe</p> <p>5 – Severe</p> <p>6 – Very severe</p> <p>7 – Extremely severe</p>

Assess and rate each of the 10 criteria on the CIWA Scale. Each criterion is rated on a scale from 0 – 7 except for “orientation and clouding of sensorium”. Add up the scores for all 10 criteria. This is the total CIWA–Ar score for the patient at that time. Anxiolytic medication should be started for any patient with a total CIWA-Ar score of 10 or greater

Link to CIWA-Ar Alcohol Withdrawal Scoring Tool: <http://www.mdcalc.com/ciwa-ar-for-alcohol-withdrawal/>

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