Opioid Review and MAT Clinic

Substance Use Disorders in Critically Ill Patients

March 18, 2020

Objectives

- Understand that patients with SUD may have increased hospitalization rates and complications due to underlying health problems from use.
- Describe the physiological changes that can occur with different SUDs that predispose them to infections and/or complications, especially once hospitalized.
- Be aware of signs/symptoms, family input, screening tools, chart reviews, as well as lab values, that may alert you to a possible SUD.

Current Statistics

- Alcohol use disorder:
  - Life-time prevalence of AUD in US: ~18%
  - Most widely used and abused substance world-wide
  - Up to 40% of hospitalized patients have AUD
  - 20-40% of inpatients have alcohol-related condition
  - Excessive ETOH use impacts 1/5-1/3 of all patients admitted to an ICU

Current Statistics

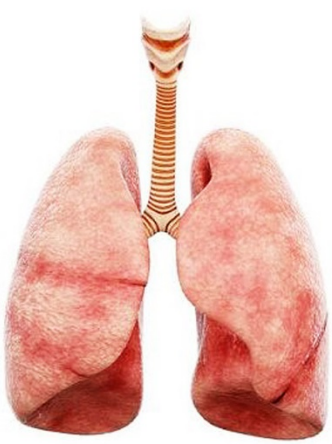
- Prevalence of AUD with another drug use disorder reaches up to 70% of trauma admissions
- Tobacco users:
  - 67% drink ETOH
- Non tobacco users:
  - 47% drink ETOH

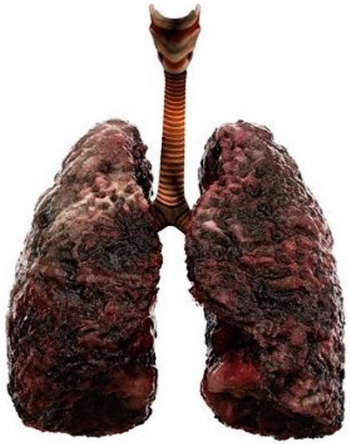
Current Statistics

- Nicotine use disorder:
  - Main addiction in the world
  - High co-occurrence with ETOH and drug use
  - High co-occurrence of depression/anxiety disorders
  - Increased agitation in ICU vs nonsmokers: 64% vs 32%
  - 2-4 fold increased risk of invasive pneumococcal
  - Several fold higher risk of influenza
  - Increased risk TB
  - 11% US population daily smokers
  - Admission to ICU higher at 25-47% patients

Current Statistics

- Journal of Intensive Care (6, article number: 42 (2018)
  - Sepsis: 56% smokers vs 40% nonsmokers
  - Death during hospital stay: 32% smokers vs 22% nonsmokers
  - ICU admission: 70% smokers vs 53% nonsmokers
  - Ventilators: 58% smokers vs 29% nonsmokers
  - Vasopressors: 53% smokers vs 39% nonsmokers



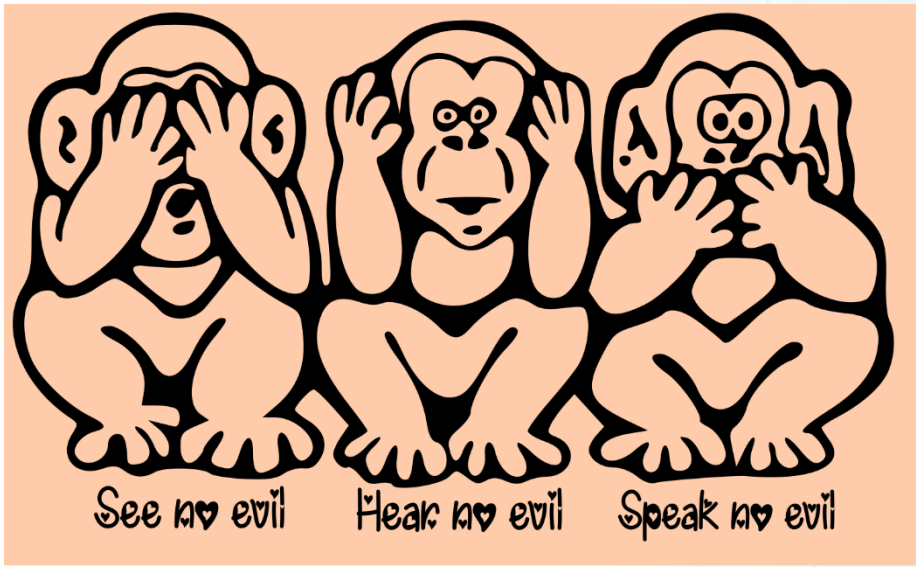


Current Statistics

- Opioids: prescribed vs illicit
  - 3-4% of adult population on chronic opioid therapy
  - 0.2% use heroin
  - What percentage abuse/use prescribed opioids not as intended?
  - Methadone (OTP) clinics

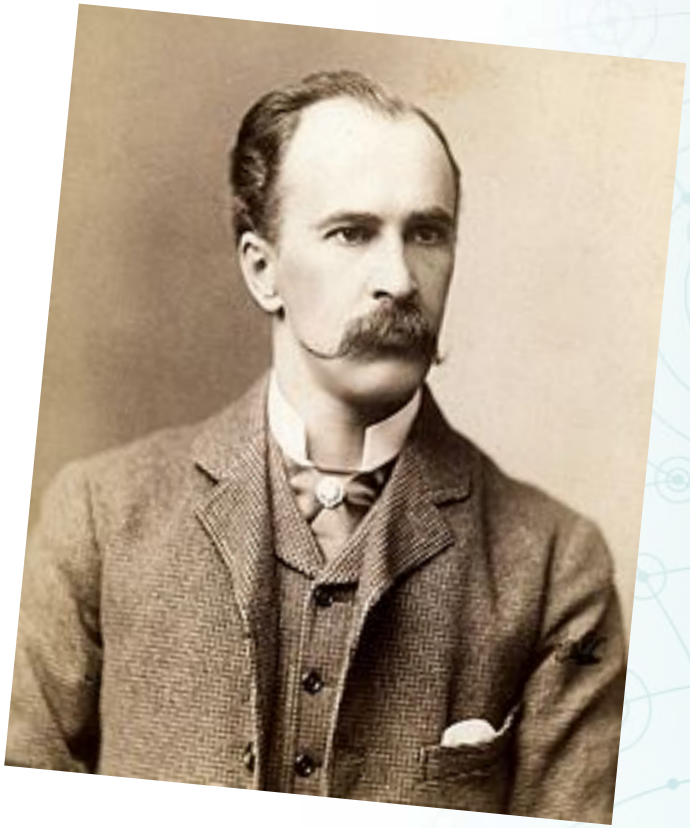
Barriers to Recognizing SUD

- Too ill to give history
- Not forthcoming with their history
- Not understanding their own use disorder
- Family unaware
- Family downplaying (embarrassment/stigma)
- Not well documented in the chart
- Not asked by providers
- Deemed not “relevant” by providers
- OTP Methadone not on PDMP



William Osler…. He knew it when…

- Principles and Practice of Medicine: 1899
  - "…noted that a tendency towards alcohol abuse was extremely important in predisposing individuals to developing pneumonia…"

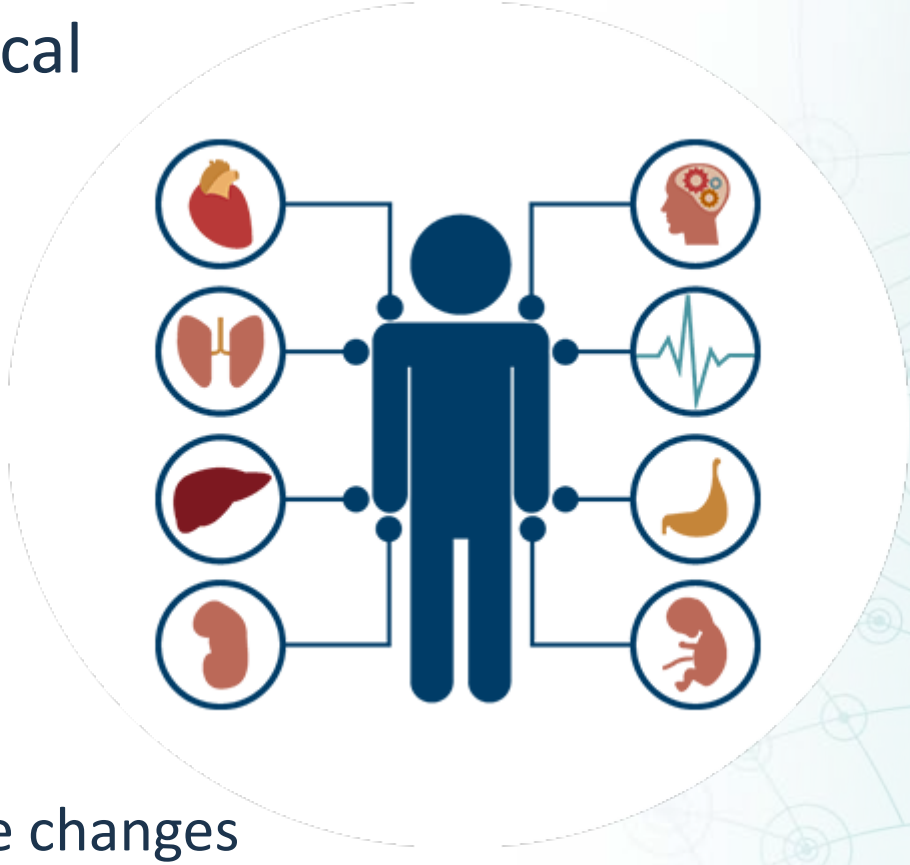


Alcohol

- Pre-disposition to worse health outcomes:
  - Poor nutrition
  - Poorer access to health care or less likely to access health care
  - Often co-occurring mental health
  - Co-occurring tobacco use
  - Increased trauma or trauma/violence related conditions

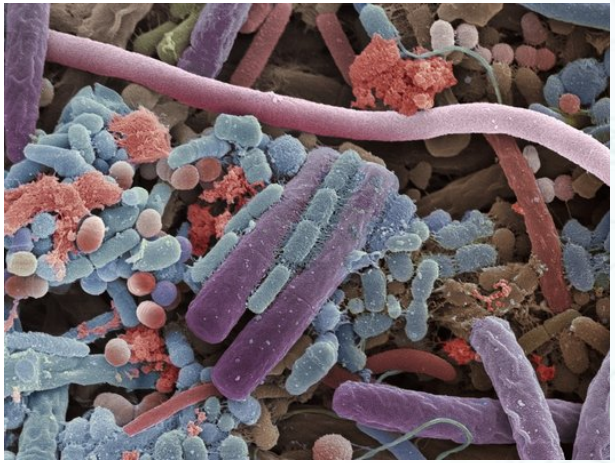
Alcohol

- Co-occurring/resulting medical complications:
  - Liver disease
  - Pancreas dysfunction
  - Bone marrow suppression- pancytopenia
  - Cardiac:
    - Cardiomyopathy
    - HTN
    - Afib
  - Renal dysfunction- electrolyte changes
  - GI: ulcers, varicele bleeding



Mechanisms of Predisposition

- Alters the flora of the mouth (more gram – organisms)
- Blunted upper airway refluxes- increases aspiration
- Decreased mucociliary clearance
- Impairs normal host defense mechanisms
  - Innate immunity changes- macrophage
  - Impaired adaptive immunity (T-cell function)
  - Induced epithelial dysfunction

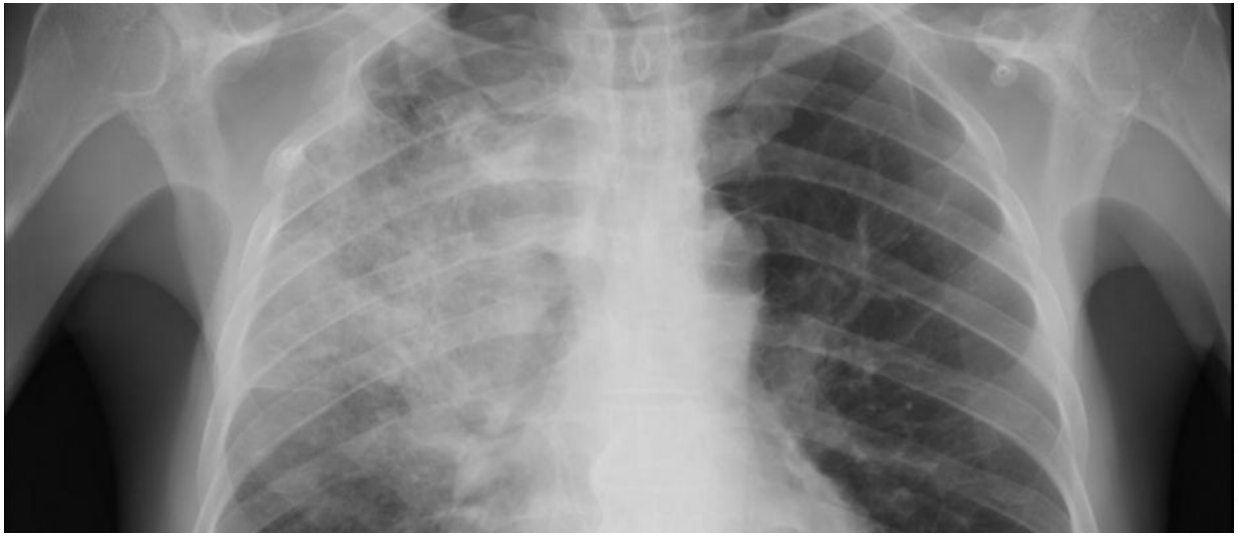


Alcohol and Sepsis

- AUD significantly higher need for mechanical ventilation
- Independent risk factor for development of sepsis
  - Mortality even higher with concurrent hepatic dysfunction
  - Pneumonia most common cause of sepsis in AUD
    - Viral and bacterial
- 2-4x's the rate of ARDS

Alcohol and Sepsis

- Independent risk factor for development of community acquired pneumonia
  - Higher acuity, increased hospitalization and ICU, longer LOS, higher hospital charges
  - Delayed resolution, protracted fevers, larger area of infected lung, lower clearance on CXR

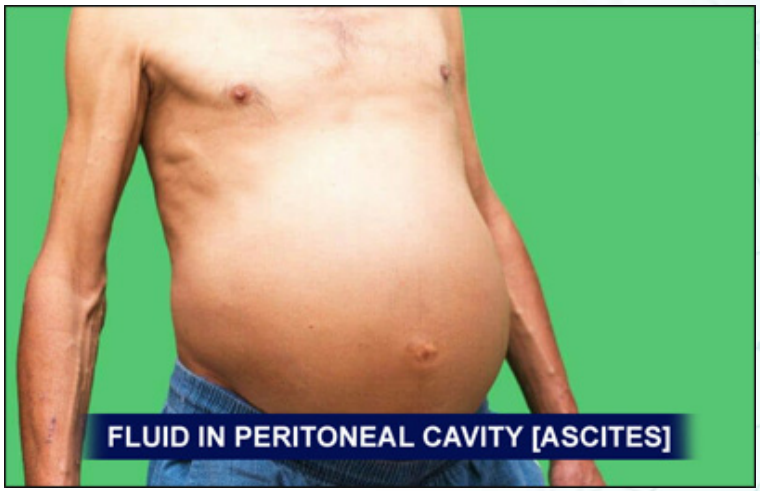


Other Alcohol Concerns

- Anticipation and being pro-active can help prevent new problems in critically ill patients with AUD
  - No accepted screening guidelines
- 5% of patients with AUDs develop severe withdrawal or DT
- Alcohol withdrawal signs/symptoms can over-lap sepsis or be masked by their illness
  - Hallucinations vs ICU delirium
  - Abnormal HR/BP (labile BP, tachy suggests withdrawal)
  - Intubation = nonverbal

Things to Note

- History of AUD (obviously)
- Labs:
  - GGT: elevated in AUD and in other things
  - MCV: less sensitive but when elevated with elevated GGT should raise suspicion
  - CDT: 4-7 drinks per day for at least 1 week will significantly raise
  - MELD (bilirubin, INR, AST/ALT)
- Physical findings:
  - Tremor
  - Enlarged (tender) liver
  - Obvious ascites
  - Alcohol odor on breath



Tobacco

- Pre-disposition:
  - Alterations in mechanisms of the host defense system
  - Ciliary function impaired
  - Mucous volume increased
  - Humoral response to antigens altered
  - Qualitative and quantitate changes in cellular components occur
  - Periodontal disease

Tobacco in the ICU

- Agitation in the ICU
  - 64% smokers
  - 32% for nonsmokers
- Higher incidence of:
  - Self-removal of tubes
  - Self-removal of catheters
  - Increased restraints
  - Higher doses of sedatives, neuroleptics and analgesics

Tobacco in the ICU

- NRT - study
  - No differences in mortality at day 30
  - Less delirium and agitation at day 20

Substance Use Disorders

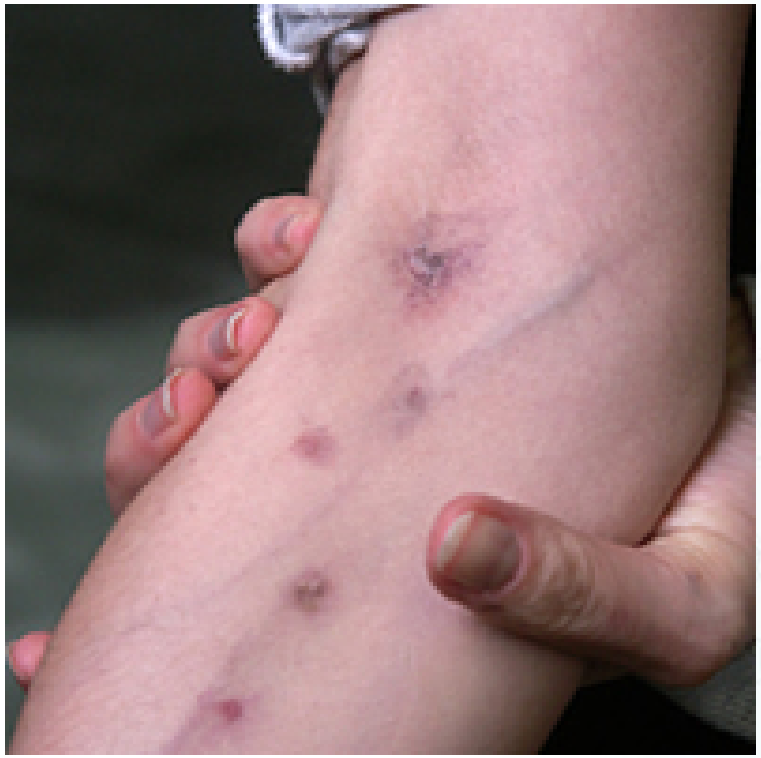
- Pre-disposition:
  - IVDU complications
    - Infections
      - Soft tissue
      - Endocarditis
      - Hepatitis
      - HIV
  - Co-use:
    - Alcohol
    - Cigarettes
    - Other drugs

Substance Use Disorders

- Pre-disposition:
  - Insecurities:
    - Food
    - Housing
    - Insurance
    - Support system
  - Other issues:
    - Probation
    - Warrants
    - Child protection
    - etc

Substance Use Disorders

- Physical findings:
  - Conjunctival irritation
  - Marijuana odor
  - Heart murmur
  - Injection sites
  - Pupils
  - Tremors
  - Respiratory status



Opioid Consumers

- Three types:
  - Compliant patient on chronic opioids
  - MAT patient- stable
  - Patient with OUD

- Screening:
  - Include opioid use history as medication use rather than social history
  - Non- judgmental questions
- Labs:
  - UDAS
  - Liver functions
  - Hepatitis/infections

Opioid Patients Hospitalized

- Interruption of typical abuse= withdrawal
- Opioid-tolerant patients (even without a true OUD) need higher doses of opioids for pain
- Post-ventilator patients on pain relief and sedation may withdrawal even after only 5 days of inpatient meds
- Treatment with MAT should be offered
  - Don’t need a waiver
  - Coordination with outpatient provider/treatment

Sources

- Arcavi L, Benowitz NL. Cigarette smoking and infection. Arch Intern Med. 2004;164(20):2206-2216.
- deJong B, Schuppers AS, et al. The safety and efficacy of nicotine replacement therapy in the intensive care unit: a randomized controlled pilot study. Annals of Intensive Care (2018)8:70.
- deWit M etal. Alcohol-use disorders in the critically ill patient. Chest.2010 Oct;138(4):994-1003.
- Lucidarme O etal. Nicotine withdrawal and agitation in ventilated critically ill patients. Crit Care.2010;14(2):R58.
- Marcy TW, Merrill WW. Cigarette smoking and respiratory tract infection.Clin Chest Med. 1987 Sep;8(3):381-91.
- Mehta AJ. Alcoholism and critical illness: A review. World JCrit Care Med. 2016 Feb 4;5(1):27-35.
- Mersy, D. Recognition of Alcohol and Substance Abuse. Am Fam Physician. 2003 Apr 1;67(7):1529-1532.
- Prunty LM etal. Acute opioid withdrawal: identification and treatment strategies. US Pharm 2016;41(11):HS2-HS6.
- Turner CC, Fogger SA, Frazier SL. Opioid Use Disorder: Challenges During Acute Hospitalization. Journal for Nurse Practitioners. Volume 14, Issue 2 February 2018.