

Review of the management of Acute Alcohol Withdrawal

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NICE is a British organization, the National Institute for Health and Clinical Excellence, which reviews the evidence for the diagnosis and management of many different clinical conditions. The guidelines produced are based on the evidence found in the international literature and are used in the UK as a baseline for excellent clinical practice.

In this journal we will give summaries of topics covered by NICE, together with some tips on how you may need to adjust them based on the local realities in Nepal. You can access the full guidelines yourself by going to: www.nice.org.uk

Alcoholism is a huge problem in Nepal. It has a major impact on the health of the individual, but also on families and on society. This review aims to cover the latest evidence base for management of acute alcohol withdrawal, drawn largely from the NICE clinical guideline 100 [1]. It is worth remembering though that without follow-up and ongoing counseling these patients will soon return to their previous drinking habits. In future publications we will be reviewing the options available for this in Nepal.

How do we define acute alcohol withdrawal?

The DSM-IV diagnostic criteria for Alcohol Withdrawal is shown below:

DSM-IV Diagnostic Criteria for Alcohol Withdrawal

- A. Cessation of (or reduction in) alcohol use that has been heavy and prolonged.
- B. Two (or more) of the following, developing within several hours to a few days after criterion A:
 - (1) Autonomic hyperactivity (eg, sweating or pulse rate_{>100/min})
 - (2) Increased hand tremor
 - (3) Insomnia
 - (4) Nausea or vomiting
 - (5) Transient visual, tactile, or auditory hallucinations or illusions
 - (6) Psychomotor agitation
 - (7) Anxiety
 - (8) Grand mal seizures

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- C. The symptoms in criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder. Specifically whether with perceptual disturbances.

Who needs inpatient management?

When a patient with alcohol dependency presents to you, one of the first decisions you need to make is whether they need hospital admission.

The following patients should be admitted to hospital:

- Those at high risk of developing delirium tremens as defined by:
 - o History of alcohol withdrawal seizures
 - o History of DTs
 - o Signs and symptoms of autonomic hyperactivity (sweating, tachycardia)
- Those with alcohol withdrawal delirium
- Those with acute alcohol withdrawal who are vulnerable (frail, cognitive impairment, lack of social support, multiple co-morbidities)

Some patients with alcohol dependency do not require admission to hospital. These patients include:

- Those who are alcohol dependent who have a normal diet
- Those who are not at high risk of developing delirium tremens
- Those with no previous history of alcohol related seizures.

Assessment of thiamine deficiency

All patients presenting with alcohol dependency problems should be assessed for thiamine deficiency. The NICE guidelines for administration of thiamine depend on whether the patient is high risk or low risk. Low risk is defined as alcohol dependent but taking a normal diet.

High risk is defined as an alcohol dependent patient with:

- Decompensated alcoholic liver disease
- Acute alcohol withdrawal
- Planned medically assisted alcohol withdrawal
- Malnutrition
- Hospitalized for any acute illness.

Recognition of Wernicke's encephalopathy

From medical school, many of us remember the term, Wernicke's encephalopathy which occurs in people with a history of alcohol abuse and concurrent thiamine deficiency.

The classic triad of Wernicke's encephalopathy includes global confusion, eye signs and ataxia. The confusion usually presents as poor memory, apathy and disorientation rather than drowsiness. Eye signs include nystagmus, gaze palsies and ophthalmoplegia. Ataxia is truncal and involves the lower extremities, so is best tested by observing gait.

These clinical abnormalities occur due to degenerative changes in the structures around the third ventricle and aqueduct. They may develop acutely or over the space of several days.

However only 10% of patients with Wernicke-Korsakoff syndrome will present in this classical fashion and a high index of suspicion is required in any patient with a history of harmful drinking and **one or more** of the following (otherwise unexplained) symptoms:

- Ataxia
- Ophthalmoplegia, nystagmus
- Confusion, memory disturbance
- Comatose/unconscious
- Hypotension and/or hypothermia

The pathogenesis is most likely linked to inadequate dietary intake and poor thiamine absorption. Absorption of thiamine appears to be independently affected by both alcohol and malnutrition. Absorption is reduced by around 70% in abstinent malnourished previous alcohol misusers and the remaining absorption is reduced by a further 50% in a third of patients by the concomitant administration of alcohol. Other factors commonly

seen in alcohol misusers such as poor diet, diarrhoea and vomiting may additionally affect absorption. Once alcohol is stopped, oral thiamine absorption may take six weeks to return to normal.

It is very important that intravenous dextrose is not given to a thiamine deficient patient without first administering parenteral thiamine. Thiamine requirements are linked to carbohydrate and giving IV dextrose first will dramatically increase thiamine requirements leading to sudden, profound Wernicke's encephalopathy.

Management of thiamine deficiency

In the low risk patient (see definition above) no thiamine is needed. In the high risk patient:

- a. If attending OPD and not requiring hospitalization for alcohol withdrawal
 - i. Prophylaxis with oral thiamine 200 – 300mg daily
- b. If attending ER and requiring hospitalization for alcohol withdrawal, but no evidence of Wernicke's:
 - i. Give prophylaxis with IV thiamine hydrochloride 250mg single dose, followed by oral thiamine 200 – 300mg daily
- c. If attending ER and requiring hospitalization for alcohol withdrawal, and **any** clinical suspicion of Wernicke's encephalopathy:
 - i. Give treatment with IV thiamine hydrochloride 500mg every 8 hours for a minimum of 5 days
 - ii. After 5 days of parenteral therapy give oral thiamine therapy.

IV thiamine can lead to anaphylaxis, so it is important to give it by slow IV infusion over 30mins. In practice this is easiest if you mix the thiamine in a bag of 500mls normal saline and give over one hour.

There is no strong evidence for the optimum length of time to give oral thiamine. In the context of Nepal, it may be reasonable to give 200 – 300mg daily for the first 1 week and then 100mg daily for one month, as oral

thiamine absorption takes about six weeks to return to normal after alcohol is stopped.

Management of acute alcohol withdrawal

There is strong evidence now that the best management for acute alcohol withdrawal is with long acting benzodiazepines such as diazepam or chlordiazepoxide. A reasonable alternative would be carbamazepine.

The evidence also shows that the best way to administer these benzodiazepines is to follow a symptom triggered regimen, using a clinical assessment tool such as the Clinical Institute Withdrawal Assessment – Alcohol, revised [CIWA-Ar] scale, together with clinical judgement. The CIWA-Ar is a 10 point assessment tool that can be used by doctors or nurses. (See Appendix 1) Patients who are given diazepam only when triggered by a certain level of symptoms have been shown to have as good a clinical outcome as those with regular dosing regimens, but with, on average a much lower total dose of diazepam given. A few patients end up needing much higher doses of diazepam. This suggests that the normal standardized dosing regimens lead to much over treatment of patients and significant under treatment in a minority.

In the context of Nepal, you may not always have sufficient staff to administer the assessment tool on a regular basis and monitor the patient response. In this situation, or where you are planning to allow the patient to take detoxification medication at home under the supervision of their family, then the following treatment regimen is recommended:

- Withhold the first dose until the patient has some symptoms.
- Oral diazepam 10mg every 6 hours (may need to adjust dose and frequency depending on the response)
- Reduce the dose of diazepam by 50% every two days

The diazepam should be stopped after one week. Longer courses of benzodiazepines lead to dependence and have no extra benefit in reducing alcohol cravings in the long term.

Management of delirium tremens or seizures

In either of these situations, the preferred treatment is with a short acting benzodiazepine such as lorazepam, preferably orally. If the patient refuses oral treatment then lorazepam can be given IV.

The following is a suggested treatment regimen, in the very agitated patient, where IV lorazepam is not available:

- IV diazepam 5mg
- If the initial dose is not effective, repeat the dose in 5 to 10 minutes
- If the second dose of 5mg is not satisfactory, use 10mg for the third and fourth doses, every 5 to 10 minutes
- If this is not effective use 20mg for the fifth and subsequent doses until sedation is achieved.

Use 5 to 20mg of diazepam every hour as needed to maintain light somnolence (patient awake but falls asleep easily if not stimulated). Patients requirement for control of agitation differ widely and need to be titrated individually.

Where the patient with delirium tremens is not improving, haloperidol or olanzapine can be used.

Phenytoin should not be used in the management of alcohol related seizures.

Other co-morbid conditions

Patients with alcohol dependency may have multiple other co-morbid conditions, which may be masked by their acute alcohol withdrawal state. Whilst tachycardia and hyperpyrexia with altered consciousness may be due to delirium tremens, there may also be co-existing meningitis/encephalitis, pneumonia or UTI. These patients are malnourished and prone to infection. Their infection may have caused them to be too weak to seek alcohol and so they present in DTs to the emergency department.

In addition, alcoholic patients are at high risk of unrecognized head trauma. This should also be remembered and monitored for.

In the context of Nepal, basic minimum investigations would include blood glucose, prothrombin time and AST. In rural situations, perhaps only a blood glucose is possible. Remember to always administer thiamine before giving glucose IV. Not all patients need to have an ultrasound or full LFTs. Many of these patients are poor, perhaps as a result of their addiction. Further investigations should be sent based on the clinical findings.

Follow-up

As mentioned at the beginning of this review, it is vital that patients in acute alcohol withdrawal are followed up, preferably by an organization such as Alcoholics Anonymous. In further reviews we will discuss the options available in Nepal.

KEY POINTS

1. Assess patients for their risk of developing delirium tremens or seizures and admit accordingly
2. Assess patients for their risk of thiamine deficiency and treat
3. Have a high index of suspicion for Wernicke's encephalopathy, only 10% present with the classical triad.
4. Long acting benzodiazepines are the best treatment for acute alcohol withdrawal
5. Short acting benzodiazepines should be used in delirium tremens or seizures
6. Best to use a symptom triggered treatment regimen (using CIWA-Ar tool)
7. Alternatively use a standard regimen, reducing the dose of benzodiazepine by 50% every 2 days, and stop after one week.
8. Don't forget the possibility of co-morbid illness

Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar) scale (appendix 1)

Scoring

Cumulative Score

0-7	No medication is necessary
8-14	Medication is optional for patients with a score of 8–14
15-20	A score of 15 or over requires treatment with medication
>20	A score of over 20 poses a strong risk of Delirium tremens
67	Maximum possible cumulative score

Assessment Tool

1. Nausea and Vomiting

Ask: "Do you feel sick to your stomach? Have you vomited?"

Score

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

2. Tremor

Arms extended and fingers spread apart

Score

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

3. Paroxysmal Sweats

Score

0	no sweat visible
1	barely perceptible sweating, palms moist
2	
3	
4	beads of sweat obvious on forehead
5	
6	
7	drenching sweats

4. Anxiety

Ask: "Do you feel nervous?"

Score

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

5. Agitation

Score

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

6. Tactile Disturbances

Ask: "Have you any itching, pins and needles sensations, burning sensations, numbness or do you feel bugs crawling on or under your skin?"

Score

- 0 none
- 1 very mild itching, pins and needles, burning or numbness
- 2 mild itching, pins and needles, burning or numbness
- 3 moderate itching, pins and needles, burning or numbness
- 4 moderately severe hallucinations
- 5 severe hallucinations
- 6 extremely severe hallucinations
- 7 continuous hallucinations

7. 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 you know are not there?"

Score

- 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

8. Visual Disturbances

Ask: "Does the light appear to be too bright? Is its colour different? Does it hurt your eyes? Are you seeing anything that is disturbing to you? Are you seeing things you know are not there?"

Score

- 0 not present
- 1 very mild sensitivity
- 2 mild sensitivity
- 3 moderate sensitivity
- 4 moderately severe hallucinations
- 5 severe hallucinations

- 6 extremely severe hallucinations
- 7 continuous hallucinations

9. Headache, Fullness in Head

Ask: "Does your head feel different? Does it feel as if there is a band around your head?" Do not rate for dizziness or lightheadedness. Otherwise, rate severity.

Score

- 0 not present
- 1 very mild
- 2 mild
- 3 moderate
- 4 moderately severe
- 5 severe
- 6 very severe
- 7 extremely severe

10. Orientation and Clouding of Sensorium

Ask: "What day is this? Where are you? Who am I?"

Score

- 0 oriented and can do serial additions
- 1 cannot do serial additions or is uncertain about date
- 2 disoriented for date by no more than 2 calendar days
- 3 disoriented for date by more than 2 calendar days
- 4 disoriented for place and/or person

REFERENCES

1. NICE guidelines for Diagnosis and Clinical management of alcohol-related physical disorders (NICE clinical guideline 100)
2. http://en.wikipedia.org/wiki/Clinical_Institute_Withdrawal_Assessment