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Managing Substance Use Disorders in Emergency Departments

Quick reference for service providers working with adults who use alcohol or other drugs

Benzodiazepines to treat alcohol withdrawal

Symptom-triggered protocols such as CIWA-Ar (Clinical Institute Withdrawal Assessment for Alcohol) are recommended to treat alcohol withdrawal. CIWA is not appropriate for treating withdrawal from other substances. CIWA scores can under- or overrepresent withdrawal and should be taken with objective vital signs. Signs of undertreatment include tachycardia and hypertension.

Diazepam 10 mg (or lorazepam 1 mg) for scores over 10, and diazepam 20 mg (or lorazepam 2 mg) for scores over 16 are acceptable hourly doses. Patients with history of seizures or delirium tremens should be loaded with diazepam 20 mg q1 hour x 3 hours or lorazepam 2 mg q1 hour x 3 hours (60 mg of diazepam or 6 mg of lorazepam over 3 hours).

Benzodiazepines to treat alcohol withdrawal *(continued)*

Lorazepam and oxazepam should only be given to patients over the age of 70 and patients with synthetic liver dysfunction.

Mild alcohol withdrawal can be treated with carbamazepine and/or gabapentin if benzodiazepines are to be avoided.

Please refer to Tip Sheet for more recommendations.

Thiamine use for alcohol withdrawal

All patients going through alcohol withdrawal or at risk of alcohol withdrawal should be offered:
100 mg IM thiamine OR 250 mg IV thiamine

Oral thiamine is *not* an appropriate alternative.

Because of inconsistent clinical presentations, most cases of Wernicke encephalopathy (WE) are missed. **Thiamine 500 mg IV TID** should be administered for 3 days to patients manifesting confusion, gait abnormalities or any oculomotor dysfunction, and continued for up to 7 days if clinical improvement or imaging is consistent with WE.

Please refer to Tip Sheet for more recommendations.

Anti-craving medications for alcohol use disorders

All patients who misuse alcohol should be offered anti-craving medications.

Anti-craving medications are standard of care, safe to prescribe and covered by the Ontario Drug Benefit (ODB) program and private drug plans.

Naltrexone is an opioid antagonist with limited misuse potential that helps patients decrease heavy drinking and maintain abstinence in those who have stopped drinking.

Naltrexone dosing: 50 mg PO daily with first dose in the ED (LU code: 532). Avoid naltrexone if AST/ALT 3-4 times UNL and in patients on opioids. If liver function is unknown but there are no signs of advanced liver disease, naltrexone can be started, with outpatient testing done 4 to 6 weeks later.

Anti-craving medications for alcohol use disorders *(continued)*

Acamprosate is a glutamate antagonist and has limited misuse potential. It reduces sub-acute withdrawal symptoms and is the most effective medication to help patients maintain abstinence. It is best begun after alcohol cessation. Caution in patients with renal insufficiency.

Acamprosate dosing: 666 mg PO TID OR 333 mg TID if CrCl < 30 (LU code: 531).

Second-line medications include disulfiram, gabapentin and topiramate.

Please refer to Tip Sheet for more recommendations.

Buprenorphine for opioid use disorders

Buprenorphine is the first-line treatment for opioid use disorder and can be safely started in ED patients who have not used street opioids for more than 12 hours. For patients taking long-acting opioids, the fentanyl patch or methadone, longer periods since last opioid use are needed before starting buprenorphine.

Patients who score greater than 12 on COWS (Clinical Opioid Withdrawal Scale) can be given buprenorphine/naloxone:
Buprenorphine 2 mg followed by 4 mg 2 hours later.

Patients can be administered up to 12 mg of buprenorphine on Day 1.

Please provide a take-home naloxone kit and a prescription for buprenorphine 12 mg SL, with dosing observed daily until patient can be seen at a local RAAM clinic.

Buprenorphine for opioid use disorders *(continued)*

Buprenorphine microdosing is used increasingly as an option for people not yet able to stop using opioids or for people who are not in withdrawal at the time of assessment. Patients can be sent from ED with:

Day 1	Buprenorphine 0.5 mg SL daily	**Day 5**	Buprenorphine 3 mg SL BID
Day 2	Buprenorphine 0.5 mg SL BID	**Day 6**	Buprenorphine 4 mg SL BID
Day 3	Buprenorphine 1 mg SL BID	**Day 7**	Buprenorphine 12 mg SL daily
Day 4	Buprenorphine 2 mg SL BID		

The smallest available buprenorphine tablet is 2 mg, so the patient or pharmacist will need to split the tablet for 0.5 and 1 mg doses.

Generally illicit or prescribed opioids can be discontinued after day 6.

Source: Randhawa, P.A. (2020) *CMAJ*, 192 (3), E53–E60.

Please refer to Tip Sheet for more recommendations.

Naloxone dosing

The desired response to naloxone should be the establishment of adequate respirations, with an O2Sat > 90% and a pCO2 < 45 mmHg. The patient does not need to be fully awake and alert. A lower dose can help a patient stay and engage in care.

For the non-responsive patient who has a pulse, but is NOT BREATHING:

1. Attempt to stimulate respirations.
2. Assist respirations using bag-valve-mask set-up.
3. If no response to respiratory stimulation, administer naloxone 0.4 mg IV/IM.
4. IF NO RESPONSE in 3 minutes, administer naloxone 2 mg IV/IM.
5. IF NO RESPONSE in a further 3 minutes, administer naloxone 4 mg IV/IM.
6. Anticipate doubling the dose until a cumulative dose of 12 mg has been given. If still no response, the patient will need to be intubated and put on a ventilator.

Naloxone dosing *(continued)*

Some fentanyl analogues have longer half lives than fentanyl or heroin do. Repeated dosing of naloxone may be necessary and a urine drug screen can help clarify.

An intravenous infusion of naloxone at 2/3 wake-up dose per hour can be initiated and titrated based on patient response.

The patient must be monitored for ALL of the following conditions:

- for at least 6 hours after the last dose of naloxone
- until vital signs have returned to baseline vitals
- for normal GCS
- for at least 24 hours after the initial overdose.

For further recommendations, call the Ontario Poison Centre at 1 800 268-9017.

Adapted from: **www.ontariopoisoncentre.ca**

Please refer to Tip Sheet for more recommendations.

Barbiturates to treat alcohol withdrawal

Barbiturates have different GABA activity than benzodiazepines and can be effective agents for alcohol withdrawal treatment that is refractory to benzodiazepines.

Patients in severe withdrawal can be provided loading or adjuvant doses if they have no significant liver impairment, porphyria or other contraindications.

Loading recommendations: Either 1–2 mg/kg phenobarbital IV with dosing repeated 1 hr later if inadequate, OR a single 5 mg/kg phenobarbital IV dose.

Patients should be monitored closely for at least 4 hours, and symptom-triggered benzodiazepine protocols should be continued.

Barbiturates to treat alcohol withdrawal *(continued)*

In addition to symptom-triggered benzodiazepine protocols, 180 to 300 mg per day of phenobarbital can be added—divided into 3 or 4 times daily dosing as an adjuvant.

Phenobarbital can be tapered over 2 to 3 days. Phenobarbital initiation may indicate the need for admission to hospital. We suggest not providing a prescription for barbiturates on discharge.

Other agents with demonstrated benefit in treating alcohol withdrawal include ketamine, propofol, dexmedetomidine, carbamazepine and gabapentin. Please refer to local protocols at your institution.

Please refer to Tip Sheet for more recommendations.

Treating acute pain in people with substance use problems

Appropriate treatment of severe pain is essential for optimal treatment outcomes, keeping in mind that people who inject opioids have daily tolerance from 500 to 3000 oral morphine equivalents. **Continue or restart opioid agonist therapy PLUS morphine 10-20 mg q 3 hours PO PRN OR hydromorphone 3–6 mg q 3 hours PRN—with the dose increased by 50% every 2 to 3 hours if there is ongoing pain or withdrawal without signs of sedation AND Morphine 5–10mg IV/SC q15-30 mins or hydromorphone 2–3 mg IV/SC q 15-30 mins PRN—increasing titration to achieve adequate pain control**.

Dosing of analgesic medications will be variable but should balance comfort and safety. Ideally include pharmacy and allied health clinicians in decision making, and optimize non-opioid analgesic medications.

Treating acute pain in people with substance use problems *(continued)*

Preference should be given to oral opioids ***in liquid form*** to decrease risk of diversion.

If admitted, convert PRNs to oral, long-acting formulations while the patient is in the hospital, so as to allow smooth transition to the community when discharged. Morphine is preferred if not contraindicated as Kadian can be given as a once daily long-acting formulation when the patient is discharged, and the patient can be daily observed taking the medication in pharmacy. (Note instructions to pharmacist for capsule to be opened and beads sprinkled in applesauce for daily witnessed ingestion.)

If continued after discharge, opioids for pain should be dispensed in limited quantities and in long-acting formulations.

Please refer to Tip Sheet for more recommendations.

Chemical restraint in crystal methamphetamine intoxication

A quiet, lower light environment is recommended to reduce stimulation.

Benzodiazepines should be trialled first:
Lorazepam 1-2 mg IV/IM q 10 minutes OR Midazolam 3-5mg IV/IN q 5 minutes.

Antipsychotic medications can further help with agitation. Consider olanzapine 5 mg SL PRN.

Avoid typical antipsychotics (Haldol) as patients are prone to extrapyramidal symptoms and neuroleptic malignant syndrome.

If available, consider dexmedetomidine (Precedex) as an alternative sedative treatment with a loading dose of 1 µg/kg/h, followed by infusion at a rate of 0.2 µg/kg/h.

Chemical restraint in crystal methamphetamine intoxication *(continued)*

Withdrawal following intoxication can often result in ongoing agitation and dysthymia. The following agents can help alleviate these symptoms:

- benzodiazepines (preference for longer-acting agents such as diazepam)
- seroquel (25mg QID)
- tricyclic antidepressants (avoid SSRIs)
- long-acting stimulants (e.g., methylphenidate SR, dexamphetamine). Caution should be exercised in people with history of stimulant-induced psychosis.

Consider starting mirtazapine for treatment of amphetamine use disorder. Withdrawal symptoms can persist for three weeks and can be managed symptomatically.

Please refer to Tip Sheet for more recommendations.