
TITLE: ALCOHOL WITHDRAWAL (AWD) SYMPTOM-TRIGGERED THERAPY GUIDELINES (PILOT) FOR MEDICAL PATIENTS (NYP/CU: EMERGENCY DEPARTMENT, MEDICAL ICU/A AND B, 6GN/S, AND 7GS)

GUIDELINE:

Alcohol Withdrawal (AWD) tends to occur in a temporal progression; however, there is no fixed sequence. Completion of alcohol withdrawal typically lasts 4-7 days.
Typical withdrawal "timeline" after the last drink:

- Within 6-12 hrs: acute tremulousness ("the shakes"), insomnia, and headache
- Within 12-24 hrs: visual and/or auditory hallucinations (not 1°psych)
- Within 6-48 hrs or earlier with rapidly declining blood alcohol level (BAL): seizures ("rum fits")
- Within 72-96 hrs: delirium tremens ("DT's") presenting with AMS/delirium that may persist up to one week

Unrecognized or undertreated withdrawal may progress to more severe withdrawal and worsen future episodes of AWD. This underscores the importance of early recognition and treatment of AWD. Symptom triggered therapy (STT) with benzodiazepines administered according to the Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar) score, clinical picture (in conjunction with the Richmond Sedation Agitation Sedation Scale (RASS) score in ICU patients) is the preferred mode of therapy versus fixed dose regimens and continuous infusions. STT decreases length of stay, decreases total benzodiazepine dose, and decreases incidence of intubation.

Ideal guidelines provide parameters by which clinicians may titrate pharmacologic management based on individual patient needs. An ideal regimen should control hyperadrenergic symptoms, anxiety, agitation, and delirium while minimizing adverse effects. Monitoring tools will include subjective assessments by caregivers as well as CIWA-Ar and RASS scores. Selection of drug therapy is based on identification and classification of AWD symptoms as well as on individual patient characteristics.

PURPOSE:

To provide guidelines (pilot) for the early recognition and appropriate disposition and symptom-triggered treatment (STT) of adult medical patients at risk for or experiencing alcohol withdrawal in the Emergency Department, selected inpatient medical wards and the Medical ICU.

APPLICABILITY:

Prescribers, nurses, and pharmacists

PROCEDURE:

1. General Considerations
    A. It is important to consider the complete clinical picture when caring for a patient with AWD
        1) Precipitants/Co-Existing Illness: Trauma, infection, pancreatitis, etc.
        2) Co-morbid medical and psychiatric diagnoses, including suicidality
        3) Iatrogenic causes i.e. evolution of symptoms while hospitalized
        4) Previous history of alcohol withdrawal
        5) Dehydration, electrolyte and vitamin deficiencies

    B. It is important to perform a risk assessment to identify patients at risk for developing AWD and severe AWD and/or DTs
        1) History of physiologic tolerance to alcohol, from years of heavy use
        2) Recent cessation or reduction in alcohol intake
        3) Development of typical withdrawal symptoms 6-96 hours post cessation or reduction of alcohol intake
        4) Very heavy alcohol use, withdrawal symptoms with positive BAL, mild intoxication with BAL >300-400, repeated severe withdrawal episodes are risk factors for the development of DTs

    C. Routine assessment and documentation of CIWA-Ar and RASS score (ICU patients) required for each patient
        1) To classify patient into Mild, Moderate or Severe AWD Category based on CIWA-Ar score and clinical picture
        2) Use CIWA-Ar and RASS (ICU patients) to guide medication dosing
        3) An assessment of each patient's CIWA-Ar/Sedation Score should be made upon initiation and as indicated by degree of AWD and medication dosing
        4) Changes in drug dosing should be based on the patient's CIWA-Ar, RASS score (ICU patients) and clinical picture

    D. There are several important considerations when choosing a pharmacologic agent for a patient in AWD. STT with benzodiazepines administered according to CIWA-Ar score, clinical picture and RASS score (ICU) is the preferred mode of therapy versus fixed dose regimens and continuous infusions
        1) Chlordiazepoxide and diazepam
            a. Longer duration of action (active metabolites) may decrease rate of breakthrough symptoms and have an added auto-tapering effect
            b. Diazepam has a very rapid onset and therefore is preferred for rapid titration in severe cases
        2) Lorazepam
            a. Longer onset may lead to iatrogenic over-sedation if titrated too rapidly
            b. Preferred over diazepam in the presence of COPD, hepatic dysfunction (INR >1.6) and/or renal dysfunction (Cr_{Cl}<30ml/min, S_cr >2mg/dL) and/or age >65 years

c. Lorazepam infusions carry risk of propylene glycol toxicity with metabolic acidosis and renal failure, and have numerous drip incompatibilities

3) Avoid using two different benzodiazepines (i.e PO chlordiazepoxide and IV benzodiazepine) together except during the phasing in of "tapering" or the initial control phase in a patient who is crossing over from milder to more severe symptoms
4) Avoid treating adrenergic overactivity with beta blockers and clonidine, unless necessary for co-morbid hypertension, arrhythmia, ischemic heart disease, etc.
5) Avoid neuroleptics as treatment for withdrawal, only use to treat co-morbid psychiatric disorders
6) Ethanol therapy is not recommended (IV or PO)

2. Monitoring
   A. The CIWA-Ar is a 10-item assessment tool for scoring degree of AWD. The RASS score should be used in conjunction with the CIWA-Ar score for all patients receiving sedation for AWD in the ICU. (See Appendix I).
      1) The CIWA-Ar and RASS sedation (ICU patients) goal should be determined based on the degree of AWD (mild, moderate, severe)(See Appendix II).
      2) The CIWA-Ar and RASS sedation (ICU patients) goal should be ordered in the titration section of each sedative agent
      3) Assessment and documentation of patient's CIWA-Ar and RASS score (ICU patients) should occur per the algorithm (See Appendix II) and at minimum every 4 hours.
   B. Daily Interruption of Sedation
      1) Patients undergoing treatment for acute alcohol withdrawal should <u>not</u> have their infusions stopped (as part of routine ICU daily sedation interruption)

3. Proper method for titration of pharmacotherapy for control of AWD symptoms
   A. See Appendix II for the algorithmic representation of treatment strategies for mild, moderate, severe AWD as well as a special section for DT and Resistant Alcohol Withdrawal (RAW)
   B. Patients with RAW require ICU-level monitoring and a more aggressive pharmacotherapeutic approach
      1) Failure to respond to 200 mg of IV diazepam (or 30 mg lorazepam) in the first 3 hours
      2) Failure to respond to 400 mg of IV diazepam (or 60 mg lorazepam) in the first 8 hours
      3) Requirement of more than 40 mg per bolus of diazepam for control of agitation
      4) Persistent CIWA scores of >25 despite aggressive therapy

4. Individual Agents Used for Sedation (See Appendix II treatment algorithms for dosing guidelines)
    A. Chlordiazepoxide (Librium)
    B. Diazepam (Valium)
    C. Lorazepam (Ativan)
    D. Phenobarbital
    E. Propofol (Diprivan)

5. Tapering
    A. Once initial control or a stable trend established after 24-48 hours of withdrawal is achieved with benzodiazepines and/or phenobarbital/propofol, a plan for tapering must be considered
    B. Taper by ~ 20% per day of total DAILY benzodiazepine equivalent dose if needed (See Table below)
    C. Taper with chlordiazepoxide when possible (anticipate starting with ≥100 mg chlordiazepoxide PO every 2-8 hours in severe cases)
        e.g. Patient A had a total of 700mg chlordiazepoxide PO and 8 mg lorazepam IV over 24 hrs= ~900 mg chlordiazepoxide, then the next days dose should be 720 mg/day (divided every 6-8 hours)
    D. Patients treated with long acting agents with active metabolites may exhibit an "auto-taper" effect (varies between patients) while still using STT
    E. If CIWA-Ar scores increase to >10, give supplemental medication for breakthrough symptoms and consider a slower taper
    F. Taper propofol infusions early (2-3 days) due to infection risk and triglyceride elevation
    G. Taper lorazepam infusions by 20% per day
    H. For patients on continuous infusions, once the patient is stable, begin transitioning to chlordiazepoxide (PO/NGT)
    I. Benzodiazepine Equivalents

Benzodiazepine	PO	IV	T1/2	Comments
Chlordiazepoxide	50 mg	n/a	5-100 h*	Active metabolites*
Clonazepam	1 mg	n/a	20-50 h	
Diazepam	10 mg	5 mg	30-100 h*	Active metabolites*
Lorazepam	2 mg	1 mg	10-20 h	

6. Supportive Care
    A. Daily x 7 days: thiamine 100 mg PO/IV, folate 1 mg PO/IV, and MVI PO/IV
    B. Docusate 100 mg PO/NG/DT/PEG three times daily and Senna 2 tablets PO/NG/DT/PEG daily
    C. Lacrilube each eye twice daily or Artificial tears 2 drops each eye four times daily
    D. Consider NPO if compromised mental status, severe agitation and risk for aspiration
    E. Consider restraints and continuous observation as per hospital policy
    F. Consider consulting the Medicine triage and Psychiatry Consult Lesion Service for difficult cases
    G. Consult Social Work for after care and outpatient detoxification/rehabilitation follow-up

APPENDIX I

Clinical Institute Withdrawal Assessment - Alcohol (CIWA-Ar)

Patient: _____ **MR #:** _____ **Date**: (yy/mm/dd) ____/____/____ **Time**: (24 hr) _____
Pulse or heart rate: _____ **Blood Pressure:** _____ **Temp:** _____

Nausea and Vomiting - Ask "*Do you feel sick to your stomach?*" "*Have you vomited?*" Observation. 0 - no nausea and no vomiting 1 - mild nausea with no vomiting 2 3 4 - intermittent nausea with dry heaves 5 6 7 - constant nausea, frequent dry heaves and vomiting.	**Tactile Disturbances** - Ask "Have you any itching, pins and needles sensations, any burning, any numbness, or do you feel bugs crawling on or under your skin? Observation. 0 - none 1 - very mild itching, pins and needles, brning or numbness 2 - mild itching, pins and needles, burning or numbness 3 - moderate itching, pins and needles, burning or numbness 4 - moderately sever hallucinations 5 - severe hallucinations 6 - extremely severe hallucinations 7 - continuous hallucinations
Tremor - Arms extended and fingers spread apart. Observation. 0 - no tremor 1 - not visible, but can be felt fingertip to fingertip 2 3 4 - moderate, with patient's arms extended 5 6 7 - severe, even with arms not extended	**Auditory Disturbances** - Ask "Are you more aware of sounds around you? Are they harsh? Do they frighten you? Are you hearing anything that is disturbing to you? Are you hearing things that you know aren't there?" Observation. 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
Paroxysmal Sweats - Observation. 0 - no sweat visible 1 - barely perceptible sweating, palms moist 2 3 4 - beads of sweat obvious on forehead 5 6 7 - drenching sweats	**Visual Disturbances -** Ask " Does the light appear to be too bright? Is its color different? Does it hurt your eyes? Are you seeing anything that is disturbing you? Are you seeing things that you know aren't there?" Observation. 0 - not present 1 - very mild sensitivity 2 - mild sensitivity 3 - moderate sensitivity 4 - moderately severe hallucinations 5 - severe hallucinations 6 - extremely sever hallucinations 7 - continuous hallucinations
Anxiety - Ask "Do you feel nervous?" Observation. 0 - no anxiety, at ease 1 - mildly anxious 2 3 4 - moderately anxious, or guarded, so anxiety is inferred 5 6 7 - equivalent to acute panic states as seen in severe delirium or acute schizophrenic reactions	**Headache, Fullness in Head -** Ask "Does your head feel different? Does it feel like there is a band around your head?" Do not rate dizziness or lightheadedness. Otherwise, rate severity. 0 - not present 1 - very mild 2 - mild 3 - moderate 4 - moderately severe 5 - severe 6 - very severe 7 - extremely severe
Agitation - Observation. 0 - normal activity 1 - somewhat more than normal activity 2 3 4 - moderately fidgety and restless 5 6 7 - paces back and forth during most of the interview, or constantly thrashes about.	**Orientation and Clouding of Sensorium** - Ask "What day is this? Where are you? Who am I? 0 - oriented and can dp serial additions 1 - cannot do serial additions or is certain about date 2 - disoriented for date by no more than two calendar days 3 - disoriented for date by more than two calendar days 4 - disoriented for place and/or person

Richmond Sedation Agitation Sedation Scale (RASS)

Score	Term	Description	
+4	Combative	Overtly combative, violent, immediate danger to staff	
+3	Very agitated	Pulls or removes tube(s) or catheter(s); aggressive	
+2	Agitated	Frequent non-purposeful movement, fights ventilator	
+1	Restless	Anxious but movements not aggressive vigorous	
0	Alert and calm		
-1	Drowsy	Not fully alert, but has sustained awakening (eye-opening/eye contact) to *voice* **(>10 seconds)**	VERBAL STIMULATION
-2	Light sedation	Briefly awakens with eye contact to *voice* **(<10 seconds)**	
-3	Moderate sedation	Movement or eye opening to *voice* **(but no eye contact)**	
-4	Deep sedation	No response to voice, but movement or eye opening to *physical* stimulation	PHYSICAL STIMULATION
-5	Unarousable	No response to *voice or physical* stimulation	

Procedure for RASS assessment

1) Observe patient
   a) Patient is alert, restless, or agitated. **(score 0 to +4)**
2) If not alert, state patient's name and *say* to open eyes and look at speaker.
   a) Patient awakens with sustained eye opening and eye contact. **(score –1)**
   b) Patient awakens with eye opening and eye contact, but not sustained. **(score –2)**
   c) Patient has any movement in response to voice but no eye contact. **(score –3)**
3) When no response to verbal stimulation, physically stimulate patient by shaking shoulder and/or rubbing sternum.
   a) Patient has any movement to physical stimulation. **(score –4)**
   b) Patient has no response to any stimulation. **(score –5)**

APPENDIX II

Colored plates of the treatment algorithm for AWD appear in the order that they will appear in poster form as well as in laminated form for reference binders at nursing stations. Folding pocket cards (8.5" x11") will also be printed for providers for quick reference.

NewYork-Presbyterian
The University Hospital of Columbia and Cornell

Alcohol Withdrawal (AWD) Symptom-Triggered Therapy Guidelines

PILOT 07/5/09

CLINICAL MANIFESTATIONS OF ALCOHOL WITHDRAWAL (AWD)

AWD tends to occur in a temporal progression, however, there is no fixed sequence. Completion of alcohol withdrawal typically lasts 4-7 days. Typical withdrawal "timeline" after the last drink:

- Within 6-12 hrs: acute tremulousness ("the shakes"), insomnia, headache
- Within 12-24 hrs: visual and/or auditory hallucinations (not 1° psych)
- Within 6-48 hrs or earlier with rapidly declining blood alcohol level (BAL): seizures ("rum fits")
- Within 72-96 hrs: delirium tremens ("DT's") presenting with AMS/delirium that may persist up to one week

RISK FACTORS FOR DELIRIUM TREMENS

- Very heavy alcohol use, withdrawal symptoms with positive blood alcohol level (BAL), mild intoxication with BAL >300-400, repeated severe withdrawal episodes
- Undertreated withdrawal may worsen into more severe withdrawal

ALCOHOL WITHDRAWAL ASSESSMENT TOOLS

- The Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar) is a 10 item assessment tool for scoring degree of AWD
- The Richmond Agitation Sedation Scale (RASS) may also be used in conjunction with the CIWA-Ar in ICU patients ONLY

SYMPTOM-TRIGGERED THERAPY (STT)

- STT with benzodiazepines administered according to CIWA-Ar score, clinical picture and RASS score (ICU) are the preferred mode of therapy versus fixed dose regimens and continuous infusions
- STT decreases length of stay, decreases total benzodiazepine dose, and decreases incidence of intubation

THEAPEUTIC GOALS

1. Identify patients at risk for severe withdrawal
2. Rapid control of withdrawal symptoms and seizures with benzodiazepine therapy guided by CIWA-Ar, clinical picture and RASS (ICU)
3. Determine safe disposition: psychiatric inpatient detoxification vs. medical/surgical service (with telemetry) vs. SDU or ICU

SUGGESTED INITIAL ORDERS AND EVALUATION

1. All patients: ABC's, c-spine evaluation and vital signs, thorough assessment to evaluate for precipitating causes, co-existing illnesses and co-morbid disorders
   - e.g. infection, head trauma, pancreatitis, cirrhosis, GI bleeding, Acid-Base disorders, Wernike's encephalopathy (ataxia, ophthalmoplegia, delirium), lactic acidosis, depression, psychosis, suicidality.
   - Consider neuro imaging (CT-scan) in patients with signs or history of trauma or abnormal neurological exam
2. All Patients: Serum alcohol level, hepatic profile, PT/INR, electrolytes with Mg, PO_4, BUN/Cr, CBC. As appropriate: toxicology screen, B_{12} and folate
3. EKG if electrolyte derangements, history of cardiac disease or age ≥ 40 years
4. Anticipate fluid, electrolyte and nutritional imbalances, including alcohol ketoacidosis and starvation ketoacidosis
   - IV is preferable for first dose of thiamine, folate, MVI and dextrose
   - Daily x 7 days: thiamine 100 mg PO/IV, folate 1 mg PO/IV, and MVI PO/IV
   - Replete with IV fluid with either D_5 0.9NS or D_5 0.45NS
   - Correct hypomagnesemia, hypokalemia and hypocalcemia
5. Consider NPO if compromised mental status, severe agitation and risk for aspiration
6. Consider restraints and continuous observation as per hospital policy
7. Consider consulting the Psychiatry Consult Liaison Service for difficult cases
8. Consult Social Work for after care and outpatient detoxification/rehab follow-up

MEDICATIONS AND SEDATION

- Chlordiazepoxide and diazepam
  - Longer duration of action (active metabolites) may decrease rate of breakthrough symptoms and have an added auto-tapering effect
- Diazepam
  - Short onset and therefore is preferred for rapid titration in severe cases
- Lorazepam
  - Longer onset may lead to iatrogenic over-sedation if titrated to rapidly
  - Preferred over diazepam in the presence of COPD, hepatic dysfunction (INR >1.6) and/or renal dysfunction (Cr_{Cl}<30ml/min, S_{cr} >2mg/dL) and/or age >65 years
  - Lorazepam infusions carry risk of propylene glycol toxicity with metabolic acidosis and renal failure, and have numerous drip incompatibilities
- Avoid using two different benzodiazepines (i.e PO chlordiazepxide and IV benzodiazepine) together except during the phasing in of "tapering" or the initial control phase in a patient who is crossing over from milder to more severe symptoms
- Avoid treating adrenergic overactivity with beta blockers and clonidine, unless necessary for co-morbid hypertension, arrhythmia, ischemic heart disease, etc.
- Avoid neuroleptics as treatment for withdrawal, only use to treat co-morbid psychiatric disorders
- Ethanol therapy is not recommended (IV or PO)

TAPERING

- Once initial control (or a stable trend established) of withdrawal is achieved with benzodiazepine and/or phenobarbital/propofol, a plan for tapering must be considered
- Taper by ~ 20% per day of total DAILY benzodiazepine equivalent dose (See Table below)
- Taper with chlordiazepoxide when possible (anticipate starting with ≥100 mg chlordiazepoxide PO every 2-8 hrs in severe cases)
- Patients treated with long acting agents with active metabolites may exhibit an "auto-taper" effect (varies between patients) while still using STT
- If CIWA-Ar scores increase to >10, give supplemental medication and consider a slower taper.
  - e.g. Patient A had a total of 700mg chlordiazepoxide PO and 8 mg lorazepam IV over 24 hrs = ~900 mg chlordiazepoxide, the next days dose should be 720 mg/day (divided every 6-8 hrs)
- Taper propofol infusions early (2-3 days) due to infection risk and triglyceride elevation
- Taper lorazepam infusions by 20% per day
- For patients on continuous infusions, once the patient is stable, begin transitioning to chlordiazepoxide (PO/NGT)

Benzodiazepine Equivalents

Benzodiazepine	PO	IV	T1/2	Comments
Chlordiazepoxide	50 mg	n/a	5-100 h*	Active metabolites*
Clonazepam	1 mg	n/a	20-50 h	
Diazepam	10 mg	5 mg	30-100 h*	Active metabolites*
Lorazepam	2 mg	1 mg	10-20 h	

NewYork-Presbyterian
The University Hospital of Columbia and Cornell

PILOT 7/5/09

Management of Alcohol Withdrawal: Clinical Guidelines for Medicine and the ED

Always use clinical judgment to customize patient therapy when applying clinical guidelines

Consider
1. Precipitants/Co-Existing Illness: Trauma, infection, pancreatitis, etc.
2. Co-morbid medical and psychiatric diagnoses, including suicidality.
3. Iatrogenic i.e. evolution of symptoms while hospitalized.
4. Previous history of alcohol withdrawal.
5. Dehydration, electrolyte and vitamin deficiencies.

Does the patient meet eligibility criteria for Alcohol Withdrawal?
Is the patient at RISK for Alcohol Withdrawal?
History of severe withdrawal/DT's?
Consider co-morbidities and precipitants?

Criteria/Risk for Alcohol Withdrawal
1. Physiologic tolerance to alcohol, from years of heavy use.
2. Cessation or reduction in alcohol intake.
3. Development of typical withdrawal symptoms 6-96 hrs post cessation or reduction of alcohol intake.

Classify patient into Mild, Moderate or Severe Alcohol Withdrawal Category
Use CIWA-Ar score and clinical picture to guide medication dosing
Dosing may need to be customized to meet each patients needs

Mild	Moderate	Severe	Delirium Tremens (DTs) & Resistant Alcohol Withdrawal (RAW)
CIWA-Ar Score of ≤ 10	**CIWA-Ar Score of 11-15**	**CIWA-Ar Score of ≥16** **Very Severe >25**	
Discharge or Admit (Medical, Psychiatry or Detox)	Consider Medical Admit ± Tele	Consider SDU/ICU Admit	
Clinical Picture: Mild anxiety, insomnia, moist palms, craving	**Clinical Picture:** Tremulousness, psychomotor agitation, mild-moderate confusion, transient hallucinations, nausea/vomiting, nightmares/insomnia, moist skin	**Clinical Picture:** Delirium, severe disorientation, confusion, agitation, pronounced diaphoresis, tremors, seizures, visual and tactile hallucinations
Typical Vital Signs: HR 80-100 SBP normal to >20-30 above baseline DBP normal to >10-20 above baseline (If baseline unknown ~ 120-140/90-100)	**Typical Vital Signs:** HR 100-120 SBP > 30-60 above baseline DBP >10-20 above baseline (If baseline unknown ~ 130-160/90-100)	**Typical Vital Signs:** HR > 120 SBP >60 above baseline DBP > 20 above baseline (If baseline unknown ~ >160/90)

The categories are approximations along a continuum/clinical spectrum.
For ALL patients with Alcohol Withdrawal and for patients AT RISK FOR Alcohol Withdrawal, consider suggested initial orders/evaluation
Use Alcohol Withdrawal tracking spreadsheet to track CIWA-Ar scores, vital signs and medication requirements over time

NewYork-Presbyterian
The University Hospital of Columbia and Cornell

PILOT 7/5/09

Management of Alcohol Withdrawal: Clinical Guidelines for Medicine and the ED

Always use clinical judgment to customize patient therapy when applying clinical guidelines

Mild	Moderate	Severe	Delirium Tremens (DTs) & Resistant Alcohol Withdrawal (RAW)
CIWA-Ar Score of ≤ 10	**CIWA-Ar Score of 11-15**	**CIWA-Ar Score of ≥16 Very Severe >25**	
Discharge or Admit (Medical, Psychiatry or Detox)	Consider Medical Admit ± Tele	Consider SDU/ICU Admit	

USE LOWEST EFFECTIVE DOSES TO MAINTAIN DESIRED DEGREE OF SEDATION, TITRATE UP AS NEEDED TO GAIN INITIAL CONTROL

Re-dose medications according to symptoms to achieve CIWA scores ≤ 8-10 or to achieve light sedation

Chlordiazepoxide prophylaxis 100mg PO x1 is indicated when CIWA-Ar <8 if history of severe AWD/DT's or RAW **AND** if ED work-up/observation or inpatient admission is anticipated

CIWA-Ar score <8

No treatment, reassess every 4 hr is stable, earlier if clinical picture changes

If CIWA-Ar <8 & if patient is eligible for discharge, may discharge

CIWA-Ar score ≥ 8-10

Chlordiazepoxide 50 mg PO x1

Then, reassess CIWA score 1 hr after medication dose and redose if CIWA >8

If CIWA remains <8-10 may reassess every 4 hrs then redose prn

Goal = CIWA-Ar score ≤8-10

If CIWA-Ar 8-10 **AND** medically stable x 4 hrs may admit to psychiatry and/or "Detox", unless history of severe AWD/DT's/RAW

If > 300 mg used in 4 hrs **OR** CIWA-Ar ≥11 for 4 hrs (despite treatment) **anticipate using IV medications AND upgrade to moderate or severe scale**

In patients with a co-morbid psychiatric diagnosis, CIWA-Ar scores must be combined with the clinical picture to attempt to differentiate acute psychiatric symptoms from acute AWD

If CIWA-Ar scores <8 x 24 hrs **AND** patient is eligible for discharge, may discontinue treatment or discharge

Chlordiazepoxide 100 mg PO X1

Reassess CIWA-Ar score 1 hr after medication and redose if CIWA >8. May re-dose every 1 hr

If > 300 mg used in 4 hrs **OR** CIWA-Ar ≥11 for 4 hrs (despite treatment)**, anticipate using IV medications**

Diazepam 5 mg IV x1 (preferred)

Reassess in 10 min and redose if CIWA-Ar ≥8. If 5 mg not effective, increase to 10 mg every 10 min for subsequent doses

OR

Lorazepam 1 mg IV x1

Reassess in 20 min and redose if CIWA-Ar ≥8. If 1 mg not effective, increase to 2 mg every 20 min for subsequent doses

---

If ≥ 40 mg diazepam or ≥6 mg lorazepam used in 1 hr, consider possibility of severe withdrawal

If ≥100 mg diazepam or ≥10 mg lorazepam used in 4 hrs **OR** if CIWA-Ar ≥16 for 4 hrs, upgrade to severe **AND** consider alternate diagnosis **AND consult Pulmonary Triage**

Goal = CIWA-Ar score ≤8-10

Reassess Clinical Picture, CIWA-Ar score & VS at minimum of every 4 hrs once symptoms are stable

If CIWA-Ar increases to ≥11, re-dose at last effective dose (not cumulative)

If CIWA-Ar remains ≤8-10 may reassess every 4 hrs then redose prn

Once CIWA-Ar stable between 8-12 for 24-48 hrs, taper doses by 20% per day

CIWA-Ar Score of ≥16 or high benzodiazepine doses used Consult Pulmonary Triage & consider Psychiatry Consult Lesion service

Diazepam 10 mg IV x1 (preferred)

Reassess in 10 min and redose if CIWA-Ar >10. If 10 mg not effective, increase to 20 mg every 10 min for subsequent doses

OR

Lorazepam 2 mg IV x1

Reassess in 20 min and redose if CIWA-Ar >10. If 2 mg not effective, increase to 4mg every 20 min for subsequent doses

---

If ≥200 mg in the initial 3 hrs or ≥400 mg in the first 8 hrs of diazepam **OR** ≥30 mg in the initial 3 hrs or ≥60mg in the initial 8 hrs of lorazepam **OR** CIWA-Ar >25 **OR** frank delirium, assume DT's or RAW **AND** consider alternate diagnosis **AND CONSULT PULMONARY TRIAGE**

Floor Goal= CIWA-Ar ≤ 10, light sedation

ICU Goal= CIWA-Ar ≤ 10, RASS 0 to -3

Reassess Clinical Picture, CIWA-Ar score & VS at minimum of every 2 hrs once symptoms are stable

If CIWA-Ar increases to ≥ 13, redose medication at last effective dose (not cumulative)

If CIWA-Ar increases to ≤12, redose at half the last effective dose (not cumulative)

If CIWA-Ar 10-15 for 12 hrs, then downgrade to moderate dosing regimen (tapering per moderate scale)

NewYork-Presbyterian
The University Hospital of Columbia and Cornell

Management of Alcohol Withdrawal: Clinical Guidelines for Medicine and the ED PILOT 7/5/09

Always use clinical judgment to customize patient therapy when applying clinical guidelines

ICU: Delirium Tremens and/or Resistant Alcohol Withdrawal (RAW)

Persistent CIWA-Ar ≥25, frank delirium or inability to control symptoms despite medication

AND/OR

≥200 mg in the initial 3 hrs or ≥400 mg of diazepam in the first 8 hrs **OR** ≥30 mg in the initial 3 hrs or ≥60mg of lorazepam in the initial 8 hrs **AND** alternate diagnosis considered **AND ADMIT TO ICU**

USE LOWEST EFFECTIVE DOSES TO MAINTAIN DESIRED DEGREE OF SEDATION, TITRATE UP AS NEEDED TO GAIN CONTROL

Re-dose medications according to symptoms to achieve CIWA scores ≤ 10-15 or to achieve light to moderate sedation (RASS 0 to -3). Score both CIWA and RASS in ICU.

Diazepam is preferred unless: significant COPD, hepatic dysfunction (INR >1.6) and/or renal dysfunction (Cr_{Cl}<30ml.min, S_cr >2mg/dL) and/or age >65.

Increased risk for iatrogenic over-sedation with **lorazepam** secondary to **delayed peak effects** (20-30 mins).

ICU Goal= CIWA-Ar ≤ 10, RASS -1 to -3

Diazepam 20 mg IV x1 (preferred)

Reassess in 10 min and redose at 20 mg if CIWA-Ar ≥13 or RASS ≥1

If ineffective, increase to 40 mg every 10 min for subsequent doses. If CIWA-Ar ≤12 or RASS ≤0 give half the last dose (not cumulative)

OR

Lorazepam 4 mg IV x1

Reassess in 20 min and redose at 4 mg if CIWA-Ar ≥13 or RASS ≥1

If 4 mg not effective, increase to 6 mg every 20 min for subsequent doses. If CIWA-Ar ≤12 or RASS ≤0 give half the last dose (not cumulative)

If ≥200 mg in the initial 3 hrs or ≥400 mg of diazepam in the first 8 hrs **OR** ≥30 mg in the initial 3 hrs or ≥60mg of lorazepam in the initial 8 hrs **AND** alternate diagnosis considered, move to RAW treatment algorithm below.

⬇

Continue symptom triggered therapy with high dose diazepam (preferred) or high dose lorazepam (may need to consider lorazepam continuous infusion, this is the least favored option for non-intubated patients and should be reserved for selected patients with above contraindications)

Bolus therapy may reach doses as high as 2000 mg diazepam/day or 200 mg/day or lorazepam

CONSIDER ADDING

1) Phenobarbital (with interspersed benzodiazepines):

Phenobarbital 60 mg IV (bolus) every 30 min – consider halving total daily dose of benzodiazepines if starting phenobarbital and not intubated.

Though the goal of this strategy is to avoid intubation, ***intubation may be required*** due to respiratory depression with concurrent benzodiazepine therapy.

2) Propofol if ≥ 5 doses of phenobarbital over 8 hrs and patient is still having severe symptoms **(*intubation required*)**

Propofol - No Bolus, start drip at 5-10 micrograms/kg/min and titrate to sedation (RASS -3 to -4), maximum dose of 80 micrograms/kg/min.

***3**) **Lorazepam infusion**- start at 2mg/hr, bolus at 1-2mg every 30 min as necessary and increase drip by 1-2 mg/hr as needed

Reassess Clinical Picture, CIWA-Ar score & VS at minimum of every 1 hr until symptoms are stable. Redose medication at last effective dose if CIWA-Ar ≥13 or RASS ≥1, re-dose at half the last dose for CIWA-Ar ≤12 or RASS ≤0. Hold medication if CIWA-Ar ≤8 or RASS ≤- 3 (unless intubated).

ALL patients will require medication TAPERING once stabilized. Begin tapering after 48 hrs or once a stable trends has emerged. Taper by 20% per day.

*If patient requires sedation for co-existing condition, titrate sedation to achieve desired RASS goal and begin tapering when clinically stable (use caution when holding sedation for daily interruption).

RESPONSIBILITY:

Subcommittee for Critical Care Therapeutics

REFERENCES:

1. Gold et al: A strategy of escalating doses of benzodiazepines and phenobarbital administration reduces the need for mechanical ventilation in delirium tremens. Crit Care Med 2007; 35 (3): 724-730.
2. Hamilton RJ. Substance withdrawal. In: Goldfrank LR et al eds: Goldfrank's Toxicologic Emergencies, Seventh Ed. Stamford, Conn, Appleton and Lange, 1998, pp1054-1074
3. Jaeger TM et al. Symptom-triggered therapy for alcohol withdrawal in medical inpatients. Mayo Clin Proc. 2001;76(7): 695-701
4. Saitz R, Mayo-Smith M, Roberts MS, Redmond HA, Bernard DR, Calkins DR. Individualized treatment for ethanol withdrawal. JAMA. 1994; 272:519-523
5. Mayo-Smith MF, for the American Society of Addiction Medicine Working Group on Pharmacological Management of Ethanol Withdrawal. Pharmacological management of ethanol withdrawal: A meta-analysis and evidence based practice guideline. JAMA. 1997; 278:144-151
6. Sullivan JT et al. Benzodiazepine requirements during alcohol withdrawal syndrome: clinical imperssions using a standardized withdrawal scale. J Clin Pharmacol. 1991;11:291-295
7. Victor M, Adams RD. The effect of ethanol on the nervous system. Res Publ Assoc Res Nerv Ment Dis. 1953; 32:526-573.
8. Victor M, Brausch C. The role of abstinence in the genesis of alcoholic epilepsy. Epilepsia. 1967; 8:1-20.

GUIDELINE DATES:

Issued:	June 2009
Reviewed:	May 2010
Revised:	
Medical Board Approval:	May 2012