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Alcohol is the most commonly consumed recreational drug in the UK - 56% of adults drink alcohol regularly and nearly 10% drink on 5 or more days a week. 1.6million adults in the UK may have some level of alcohol dependence (Office for National Statistics, 2017).

Chronic abuse

In addition to the well-known effects of alcohol on the liver, pancreas and CNS, alcohol abuse affects cardiac function, the immune system, coagulation and causes an exaggerated response to surgical stress. Patients with established cirrhosis undergoing surgery are at high risk of complications. A Child-Pugh score A predicts a perioperative 30-day mortality in abdominal surgery of 10%, B of 17% and C of 63% (Neeff et al, 2011).

Alcohol abuse is the leading cause of thiamine deficiency worldwide. Many chronic alcohol abusers are malnourished either from lack of intake of nutrients or the effect of alcohol on absorption of nutrients. Patients are at risk of Wernicke's encephalopathy and this can be precipitated by the stress response to surgery.

The effects of alcohol on the immune system are underappreciated and even moderate consumption is associated with increased postoperative infection (Shabanzadeh and Sørensen, 2015). Alcohol adversely affects cell-mediated immunity and alters levels of both pro- and anti-inflammatory cytokines. Alcohol abuse is associated with increased risk of postoperative wound infections and a higher incidence of sepsis following emergency or elective laparotomy (Dahl et al, 2014).

The cytochrome p450 enzyme system is induced by chronic alcohol use so increased doses of anaesthetic and other drugs may be required. Impaired hepatic function reduces the metabolism of many other drugs and this, coupled with reduced protein binding, means some drugs will need a reduced dose or frequency. The volume of distribution can also be altered. The



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British National Formulary should be consulted for specific dosing advice.

Patients having elective surgery should be screened at pre-assessment for problem drinking and alcohol dependence. The well validated FAST screening tool quickly identifies those with hazardous drinking patterns, and complements the more comprehensive AUDIT tool for identifying those at risk of alcohol dependence and withdrawal. Both are available from Public Health England (<https://www.gov.uk/government/publications/alcohol-use-screening-tests>).

Those at risk of alcohol withdrawal syndrome may need referral for managed withdrawal before surgery. This syndrome usually manifests in alcohol-dependent individuals within 6–24 hours of their last drink, and can last for up to a week.

If problem drinkers can abstain for 6–8 weeks before surgery this significantly decreases morbidity and mortality (Tonnesen and Kehlet, 1999). Those requiring urgent surgery may need benzodiazepine prophylaxis and intravenous thiamine supplementation to alleviate alcohol withdrawal syndrome and prevent Wernicke's encephalopathy.

Acute intoxication

Patients presenting acutely intoxicated for elective surgery should be cancelled and appropriate plans made, but management for non-planned surgery can be problematic.

An acutely intoxicated patient may have impaired capacity to consent to surgery. It should be assumed that the patient has a full stomach as alcohol delays gastric emptying. Lower doses are required for induction and maintenance of anaesthesia. Emergence from anaesthesia may be delayed and airway reflexes obtunded, so cautious extubation is required. Postoperatively patients should be monitored for complications of chronic excess alcohol consumption, given benzodiazepine prophylaxis and thiamine supplementation if required, and referred to specialist services if appropriate.



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Conclusions

Excessive alcohol consumption is a growing problem. It should be considered a multisystem disease with potentially significant impact on perioperative morbidity and mortality. Screening should take place at the preassessment clinic, or on admission to hospital to identify and treat those at risk of complications. Patients with signs of end organ damage from alcohol excess should be managed with input from specialist physicians and may need critical care postoperatively.

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4

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