

Surgery and Substance Use

PATIENTS with substance use problems are common on surgical wards. People may suffer trauma while intoxicated, or vascular injury and infection from injecting drugs. In other cases, the substance use is unrelated to the indication for surgery and is easily missed.

Assessment for any form of surgery should involve brief assessment for any substance use issues including drug dependence. If problems are identified, intervention should commence at the earliest possible opportunity ideally by the treating team or via referral to drug and alcohol services. Delaying the treatment until development of avoidable post-operative withdrawal increases the costs of hospitalisation and leads to poorer outcomes.

Drug dependence is a chronic condition and consultation with a drug and alcohol specialist is advised coupled to continuing care after discharge from hospital.

Problems related to surgery in people with substance use problems include:

- pre-operative recognition and intervention
- anaesthetic problems
- post-operative withdrawal
- peri-operative morbidity and mortality
- management of drug seeking and drug use on the ward
- management of post-operative pain

Psychoactive substance use to consider in a patient about to undergo surgery includes:

- tobacco
- alcohol
- opioids
- benzodiazepines
- stimulants

Clinical concerns relate to both intoxication and dependence, and especially withdrawal in the case of the latter.

TOBACCO

The association between smoking and airways disease and post-operative chest infections is widely recognised.

Patients often accept the need to quit smoking pre-operatively and may be more receptive to consideration of the long-term benefits of quitting. Preparation for surgery should include advice to quit smoking and the offer of appropriate intervention or referral.

Post-operative nicotine withdrawal should be considered if:

- the patient smoked until the time of surgery; and
- complains of withdrawal symptoms such as craving for cigarettes and irritability

Post-operative symptoms may be multifactorial and other factors should be considered. Nicotine replacement therapy (NRT) should be offered where indicated and provided where no contra-indications (such as active ischaemic heart disease) are present. This often does not occur despite the high prevalence of nicotine dependence. Motivational interviewing to quit smoking long-term and referral for further treatment should be offered.

Attempts by in-patients to obtain cigarettes can be interpreted as drug seeking behaviour. Many hospitals do not permit smoking inside or even on hospital grounds. Staff should not help patients to obtain cigarettes or access smoking areas.

An exception should be made for patients in a palliative care setting or those with severe psychiatric comorbidity.

ALCOHOL

Alcohol and Post-operative Morbidity

Alcohol consumption exceeding 60 g per day adversely affects post-operative outcomes in several respects:

- increased total morbidity
- increased post-operative mortality
- significantly more care required
- longer duration of hospitalisation
- increased need for repeat surgery
- higher hospital costs

A broad range of morbidities may occur, including:

- alcohol withdrawal syndromes
- infections
- bleeding; and
- cardiopulmonary insufficiency

Follow-up after surgery has confirmed poorer outcomes.

The presence of alcoholic liver disease is associated with major increases in post-operative complications and assessment by a gastroenterologist or hepatologist is advised.

Adverse outcomes have been demonstrated in a variety of clinical settings including:

- colorectal surgery
- hysterectomy
- evacuation of subdural haematoma
- osteosynthesis of malleolar fractures

Peri-operative Management of Alcohol-related Complications

The pre-operative setting provides an opportunity time for intervention; however, clinical staff tend to focus on the surgical problem and alcohol problems are often overlooked.

It is crucial to obtain an accurate drug and alcohol history prior to surgery. Key questions must consider:

- drugs used (licit & illicit)
- patterns of use
- recency of use
- likelihood of tolerance and possibility of cross-tolerance with other drugs e.g. alcohol and benzodiazepines
- likelihood and severity of withdrawal

Pre-operative assessment should include:

- alcohol and drug history
- psychosocial history and available supports
- physical examination; e.g. monitor:
 - BP (blood pressure)
 - HR (heart rate)
- examine for signs of:
 - cardiomyopathy (rare)
 - respiratory disease
- laboratory tests:
 - liver disease (abnormal LFTs, signs of decompensation such as jaundice, ascites or encephalopathy)

- haematology (platelet count and coagulation studies)
- metabolic (BSL, electrolytes, magnesium)

If abnormalities are found, pre-operative specialist referral may be required.

An appropriate intervention should be initiated when disorders of alcohol use are recognised. Two weeks of abstinence from alcohol improves depressed cellular immunity, but two months of sobriety is necessary to normalise it. A randomised controlled trial has shown that intervention to reduce alcohol consumption prior to elective surgery reduces post-operative morbidity (Tonnesen et al., 1999). The nature of pre-operative treatment does not differ from alcohol interventions offered in other contexts and described elsewhere. Thiamine is given.



See Chapter 3
Alcohol

Surgery should be avoided in alcohol dependent patients until the course of withdrawal is complete. Surgery during withdrawal may increase withdrawal severity, likelihood of complications and risk of developing delirium tremens. Delirium tremens is a medical emergency associated with untreated alcohol withdrawal, occurring 3–14 days after stopping drinking. If surgery is unavoidable, withdrawal symptoms should be anticipated and managed as part of the post-operative management plan.

Post-operative confusion is often multifactorial with chest infection, hypoxia and delirium tremens often coexisting. In such settings, over-sedation must be carefully avoided.

OPIOIDS

Opioid dependence should be stabilised pre-operatively using methadone, commencing at 20–40 mg daily and increasing as required every 3 days.

More rapid increases may be used in hospital provided drowsy patients are not dosed. In this setting, twice daily dosing is effective. Many patients who will not accept methadone maintenance often accept in-hospital treatment. This increases retention in hospital and allows surgical treatment to be completed.

Maintenance after discharge can be encouraged and if taken up, the patient is switched to single daily dosing by simply combining the two doses 1-2 days before discharge.

Detoxification pre-operatively has been recommended, but patients usually require post-operative opioid analgesia so this approach is unlikely to succeed.

Post-operative analgesia is an issue. Patients may be conceptualised as suffering two disorders and should be prescribed appropriate treatment for both. It is important to explain to the patient that adequate analgesia will be provided and that opioid analgesia will be withdrawn when no longer indicated.

Decide an appropriate duration of parenteral treatment early in the management plan and advise the patient when parenteral medication will be switched to oral.

Non-opioid analgesia should be used as appropriate.

A higher dose of opioids will be required due to the presence of opioid tolerance.

Pethidine:

- is rarely an appropriate drug in this setting
- has a short half-life
- has marked euphoric effects and hence high abuse potential
- has the toxic metabolite norpethidine which commonly precipitates seizures after high doses

Continue or commence methadone and add longer acting opioids such as morphine for analgesia. Prescribe fixed doses of analgesia rather than p.r.n. dosing to minimise conflicts between staff and patients about when the next dose is due. Otherwise, requests for analgesia may be interpreted as drug seeking, or may evolve into drug seeking.

A trial of patient controlled analgesia (PCA) may be considered after surgery, but the patient should be instructed that PCA will stop if abused. In such cases, switch to a regimen of regular fixed dose morphine in adequate doses.

Extend the parenteral treatment if the clinical circumstances change but avoid this otherwise.

Consult the hospital drug and alcohol service. Set an appropriate discharge goal.

Opioid dependent people with a continuing need for analgesia are likely to return to heroin use after discharge from hospital. Methadone maintenance is strongly indicated in such cases, in addition to other analgesia.

Patients with previous opioid dependence are at risk of relapsing. Set treatment goals of providing analgesia that will not lead to ongoing dependence and explain these to the patient. Where possible, discontinue opioids before discharge from hospital or write the time for discontinuation on the discharge letter and communicate this to the GP.

Drug seeking behaviour should be recognised and managed as per the guidelines in this Handbook.

Drug use on the wards causes ethical and practical problems.

Three common reasons for ongoing drug use should be considered:

- unrelieved pain
- anxiety
- continuing dependence

Management Strategies

- analgesia may be increased
- anxiety causes and interventions explored
- methadone dose increased
- drug and alcohol consultation should be obtained
- motivational interviewing offered

If drug use continues, discharge from the hospital may be required.



See Chapter 2
General Principles
'Drug Seeking', p. 24

BENZODIAZEPINES

Benzodiazepine dependence may be missed if a careful drug history is not taken or the patient does not disclose recent use. This often presents with withdrawal during the post-operative period. In such cases, the patient is managed as for benzodiazepine dependence in other clinical settings.

A single long-acting benzodiazepine, usually diazepam, is substituted at the minimum dose required to suppress withdrawal symptoms. This is slowly withdrawn over ensuing weeks. It is important to collaborate with the patient's GP who may not be aware of the extent of the problem or the number of doctors being seen by the patient.



See Chapter 11
Benzodiazepines

STIMULANT USE

Cocaine and amphetamines are not often major problems in hospital (with the exception of the Emergency Department). Psychological problems and drug-induced psychosis may require psychiatric consultation. Cardiovascular changes may lead to haemodynamic instability until the effects abate.

REFERENCES

Tonnesen, H., Rosenberg, J., Nielsen, H.J., Rasmussen, V., Hauge, C., Pedersen I.K. & Kehlet, H. 1999, *British Medical Journal*, vol. 318, pp.1311–6.