Alcohol Abuse

Scott C. Watkins

Risk

- Incidence in USA: 10% of Americans, incl physicians, will abuse alcohol at some point in their lives.
- 1:5 surgical pts has some form of alcohol use disorder.
- Third leading cause of death and disability, incl 30% of traffic fatalities.
- Male gender and family Hx major are risk factors.

Perioperative Risks

- Severe malnutrition as significant as ETOH-induced end-organ injury.
- Risk of Htn, CVA, diabetes, GI disease.
- Liver is the most severely affected organ.
- Dilated cardiomyopathy.
- Withdrawal symptoms can be life threatening.

Worry About

- Concomitant use of other drugs: Amphetamines, cocaine, benzodiazepines.
- Affects of chronic smoking, such as COPD and emphysema.
- Vasopressor effect of ETOH may cause Htn.
- Acute withdrawal and delirium tremens are life-threatening complications. Symptoms caused by sympathetic stimulation can range from mild tremors to electrolyte disturbances, seizures, and death.

Overview

- Disease characterized by addiction (compulsion and craving despite consequences) to alcohol.
- Clinical syndromes related to direct effect of ETOH and secondary adaptive response to excess ETOH exposure.
- ETOH rapidly absorbed and metabolized.
- Hepatic dysfunction usually takes 10 to 15 y to develop.
- Cirrhosis may develop after 1 or more acute episodes.

Etiology

- Unknown: Likely mutifactorial with environmental, genetic, and psychosocial components

Usual Treatment

Recovery involves some or all of the following:

- Detoxification: Inpatient, residential, day treatment, or outpatient.
- Evaluation for comorbid psychiatric disorder.
- Referral to Alcoholics Anonymous or other alcohol programs.
- Pharmacotherapy to help with withdrawal and prevent relapse:
  - Disulfiram (Antabuse): Acetaldehyde dehydrogenase inhibitor.
  - Naltrexone (Revia): Pure opioid receptor antagonist, blunts ETOH's pleasurable effects and reduces craving. Available as monthly IM depot. May interfere with opioids prescribed for periop pain.
  - Acamprosate (Campral): A synthetic derivative of homotaurine, a structural analog of GABA. Decreases excitatory glutamatergic neurotransmission during alcohol withdrawal.

Assessment Points

System	Effect	Assessment by Hx	PE	Test
CV	Cardiomyopathy, arrhythmias, hypertension	Orthopnea, nocturnal urination, coughing, and leg swelling	Dyspnea BP lying and standing HR	ECG, ECHO Lytes
GI	Erosive gastritis, decreased lower esophageal sphincter tone, hepatic cirrhosis, acute hepatitis, pancreatitis, fatty liver	Hx of bleeding, easily bruised, anorexia, N/V	Ascites, jaundice Hepatomegaly, "spider" angiomas Abdominal pain Abdominal pain, hepatomegaly	Upper endoscopy, stool guaiac LFTs Serum amylase Mg^{2+}, K^{+}
ENDO	Gynecomastia, testicular atrophy, irregular menses			
HEME	Leukopenia, anemia, thrombocytopenia			CBC with differential
CNS	Wernicke's syndrome Korsakoff's syndrome Peripheral polyneuropathy Cerebellar degeneration	Amnesia, impaired reasoning	Sixth nerve palsy, ataxia Distal numbness and paresthesias Unsteady gait	MRI or CT scan, CNS exam

Key References: Jones K, Neumann T, Spies C: Perioperative management of patients with alcohol, tobacco and drug dependency, *Curr Opin Anaesthesiol* 23(3):384–390, 2010; Moran S, Isa J, Steinemann S: Perioperative management in the patient with substance abuse, *Surg Clin North Am* 95(2):417–428, 2015.

Perioperative Implications

Preoperative Preparation

- All pts should be screened for substance use routinely.
- Gastric prophylaxis.
- Blood ETOH and toxicology screen if indicated.

Monitoring

- Standard ASA monitors.
- Consider invasive monitors for cardiomyopathy, hepatic dysfunction, and/or end-organ compromise.

Airway

- Consider full stomach in acute intoxication.

Preinduction/Induction

- Consider long-acting benzodiazepine, barbiturate, or α_2-adrenergic agonist.
- Anesthetic doses increased in chronic disease.
- Decreased dose in acute intoxication.
- Rapid sequence in acute intoxication.
- Consider Rx of nutritional/metabolic deficiencies.

Maintenance

- Requirements vary by age, general health, nutrition and hydration states, concomitant disease.
- Acute intoxication may decrease MAC requirement and lower BIS monitoring values.

Extubation

- Ensure return of airway reflexes.

Postoperative Period

- Provide adequate analgesia in PACU.
- Anxiety can worsen withdrawal symptoms.
- Withdrawal syndrome may develop within 6 to 8 h; treat based on symptoms—benzodiazepines for agitation and seizures, alpha-2-agonists for autonomic signs and neuroleptics or olanzapine for hallucinations.
- DTs develop in 5% of pts in withdrawal.
- Ten percent mortality secondary to hypotension, electrolyte disturbances, seizures and/or arrhythmias.

Adjuvants

- Long-term consumption of ETOH impairs hepatic metabolism.
- Short-term consumption inhibits drug metabolism.
- Polyneuropathy is a relative contraindication to regional anesthesia.
- Consider periop clonidine patch.

Anticipated Problems/Concerns

- Recognition and treatment of withdrawal important, as significant mortality occurs if inadequately treated.

Allergy

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Risk

- Incidence in USA: 5% of adults are allergic to one or more drugs.
- During surgery, the risk of anaphylaxis is ~1:2500 to 1:20,000 depending on the agent, with a mortality rate of 4%.
- Females > males (1.6:1).

Perioperative Risks

- Intensity of Sx variable: From an isolated cutaneous eruption to CV collapse and death.
- CV, cutaneous (incl angioedema), resp systems are mostly involved.
- Increased morbidity and hospitalization time if intensive care required.

Worry About

- Pt's Hx: Knowledge of prior allergic event leads to avoiding drugs or other components involved; however pt may not know.
- Hypotension/shock, bronchospasm, and angioedema may become life-threatening events.