

Alcohol: Acute problems and withdrawal syndrome

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Harmful effects of alcohol

Harmful effects of alcohol include problems related to the following:

Regular use	Cardiovascular	Hypertension Arrhythmias Cardiomyopathy
	Gastrointestinal	Gastrointestinal bleeding Peptic ulcers Fatty liver Hepatitis and cirrhosis
	Central Nervous System	Headache Insomnia Reduced coordination Mood (depression & anxiety) and personality changes Memory loss Wernicke encephalopathy (ophthalmoplegia, ataxia & confusion) Korsakoff's psychosis (loss of memory and confabulation while other cognitive function is relatively intact) Peripheral neuropathy Impotence
	Metabolic & nutritional	Hyperuricaemia & gout Thiamine deficiency (Wernicke Korsakoff) Folate and B12 deficiency
	Pregnancy	Birth defects (foetal alcohol syndrome)
Intoxication	Increased risk of accidents Increased risk of violence	
Dependence	Family breakdown Financial crises Lost work days Crime	

Assessment

Key issues to consider in assessment are as follows:	
Drug history	Amount, frequency and circumstances of alcohol use All drugs used (licit and illicit): look for polydrug use
Treatment history	Previous periods of abstinence Previous experience of withdrawal and complications Helpful and hindering factors in previous treatment
Dependence	A maladaptive pattern of substance use leading to significant impairment with ? 3 of the following occurring at any time over a 12 month period (DSM IV): <ul style="list-style-type: none"> •tolerance •withdrawal •substance taken in larger amounts/periods than was intended •persistent use despite desire and efforts to cut down or control •a great deal of time spent in obtaining, using and recovering from effects of substance •important activities reduced because of substance use •substance use continues despite knowledge harm caused
Other Medical Problems	Liver damage Poor nutrition Neurological impairment Other general medical problems (all cause morbidity higher in alcohol use)
Psychiatric problems	Depression and anxiety are common Psychosis
Psychosocial issues	Supports Barriers Goals and expectations in treatment
Physical effects of alcohol use	Evidence of withdrawal (see below) or intoxication (alcohol on breath, ataxia, slurred speech, sedation, hypotension, disinhibition) Evidence of disease associated with alcohol: jaundice, Cushingoid appearance, red eyes, prominent facial capillaries, spider naevi, palmar erythema, Dupuytren's contracture, hepatomegaly, cardiomegaly, hypertension, peripheral neuritis

Withdrawal

The alcohol withdrawal syndrome is more likely to occur following cessation of at least eight standard drinks of alcohol daily for at least several months. It consists of autonomic and CNS hyperactivity.

1 standard drink = 10 g alcohol = 1 glass (120 ml) wine = 1 midi (285 ml) beer = 2 midis light beer = 1 glass (60 ml) port = 1 nip (30 ml) spirits.

Symptoms of withdrawal

Cardiovascular	Tachycardia and hypertension
Respiratory	Tachypnoea
Gastrointestinal	Nausea, vomiting and diarrhoea
Central nervous system	Agitation & anxiety Tremor Insomnia and nightmares Depression Hypersensitivity to stimulation & seizures Confusion, disorientation & hallucinations
Skin	Perspiration

[Editor: A mild fever can be part of the alcohol withdrawal syndrome, but always check for other cause of fever.]

Withdrawal scales can be useful in the assessment of the degree of withdrawal. The two most commonly used scales in Australia are the CIWA-Ar (Sullivan JT et al 1989. Br J of Addiction 84: 1353-1157) and the AWS (Novak, H (ed.) 1989. Nurse Education and Nursing Management of Alcohol and other drugs. CEIDA: Rozelle NSW). The former has 10 features to score and has been better validated in research, but the AWS (which has seven features to score) is briefer and somewhat easier to use. The current score recommended in this book is based on the AWS.

Detoxification

Arriving at the point of choosing to cease or reduce a drug is not easy and although many people may make this decision, multiple attempts are required before a sustained change is achieved. It is important therefore to be responsive to the 'window of opportunity' when a person presents wanting to reduce and or cease alcohol use.

Detoxification is only the beginning of a treatment plan. Many people relapse following initial detoxification. It is important to use the opportunity of detoxification to discuss longer-term goals and plans for providing support and preventing relapse.

In most cases detoxification from alcohol happens without any formal care from health care professionals. However, in the case of moderate to severe alcohol withdrawal, there is a risk of severe complications.

During detoxification the aim should be to support, improve comfort and to avoid complications. The most important complications are delirium tremens, Wernicke's encephalopathy and seizures.

Withdrawal treatment regimen

Supportive care	
Aim	Action
Minimising discomfort	Physical comforts: quiet, calm, clean, warm conditions, baths
Monitoring and reducing complications	Monitoring for signs of severe withdrawal and complications such as delirium tremens
Encouragement of engagement in longer term treatment	Counselling is not appropriate during acute withdrawal but consistent encouragement of later follow up is worthwhile.

Medication

Aim

Prevent complications (eg. delirium tremens, Wernicke's encephalopathy, seizures), treat symptoms, increase comfort during withdrawal.

Medications used

Sedative drugs reduce CNS hyperexcitability and reduce the risk of complications such as delirium tremens and seizures. The drug of choice is Diazepam.

Sedation is generally contraindicated if:

- An underlying cause of delirium or confusion cannot be reasonably excluded (e.g. subdural haematoma)
- Significant intoxication still present
- Blood alcohol level currently > 0.15%

Medications used

<p>Sedation (Doses modified according to weight, age, withdrawal symptoms and response)</p>	<p>Diazepam: Two possible regimens Regimen 1 10-20 mg every two hrs orally max 60-120 mg in the first 24 hrs usually minimal sedation required after first 24 hrs, medication usually can be ceased before day four. Regimen 2 (vary according to individual needs) Day 1-2: 10 mg qid with PRN 10 mg for individual variation Day 3: 10 mg qid Day 4: 5 mg bd may taper over two more days. NB. If previous history of seizures ensure there has been 40-80 mg of diazepam given on the first day.</p>
<p>Thiamine</p>	<p>100 mg IM daily for five days,* then daily oral 100 mg and multivitamins</p>
<p>Other medications which may be required</p>	<p>The following may be used according to symptoms/signs antipsychotics (haloperidol 5-10 mg oral or 2-10 mg IM is preferred as it has the least effect on lowering the seizure threshold, however be aware of the risk of seizures, hypotension and dystonic reactions) [Editor: Risperidone is also a good choice] NB. The drug of choice for hallucinations is diazepam. Haloperidol is used only if there is limited response to diazepam. [Editor: Get advice] Anticonvulsants (carbamazepine or phenytoin may be required if withdrawal seizures are refractory to diazepam Analgesics (paracetamol) Antiemetic (metoclopramide or prochlorperazine) Antidiarrhoeal Medication for dyspepsia (H2 antagonist [Editor: Or proton pump inhibitor])</p>

* The evidence does not support the use of oral thiamine since absorption is questionable (Australian Medicines Handbook 2000).

[Editor: The withdrawal treatment schedule in the fourth edition CARPA STM protocol emphasises the importance of other factors, such as past history of complicated alcohol withdrawal, and current illness, such as infection. Accordingly, the recommended doses of diazepam are given for different clinical scenarios with and without the risk factors for bad outcomes.

There are a number of diazepam regimens in use in specialist centres in Australia. They are similar in that they all use 'solid doses' of diazepam. We know of no comparative trials of different diazepam regimens in Aboriginal people. The differences between the dosing schedules and withdrawal scoring systems is probably less important than how carefully they are used and how well the person is monitored.

Other medications, such as metoclopramide for nausea and vomiting are mentioned, however diazepam is the main treatment and treatment of first choice. Gastrointestinal symptoms are usually due to the central nervous system reaction to the withdrawal of alcohol, and largely respond to diazepam. The balance of symptoms in alcohol withdrawal can vary, and in some instances CNS sedation with diazepam will occur before gastrointestinal symptoms are adequately controlled, and additional treatment is needed.

Alcohol is an irritant to the gastric mucosa and can cause acute gastritis. This is likely to start during the drinking rather than after it has stopped when withdrawal is prone to start.]

Monitoring for complications

It is important to monitor for complications, being particularly aware of:

- Early signs of delirium tremens
- Seizures
- Over sedation, especially in high risk groups (respiratory disease, hepatic disease, polydrug users, co-existing medical problems).

Alcohol withdrawal scales used at regular intervals are helpful in monitoring for complications.

Delirium tremens

Delirium tremens usually occurs two to five days after alcohol cessation or substantial reduction, but occasionally can occur up to seven days later. While it usually lasts three days, it can continue on for up to two weeks.

The features of delirium tremens can be remembered using the following (pneumonic 'CASE'):

Confusion	Confusion, disorientation, delusions (paranoid) and visual, auditory or tactile hallucinations,
Agitation	Extreme agitation, hyperactivity, gross tremor
Seizures	Generalised, onset day 1-4 after the last drink
Exaggerated features	Autonomic instability (pulse, BP and temperature fluctuations), fluid balance and electrolytes of withdrawal disturbance, exaggerated response to stimuli.

Risk factors for delirium tremens

The risk of developing delirium tremens increases if:

- There is a history of previous severe withdrawal reactions
- Withdrawal is severe
- There is concurrent illness such as infection or uncontrolled diabetes.

Mild confusion and disorientation may occur during simple withdrawal, but if persistent can signal the beginning of delirium tremens. It is important to consider other differential causes such as Wernicke's encephalopathy and subdural haemorrhage.

Hallucinations that occur in DTs are persistent and very distressing. They need to be differentiated from the following:

- Mild and transient hallucinations of a visual or tactile nature which may occur at anytime during detoxification.
- Alcoholic hallucinosis that occurs in the presence of a clear sensorium (no delirium), typically being auditory and derogatory in content. These do not generally occur during withdrawal.

Differential diagnoses of delirium tremens include all other causes of confusion including sepsis, hypoglycaemia and other metabolic disturbances, hypoxia, head injury, Wernicke's encephalopathy, hepatic encephalopathy and the effects of other drugs.

The management of delirium tremens

Complications include dehydration, hypotension, arrhythmias, cardiovascular collapse, renal failure and pneumonia. Delirium tremens is a medical emergency and is associated with a high mortality rate. Mortality is substantially reduced with adequate IV hydration, sedation and treatment of complications.

Seizures

Seizures occur in 5% of cases of withdrawal. They usually occur in the first two days and are generalised and not recurrent. Single episodes of generalised seizures are not associated with adverse outcome. Seizures are usually easily controlled by adequate doses of benzodiazepines. Anticonvulsant drugs should only be considered if seizures are not responsive to benzodiazepines. Status epilepticus can be treated with intravenous diazepam in standard doses.

Wernicke's encephalopathy

Wernicke's encephalopathy is defined by the triad of confusion, nystagmus with/without ophthalmoplegia, and ataxia. However, occurrence of each of the symptoms/signs of the whole triad is uncommon. Peripheral neuropathy is also present in 80% of cases. It can be difficult to diagnose since some of these signs can occur as part of intoxication.

It was common before the introduction of thiamine supplementation of food but is relatively uncommon now. It is prevented by the use of parenteral thiamine. There is no evidence to support the use of oral thiamine during acute withdrawal since gastrointestinal absorption can be impaired. Thiamine should be administered prior to giving glucose (including sweet drinks and food) since a carbohydrate load in the presence of thiamine deficiency may precipitate Wernicke's encephalopathy.

Relapse prevention

Counselling

Counseling during detoxification alone is unlikely to result in sustained effect. It is important to make arrangements for follow-up. Individual and group sessions can be offered.

Underlying mental illness

Some people may use alcohol as a form of self-medication for anxiety or depression. Alcohol use itself may cause an apparent depressive affect. The presence of depression is best assessed again after detoxification and treated appropriately.

Pharmacotherapy

The drugs shown on the following page are used to facilitate relapse prevention.

Medications used for relapse prevention in alcohol dependence

Drugs	Naltrexone	Acamprosate	Disulfuram
Recommendation	First-line	First-line	Second-line
Mechanism of action	Antagonism of opiate receptor	Regulates transmission along GABA neurones(probably through glutamate neurons)	Aldehyde dehydrogenase inhibitor
Reaction with alcohol	No aversive reaction Prevents pleasant 'high' effect of alcohol Sedation and adverse psychomotor effects still occur	No aversive reaction No alteration of CNS effect of alcohol or withdrawal symptoms	Aversive reaction, even with a small amount(including alcohol in cooking or skin products) can be dangerous (flushing, sweating, palpitations, nausea and vomiting, headache, dyspnoea, chest pain, hypotension, arrhythmias, cardiovascular collapse, convulsions)
Clear evidence of reduction in craving	Yes	Yes	No
Clear evidence of reduction in alcohol intake	Yes	Yes	Some evidence of decreased intake but compliance is a limiting factor
Clear evidence of increased abstinence	Yes	Yes	Some evidence of increased abstinence but compliance is a limiting factor
Evidence of effect post-drug therapy	No	Yes	No

Contra-indications	Opiate dependence Chronic pain requiring treatment with opiates Hepatic failure or active hepatitis (ALT >3x normal) Renal impairment Pregnancy (ADEC B3) Pregnancy (ADEC B2) Lactation (safety not established)	Renal impairment(excreted unchanged in the kidney) Pregnancy (ADEC B2) Lactation (no data in humans)	Allergy to disulfiram or thiamine derivatives (some pesticides, rubber products) Ischaemic heart disease Severe myocardial disease Psychosis Severe hepatic or renal disease Lactation (safety not established)
Drug interactions	Opioids (antagonism of action) Disulfiram (combination may result in increased hepatotoxicity)	None with diazepam, disulfiram or imipramine	Isoniazid (increased toxic reactions) Phenytoin (increased phenytoin levels) Metronidazole (increased toxic reactions) Naltrexone (potential hepatotoxicity from combination, no benefit shown of combination) Warfarin (increased anticoagulant effect)
Adverse effects	Nausea* Headache* Dizziness Anxiety Fatigue Insomnia Somnolence Rarely hepatotoxicity	Diarrhoea* Nausea & vomiting Abdominal pain Rash and pruritis Rarely libido changes and bullous skin reactions (*common)	Drowsiness* Drowsiness* Headache* Fatigue* Metallic or garlic taste disturbance Rarely jaundice, peripheral neuropathy, psychosis, confusion, optic neuritis, blood dyscrasias, rash
Preparation before commencing treatment	Commence after acute alcohol withdrawal but presence of alcohol is not a contraindication Ensure not dependent on opiates	Commence after acute alcohol withdrawal but presence of alcohol is not a contraindication	Ensure potential severity of reaction with alcohol is understood Ensure no alcohol has been consumed in the previous 24 hrs and advise that alcohol should not be consumed for 7 days after cessation of treatment
Dose	50 mg daily (can commence on 25 mg for 2-3 days to reduce incidence of side effects)	>60 kg 2 tabs tds, <60 kg 2 mane, 1 noon & 1 nocte	Initially 100 mg daily for 1-2 wks, maintenance 200 mg, max 300 mg daily