Substance Abuse and Addiction

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Definitions

- In broad terms, substance use disorders occur when a substance is used in a **compulsive manner** with a **lack of control** over use and continued use despite **consequences.**
- Previously, the DSM-IV differentiated between substance **abuse** and **dependence**
- Currently, the DSM-5 has combined these into **substance use disorder**
  - **severity** and **time course** specifiers
  - The term "addiction" is not a medically defined term and is not used in the DSM-5

Substance-Induced Disorders

- In addition to the substance use disorder itself, patients may also experience substance-induced disorders
  - Intoxication
  - Withdrawal
  - Substance/medication-induced mental disorder
    - i.e. mood, anxiety, or psychotic symptoms, which onset during or shortly after the use of a substance, and may persist for up to one month after cessation of substance use.
    - N.B. these may be a result of medications, not just street drugs (e.g. mania resulting from corticosteroids)

Classes of substance use disorders

- There are 10 classes of substance use disorders that are specified in DSM-5:

1. Alcohol
2. Caffeine
3. Cannabis
4. Hallucinogens
5. Inhalants
6. Opioids
7. Sedatives/Hypnotics/Anxiolytics
8. Stimulants (meth, cocaine, etc)
9. Tobacco
10. "Other"

There are also some behavioural addictions such as gambling addiction, which appear to activate similar reward pathways as substance abuse.

General diagnostic criteria for substance use disorders

- Can generally be grouped into:
  - Impaired control
    - e.g. using more than intended, failure to cut down, spending excess time or money using, cravings
  - Social impairment
    - e.g. using despite social dysfunction or consequences
  - Risky use
    - e.g. using despite risks to physical or mental health
  - Pharmacological criteria
    - e.g. tolerance and withdrawal

General diagnostic criteria for substance use disorders

1. Often used in larger amounts or over longer time than intended
2. Desire to cut down or unsuccessful attempts to cut down use
3. Much time is spent in obtaining, using, or recovering from use
4. Cravings
5. Use resulting in failure to fulfill major role obligations (home/work/school)
6. Continued use despite recurrent interpersonal problems related to use
7. Important activities reduced or given up due to use
8. Recurrent use despite physical hazard (e.g. driving while intoxicated, sharing gear, etc)
9. Recurrent use despite knowledge of negative physical or psychological consequences
10. Tolerance symptoms
11. Withdrawal symptoms

Diagnostic tools

- You cannot treat what you don't know about – ask **everyone** about smoking, alcohol, and drugs (both street and Rx)
  - Screen with CAGE questionnaire for alcohol

- Severity specifier
  - Mild: 2-3 symptoms
  - Moderate: 4-5 symptoms
  - Severe: 6+ symptoms

General Principles of Treatment

- Establish Goals: Abstinence has best outcomes; other goals may be harm reduction or improved functioning
- Motivate the patient to change (eg MI or A-FRAMES techniques)
- Privacy applies in substance use disorders just as in all medical conditions.

  Exceptions include:
  - -in the ER
  - -duty to warn specific individuals who may be at risk of harm
  - -suspected child abuse or neglect
  - -driving safety concerns

IMPORTANT TOXIDROMES AND WITHDRAWAL STATES

SUBSTANCE	Autonomics	Pupils	LOC	Dangerous?	Treatment
Alcohol Withdrawal	hyperactive	N/A	Agitated, anxious	YES – seizures, DTs	Benzos (CIWA protocol)
Opioid Intoxication	hypoactive	miosis	Drowsy, coma	YES – respiratory depression	Narcan (naloxone)
Opioid withdrawal	Hyperactive, diarrhea, rhinorrhea, nausea, aches	mydriasis	Normal	NO	Supportive measures
Stimulant Intoxication	Hyperactive,	mydriasis	Agitated, psychosis	YES – seizures, CVA,cardiac arrhythmia	Supportive measures, symptomatic treatment

Alcohol Use Disorder

- Psychosocial treatments: CBT, MI, 12-step therapy, marital/family therapy, group therapy, dynamic or IPT, self-help or 12-step groups (AA)

- Pharmacological treatment
  - Naltrexone (50mg/day PO or q4weekly depot) decreases the pleasure associated with alcohol use, works best when combined with counseling. NOT for patients on opiates!
  - Disulfiram (125-500mg/day) causes aversive reaction to any alcohol consumed, works best in reliable and motivated patients.
  - Acamprosate (666mg TID) decreases cravings in abstinent patients, works best with recently abstinent and highly motivated patients.

Opioid Use Disorder

- Psychosocial treatment: CBT, behavioural, dynamic, group/family therapy, self-help and 12 step groups (NA)

- Pharmacological treatment
- NO EVIDENCE for ultra-rapid detox with naltrexone, this causes severe withdrawal, can have dangerous side effects to anaesthesia and is not effective in long term
- For patients with >1 year of dependence, can treat with an agonist to reduce the morbidity and mortality of opioid use, without necessarily having a goal of discontinuing opioids
  - methadone 40-60mg/day to prevent withdrawal, larger doses (>80mg) to prevent cravings are associated with better success Full agonist at opioid receptor. Has risk of overdose, abuse or diversion; only at special dispensaries; metabolized through CYP 450 so watch for interactions
  - buprenorphine 8-32mg daily, can be dosed q2-3 days, partial agonist at opioid receptor, available in combination with naloxone to reduce risk of abuse

Nicotine Use Disorder

Remember the effect of smoking on drugs metabolized through CYP450

- Psychosocial Treatments
- abrupt cessation better than gradual taper
- helpful interventions include brief interventions, behavioural therapy, CBT, social supports (e.g. spouse)
- no evidence for inpatient treatment, hypnosis, 12-step

- Pharmacological Treatment
- First-line:
  - Nicotine Replacement Therapy (patch, gum, lozenge, spray, inhaler)
  - Bupropion XR (150mg/day x4 days, then 300mg/day, quit on day 7)
- Second-line:
  - Nortriptyline (25mg/day, increase to 75mg/day, quit on day 10-14)
  - Clonidine (0.1-0.4mg/day PO or patch)
  - Varenicline (partial nicotine agonist) 0.5mg/day, titrate as tolerated to target of 1mg BID, quit on day 7, 12 week course, should not be taken with NRT (watch for psychiatric side effects)

Mini-Quiz

Question 1

Withdrawal from which of these substances can be medically dangerous?

(bonus points: what is the dangerous symptom we are worried about?)

A. Heroin
B. Alcohol
C. Crack
D. Gas huffing

Mini-Quiz

Question 2

Mr. Jones is a 21 yo college student who drinks alcohol to the point of black out around 2 weekends per month. He had to go to the ER "to get his stomach pumped" last year, and has gotten in several fights while intoxicated, causing a girlfriend to dump him and his previous roommates to ask him to move out. He will usually start the night telling his friends that he wants to cut down on his drinking and will only have "a couple beers" but by the end of the night he has usually had 10 or more drinks. When he started drinking alcohol at age 15, 1-2 drinks would make him tipsy – now he finds that he requires 4-6 drinks to "get buzzed". He used to play Ultimate Frisbee on Saturdays but now finds he is usually too hungover and has quit the league in order to spend his Saturdays recovering from Friday night. He has driven on several occasions after drinking, but has never had an accident. He also smokes marijuana a few times a year, usually when someone offers him a joint at a party. He has had no cravings or withdrawal symptoms for either marijuana or alcohol. His bloodwork and physical exam are normal.

What is his diagnosis?

A. Alcohol use disorder, severe, PLUS cannabis use disorder, mild
B. Alcohol use disorder, moderate, PLUS cannabis use disorder, mild
C. Alcohol use disorder, moderate
D. Alcohol use disorder, severe
E. This is normal, I think this guy was in my class last year

Mini-Quiz

Question 3

You are seeing a patient in the ER, and your attending asks you "Do you think this could be opioid intoxication?" You correctly answer:

A. Yes, the patient is agitated and hallucinating, this could be opioid intoxication
B. Yes, the patient is drowsy and tachycardic, with some soft neurological signs, this could be opioid intoxication
C. Yes, the patient is drowsy with bradycardia and miosis, this could be opioid intoxication
D. Yes, this patient is drowsy with bradycardia and mydriasis, this could be opioid intoxication

Mini-Quiz

Question 4

Match the following treatments for alcohol use disorder with their intended effect:

1. Disulfiram
2. Naltrexone
3. Acamprosate

A. causes aversive reaction to any alcohol consumed
B. decreases cravings in abstinent patients
C. decreases stimulation of the reward pathway associated with alcohol use

Mini-Quiz

Question 5

Which of the following is NOT a type of psychotherapy used specifically in substance use treatment?

A. CBT
B. MI
C. DBT
D. 12-step programs

Mini-Quiz

Question 6

The CAGE questionnaire is a useful screening tool for problematic alcohol use. What does it stand for?

A. Ever been criticized, ever had an accident, ever felt guilty, ever needed an eye-opener?
B. Ever felt need to cut down, ever been annoyed, ever felt guilty, ever needed an eye-opener?
C. Ever had cravings, ever been annoyed, ever felt guilty, ever needed an eye-opener?
D. Ever had cravings, ever had an accident, ever felt guilty, ever needed an eye-opener?

Quiz Answers

1. B (bonus: seizures)
2. D
3. C
4. 1 – A, 2 – C, 3 – B
5. C
6. B

Resources

- CIWA protocol as used at CAMH
- http://www.reseaufranco.com/en/assessment_and_treatment_information/assessment_tools/clinical_institute_withdrawal_assessment_for_alcohol_ciwa.pdf
- APA Guidelines of Treatment of Patients with Substance Use Disorder
- http://psychiatryonline.org/pb/assets/raw/sitewide/practice_guidelines/guidelines/substanceuse.pdf
- "Mouse Party" – a simplified look at the effects of substances of abuse on the brain
- http://learn.genetics.utah.edu/content/addiction/mouse/