

CATEGORY II – SPECIALITIES & SETTINGS: SURGERY AND ANAESTHETICS

1.0 Introduction

Chronic alcohol misuse is more common in surgical patients than other hospital in-patients, 15-30% of male surgical patients in urban UK hospitals may have alcohol problems (Chick, 1993). Many surgical trauma beds are filled with patients who were injured whilst under the influence of alcohol. The rate of post-operative morbidity and mortality is higher in the chronic alcoholic patients, so risk identification at the pre-operative stage is vital to assess the needs during peri-operative care.

Recognising substance misuse problems in anaesthesia is necessary for appropriate treatment adjustment in both a currently addicted patient and a person recovering from substance misuse problems. Availability and routine use of addictive substances makes anaesthesia departments a possible target of patients' drug-seeking behaviour and creates an increased risk for anaesthetist doctors themselves. Admission to hospital for surgery requiring an anaesthetic could be planned or emergency.

LEARNING OUTCOMES

Medical students will gain knowledge in:

1. Describing the range of substance use disorders, with particular reference to issues relevant to anaesthetics and surgery.
2. Identifying signs and symptoms of substance use disorders, in patients presenting for anaesthesia and surgical procedures.
3. Identifying at pre-operative assessment in surgical patients of those who misuse drugs including nicotine and alcohol.
4. Identifying patients who may be at increased risk of post-operative complications secondary to substance misuse.
5. Identifying patients who present an increased risk to the theatre staff because of intravenous drug abuse and appropriate precautions to take.
6. Describing an appropriate care plan for anaesthesia and surgical procedures for patients liable to substance misuse.

Vignette

A specialist registrar was called to see Mr Wallis, a 49-year-old man in the surgical ward who was extremely agitated and distressed. He was attending for assessment for inpatient admission. Although he had drunk 7 pints of cheap cider that morning, he was tremulous, sweaty and confused. He did not know the date and had difficulty walking. He was depressed and said that he wanted to die. He complained of failure and guilt in relation to his children and felt hopeless about the future. He was unemployed and living alone. His blood pressure was 168/102 and his pulse rate was 100.

What issues do you need to consider, and what are the treatment options?

2.0 Context

Patients with substance misuse problems will require access to hospital care which may require anaesthesia and surgery. This includes:

- in obstetrics for labour and emergencies
- in trauma for emergency surgeries or life-saving (resuscitative) situations
- elective surgery

Therefore it is important for anaesthesiologists and surgeons to know about the most common illicit drugs being used, to know their side effects and clinical presentation if abused or intoxicated, to know what anaesthetic options would be beneficial or detrimental and how to manage pain post operatively.

3.0 Common presentations

3.1 Barriers to detection

Patients who have a history of taking drugs of abuse or drinking to harmful levels may not be forthcoming about their actual substance use for a number of reasons:

- Patients may not see the relevance of substance use in relation to planned surgery.
- Patients may fear being judged by professionals or have had previous poor experiences.
- Patients may under or over report their substance use for fear of not receiving adequate pain relief.

3.2 Special features

Pre-operative assessment for elective surgery must identify patients at risk of complications secondary to substance misuse. It is recommended that when undertaking the pre-operative assessment, that questions are asked about smoking, alcohol use and the use of drugs including over the counter medications (OTCs), psychoactive medications prescribed by the doctor and other licit and illicit drugs that the patient may be taking currently or recently. Patients may present with an interesting history of self-medicating for manage physical or mental health symptoms.

SUBSTANCE MISUSE FACT SHEETS

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There are a range of complications and risks associated with substance use, including patients who chronically abuse alcohol are at an increased risk of developing:

- Post-operative infection
- Cardiovascular complications
- Bleeding disorders
- Enhancement or reduction in an individual's sensitivity to anaesthetic drugs.
- Respiratory depression
- Overdose due to inaccurate reporting of drug use, lack of knowledge about purity of drugs

4.0 Assessment

It is important to ask the patient to be honest to ensure that they do receive adequate pain relief and also that any inaccuracies in reporting could lead to inadequate pain relief or safety issues if they receive too much sedation. It may also be useful to ask other family members or carers to corroborate information especially for those where there may be neurological deficiencies.

Pre-operative screening questions regarding alcohol intake and use of all drugs (licit, illicit, over the counter and prescribed) should routinely be used to identify patients at high risk of complications during anaesthesia or post operatively. Detailed pre-operative assessment of substance abuse is critical to

minimise the predictable risks to the patient and theatre staff.

Denial of substance use is often a part of substance misuse problem and therefore the identification of the problem from physical and psychological signs and patient's medical history is necessary. In contrast, a patient recovering from substance misuse may admit the history and specifically request that mind-altering drugs not be employed. Effects of possible intoxication, including changed responses, changed metabolism, drug interactions and existing end organ damage must be established and documented.

Patients may fear inadequate medication and may bring in or ask others to bring in their regular medication and hide supplies.

Stopping smoking prior to surgery can dramatically decrease an individual's chance of serious respiratory complications post-operatively.

Mr Wallis is being admitted for a routine operation on his knee, following injury some years ago, but worsened after a fall on the ice over the winter. It is recommended that as part of his assessment a range of tests are undertaken to check for an abnormal liver function. He will require some symptomatic treatment of the withdrawal symptoms and some advice on his drinking and the impact of this on his health and his operation and post-operative recovery.

Pre-operative preparation for surgery

Alcohol	Acute withdrawal from alcohol typically develops in alcohol-dependent people within 6-24 hours of their last drink. This may occur unintentionally if abstinence is enforced by a prolonged period of pre-operative starvation. This should be considered when planning the order of surgery on a particular operating list to minimize the nil-by-mouth period for these patients
Nicotine	Smokers have an increased risk of post-operative respiratory complications. If patients stop smoking 6-8 weeks before surgery this considerably decreases the risk. Smokers also are at increased risk of cardiovascular and respiratory disease and hence are at increased risk of acute cardiovascular events during surgery. Smoking alters tissue healing and promotes infection of surgical wounds; it also increases the risk of haematoma formation and anastomotic leakage. The surgical team and the primary care team should be involved in supporting the patient to stop smoking prior to and following surgical treatment.
Opioids	Injecting drug users must be identified pre-operatively as they present a potential risk to the theatre staff for the transmission of blood borne viruses in particular HIV and Hepatitis B and Hepatitis C. Infection control measures, protective eyewear, water-impermeable gowns and double gloving is standard theatre protocol for such patients. If there is no HIV test result available the patient should be treated as if infected and maximum precautions taken to protect the surgical staff from blood contamination.
Hypnotic drugs	Post-operative confusion is increased in chronic benzodiazepine users so it is important to establish use at the pre-operative assessment. Related drugs may need to be prescribed to control peri-operative anxiety so establishing the current level of use is imperative to avoid overdose.
Stimulant drugs	Cocaine is often used as a vasoconstrictor during nasal surgery so it is vital to know if the patient is a cocaine user, in particular if cocaine has been used within the preceding 48 hours. Recent cocaine use also increases the risk of ventricular tachycardia under anaesthetic. A patient who has used nasal cocaine will be at increased risk of complications following nasal surgery due to the compromised blood supply to the area so must be counselled appropriately pre-operatively.

5.0 Treatment

5.1 Pre-operative management plan

A well performed pre-operative assessment can reduce the post-operative risk of acute alcohol withdrawal syndrome (AWS) by careful planning of the peri-operative period. The anaesthetist must be informed of the individual's likelihood of developing AWS and ideally this may be prevented by adequate prophylaxis including benzodiazepine administration. If there is sufficient time available, as in an entirely elective surgical procedure, thiamine prophylaxis may be administered. Pre-operative serology testing of liver function to include gamma glutamyl transferase level is essential. Despite this some may still develop AWS but their symptoms are likely to be milder.

The development of alcohol withdrawal syndrome can change a normal post-operative course into one in which the patient requires treatment in an intensive care unit. It is important to remember that common post-operative complications such as bleeding, metabolic or electrolyte disturbance, infection, hypoxia and pain are also excluded when alcoholic patients become confused in the post-operative period. Respiratory depression is a much feared complication of the use of opioids for acute pain. Accidental overdose is likely to be the commonest cause of respiratory depression. Particular caution is necessary for patients taking more than one class of sedative medication and in those with pre-existing disorders of respiratory control, such as obstructive sleep apnoea. It is therefore important to have a full history of substance use to avoid risk of respiratory depression.

For major surgery it is recommended to use non-steroidal anti-inflammatory drugs (NSAIDS), local anaesthetics and pure opioid agonists such as morphine and fentanyl for pain relief. For minor surgery, and particularly operations that are able to be accomplished on a day-surgery, basis it may be possible to avoid opioids completely.

Opioid-dependent patients scheduled for surgery should be instructed to take their usual dose of oral opioid (including methadone) on the morning of surgery with a sip of water. If the patient did not take an opioid at baseline, a roughly equivalent loading dose of morphine or other opioids can be administered pre-operatively as an oral elixir or intravenously, either at the induction of anaesthesia or during the operation according to local protocols.

At the pre-operative stage, the team in discussion with the patient should consider commencing a detoxification regime, which can commence as soon as the pain associated with the surgery has subsided (for drugs) and immediately after surgery for alcohol. This is an ideal opportunity to undergo a detoxification when in hospital under the supervision of medical staff and with readily available support.

5.2 Management of a patient under anaesthetic

In both currently addicted and a recovering patient a clear strategy for sedation and pain management should be established before surgery, involving all personnel in contact with the patient and the patient themselves.

Addicted patients may be receiving opioid substitution therapy from a substance misuse service and this should be regarded as a separate prescription from that for analgesia for the pain control. Titration of non-opioid, opioid and adjuvant analgesics, in the WHO ladder, <http://www.who.int/cancer/palliative/painladder/en/> should be regulated against analgesic response in line with clinical guidelines; distinction between poor analgesic response and withdrawal should be recognised.

Anxiety and pain have been identified as major precipitants of relapse in addicted patients. Inadequate pain management, be it at patient's own request, and prejudicial attitudes towards the patient increase anxiety and the risk of relapse. Analgesics without abuse potential may be initially used for the relief of postoperative pain possibly with continuous regional local anaesthesia or selective nerve blocks to provide adequate pain control and reduce opioid analgesic requirements.

The benefit of these methods must be weighed against the risk of inadequate analgesia. Use of opioids should be guided by specific clinical indications and the scheduling and route of administration and specific type of opioid should be considered. The use of patient controlled analgesia in recovering patients and further prescription of opioids brings about a risk of associations between pain symptoms and the administration of a reinforcing drug. The recovering patient's behavioural responses to pain management require regular evaluation by physicians and nursing staff.

5.3 Post-operative management

If Alcohol Withdrawal Syndrome (AWS) develops post-operatively immediate therapy may be required using benzodiazepines.

For the management of pain of patients with an opioid dependence, it is important to maintain their regular substitute medication, and to provide the appropriate pain control with other opiate based analgesics, but with a plan to reduce the post-operative pain management onto non-addictive preparations as soon as possible.

SUBSTANCE MISUSE FACT SHEETS

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Pharmacological therapy in substance misuse: considerations for surgery and anaesthesia

Medication	Drug of abuse	Pharmacology	Mechanism of action	Anaesthetic implications
Disulfiram Calcium carbimide	Alcohol	Enzyme inhibition	Adverse side effects	Altered response to sympathomimetics and drug metabolism; discontinue disulfiram 10 days before surgery
Naltrexone	Alcohol	Modulation of drug reward	Decrease drug ideation	Altered response to opioid agonists; discontinue 3 days before surgery
Nalmefene	Opioids	Direct receptor antagonist	Decrease euphoric threshold to opioids	Alert anaesthetist
Acamprosate	Alcohol	Modulation of drug reward	Decrease drug ideation	Unknown
SSRIs	Alcohol Benzodiazepines Barbiturates	Modulation of drug reward	Decrease drug ideation; decrease consumption in active users	Rare; may cause hypotension and bradycardia
Anti-epileptics	Alcohol; opioids	Reduce neuronal excitability	Decrease drug ideation	Prolonged duration of neuromuscular blockers
Methadone LAAM Buprenorphine	Opioids	Direct receptor agonist	Decreases drug ideation, positive reward, and withdrawal symptoms	Continue maintenance dose

SSRIs = selective serotonin reuptake inhibitors, LAAM = levo acetyl methadyl

In an emergency, contact can be made with the local substance misuse services and pharmacy to establish what medication the patient usually takes and to check whether recent prescriptions have been collected from the pharmacy.

In preparation for discharge it is useful to arrange a discharge planning discussion with all relevant services, so that continued support and accurate dosage of medication can continue when the patient is discharged.

7.0 References and useful resources

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