CRACKCast Episode 186: Substance Abuse
Episode Overview

Key concepts:

- Substance abuse can affect people from all socioeconomic groups and all ages.

- For the majority of patients with toxin-induced violent behavior, intramuscular butyrophenones (such as, haloperidol) are safe and rapidly effective sedating agents. With suspected sympathomimetic (eg, cocaine and amphetamines) intoxication, benzodiazepines (such as, lorazepam) should be used.

- Presentation to an ED with a complication of substance abuse may be a "teaching moment." Substance abusers should be offered drug treatment services.

Core Questions

1) List 15 complications of drug abuse:
2) List 8 physical examination findings of substance abuse and what drug(s) may be associated with the finding

Wisecracks:

1) What is the CRAFFT score to screen for substance abuse among adolescents?
2) What is unique about abusing cocaine and ethanol together?
3) What is levamisole and how does its toxicity present?
4) What are 4 common "club-drugs"?
5) List 5 red flags for drug seeking and 4 strategies for managing drug seekers.

Rosens in Perspective

Let's quickly talk about USE, COST, STEREOTYPES, and ER challenges when it comes to substance abuse.

- *The use and abuse of psychoactive substances are global and timeless.*
- *The human cost of substance abuse is high, and deaths secondary to the use of psychoactive substances are common.* [as obvious with the current fentanyl crisis].

A variety of stereotypes come to mind in compiling the profile of a substance abuser. Adherence to a belief in these stereotypes is a dangerous trap for the clinician. Physicians are likely to discount the possibility of drug intoxication in the well-dressed professional or in those at the extremes of age, but drug use and abuse spans the spectrum of society.

- Adolescents - most have experimented with illicit substances (more in Wisecracks)
- Elderly - abuse or withdrawal leading to new onset psychosis
- Professionals - abuse of stimulants
- Students - abuse of club drugs or anti-anxiety or anti-insomnia drugs

The drugs of misuse or abuse most commonly involved in deaths are cocaine, opioids, antidepressants, benzodiazepines, stimulants, and club drugs.

A major barrier to appropriate recognition and treatment of substance abuse is the lack of a precise definition. The American Psychiatric Association defines it as a maladaptive pattern of drug use associated with some manifest harm to the user or others.

Physicians have a difficult time recognizing such abuse, particularly in patients with chronic pain syndromes. Chronic pain may not manifest the typical overt sympathetic changes or physical findings of acute pain. Patients may seek treatment because of perceived failure of their outpatient regimen, an acute flare up, or because of abuse or addiction. Therefore, ***emergency clinicians constantly walk a tightrope between undertreating legitimate pain and inappropriately rewarding substance abusers with controlled medications.***

[1] List 15 complications of drug abuse:

They can affect every organ system!

Some prominent ones causing major morbidity:

- Neuro
  - Strokes
  - SAH
  - Seizures
- Cardiac
  - Endocarditis
  - Arrhythmias
- Infectious
  - HIV
  - Hep C
  - Hep B
  - Infective endocarditis
  - STI's
  - Syphilis
  - Botulism
  - Tetanus
  - Osteomyelitis
  - Septic joints
  - Abscess / cellulitis
- Psychiatric
  - Anxiety
  - Depression
  - Psychosis
  - Suicide
  - Panic attacks
  - Social isolation
- Traumatic
  - Penetrating trauma - knife **fights**
  - **Blunt trauma - MVCs**

[2] List 8 physical examination findings of substance abuse and what drug(s) may be associated with the finding

Think:

- Vitals - all of them!
- Head to toe exam, specifically:
    - Mental status
    - Skin
    - Pupils
    - Needle track marks

See Table 140.1 in Rosens 9th Edition Chapter 140 for:
Physical Examination findings of substance abuse, the Agents predominantly involved, and the proposed mechanism.

Wisecracks:

[1] What is the CRAFFT to screen for substance abuse among adolescents?

This is a huge problem! With massive amounts of morbidity and mortality.

By the time adolescents become adults in the United States, almost half will have tried an illicit drug, and over 80 percent will have used alcohol.

A large 2013 survey of teenagers in grades 9 to 12 found misuse and abuse of prescription medications to be the third most prevalent drug abuse behavior among teens, trailing only use of marijuana and alcohol.

Abuse of over-the-counter (OTC) cough medications is on par with or higher than the abuse of illegal drugs, such as ecstasy and cocaine.

A few common culprits include:

- ***Dextromethorphan abuse***
    - ***Ingesting dextromethorphan-containing OTC products,*** *such as Coricidin HBP Cough & Cold tablets, known on the streets as triple Cs, red devils, red C, red box, or skittles.*
    - *Other examples: Nyquil and Robitussin DM, which provide the sought-after high known as the "robo-buzz."*
- ***Methylphenidate and related compounds used to treat obsessive-compulsive disorder and attention-deficit/hyperactivity disorder.*** *Tablets can be abused orally, or they can be crushed and the powder injected or snorted. Despite its abuse potential, experts disagree about the extent to which methylphenidate is diverted from therapeutic use to abuse in preteens and adolescents.*
- *Numerous synthetic and naturally derived psychoactive substances ("legal highs") are easily obtained from Internet websites, "head shops," and local suppliers. One prevalent example:*
    - *"Bath salts" contain synthetic cathinones, which are pharmacologically similar to methamphetamine and N-methyl-3,4-methylenedioxyamphetamine (MDMA)*

(ecstasy) and produce similar clinical effects. A variety of adverse effects have been reported from cathinone derivatives, including tachycardia, hypertension, agitation, hyponatremia, hallucinations, paranoia, and suicide.

Acute pharmacologic effects of alcohol and/or drug use in adolescents include changes in:

- *Mood*
- *Perception*
- *Cognition*
- *Psychomotor performance.*

Substance intoxication may lead to:

- *Blackouts*
- *Aggressive behavior*
- *Unplanned sexual behavior*
- *Other behaviors associated with poor judgement.*

Substance use and/or SUDs are associated with a number of negative consequences among youth, including accidents, death, health effects, crime, pregnancy, and lower achievement

The American Academy of Pediatrics (AAP) in the United States recommends screening adolescents' use of alcohol, tobacco, and other drugs annually, typically beginning at age 11 years. They recommend using the CRAFFT screen.

The six CRAFFT screening questions are asked if the adolescent endorses drinking alcohol, smoking marijuana or hashish, or using any other substance to get high during the previous 12 months. Two or more positive answers indicate a positive screen:

[C] – Have you ever ridden in a Car driven by someone (including self) who was high, drunk, or had been using drugs?

[R] – Have you ever used drugs or alcohol to Relax?

[A] – Do you ever use Alone?

[F] – Do you ever Forget things that you did while using?

[F] – Do Family or Friends tell you to cut down?

[T] – Have you ever gotten into Trouble when using?

- **The above was compiled from Uptodate**

Check out the CRAFFT Screen in 10 different languages: has the screen as a free printable pdf.
http://www.ceasar-boston.org/CRAFFT/screenCRAFFT.php

[2] What is unique about abusing cocaine and ethanol together?

A variety of agents can increase the effects of cocaine.

This is why we need to ask about all legal and illegal drugs being used by a patient.

- *The co-ingestion of ethanol and cocaine results in an active metabolite, cocaethylene, which can enhance and magnify cocaine's effects.*
- It's a new compound produced when the two combine which acts similarly to cocaine but with a much LONGER half-life.
- This metabolic also has more hepatotoxicity

So in summary: cocaine + ETOH = more severe and lasting toxic effects

A few other co-ingestion catalytic reactions are:

- *Serotonin syndrome, (manifested by muscle rigidity, hyperthermia, diarrhea, and seizures), may result when sympathomimetic drugs are taken concurrently with other serotonergic drugs, such as selective serotonin reuptake inhibitors.*
- *Amphetamines elevate serotonin either directly, by reversible inhibition of monoamine oxidase, or by inhibiting presynaptic catecholamine reuptake. Monoamine oxidase inhibitors can provoke hypertensive crisis in patients taking sympathomimetics.*
- *patients maintained with methadone who are subsequently treated with NNRTIs* (for treatment of HIV) *are at risk for development of methadone withdrawal by NNRTI-mediated enzyme induction.*

[3] What is levamisole and how does its toxicity present?

Illicit drug laboratories have poor quality control, and many drugs are combined or "cut" with other substances to increase profits.

- *Up to 50% of street samples lack the alleged drug.*
- *Drug combinations and unanticipated additives or substitutions may produce a clinical picture discordant with what the patient claims to have taken.*
- *Some additives, such as local anesthetics or sugars, may be innocuous, but others, such as strychnine, may be lethal.*
- *Levamisole, a widely available anthelmintic agent, is now a common cocaine adulterant and can result in life-threatening agranulocytosis, leukoencephalopathy, and cutaneous vasculitides.*

[4] What are 4 common "club-drugs"?

Really depends where you work and what's available on the street.

The term "club drugs" is attributed to a wide assortment of "mood altering" substances. The list includes depressants, stimulants, hallucinogens and opiate-like drugs. The name is derived

through usage by those attending nightclubs, concerts, and all night entertainment events. - from: http://www.treatment-centers.ca/drug-information/club-drugs

A few would be:

- Amphetamines such as MDMA (ecstasy)
- Cocaine
- PCP
- Ketamine
- GHB
- LSD

[5] List 5 red flags for drug seeking and 4 strategies for managing drug seekers.

This terminology is outdated and disparaging; try to use the term “prescription drug misuse” instead!

Prescription drug misuse behaviour (drug seeking behaviour):

- Repeated visits for the same complaints
- Rapid dose escalation of addictive drugs
- Unusual and multiple allergies
- Demands for specific agents at exact doses
- Frequent ER visits leading to compulsive requests for narcotics and benzodiazepines
- Prior history of drug or alcohol misuse
- Current untreated addiction
- Poorly controlled psychiatric illness
- Erratic / poor follow-up track record

Chronic or recurrent pain syndromes (with notable exceptions like renal colic occurring after an interval of months to years) are not acute problems amenable to treatment in, or from, the ED. Patients with these conditions require consistent outpatient treatment from a regular provider or a pain management center.

How to approach suspected prescription drug misuse:

1. Communicate and document a patient risk assessment; discussion of risks and harms of treatment;
    a. Contraindications to treatment with controlled substances:
        i. Current untreated addiction
        ii. Poorly controlled psychiatric illness
        iii. Erratic follow-up
    b. Assess patient-reported data in light of collateral data from objective sources (family, medical record, physical exam findings)
2. Optimize alternative treatment options
    a. nonpharmacologic treatment with self-management strategies, behavioral treatments, physical therapy, as well as non-controlled pharmacotherapy.
3. Draft and follow a treatment agreement (treatment plan)
    a. shared decision-making, treatment goal-setting, informed consent, and defining the monitoring plan

4. Requiring patients to utilize the same pharmacy and regular follow-up with the same primary care provider (limiting dose and early refills)
5. Focus on the specific medical concern at hand
6. Deferral to chronic pain clinics

Additional information for shownotes (compiled from Uptodate)

Establishing a clear clinician-patient relationship, as with any patient

- *Documenting in the patient's medical record:*
    - *A medical history, including substance use and mental health*
    - *Physical exam*
    - *Medical decision-making*
    - *Plan of care*

- *Regular follow-up with standardized monitoring for benefit and harm*
    - *Drug testing*
    - *Use of prescription monitoring programs where available*
    - *Discussing all planned monitoring strategies in the treatment agreement*

Regular follow-up — Frequent in-person follow-up with patients on controlled substances is recommended to monitor for and document benefits and harms of treatment, including concerning behaviors that may indicate misuse or a use disorder. Guidelines vary, but visits should generally occur at least every three months and more frequently in higher risk circumstances, such as during periods of dose adjustment.

For follow-up assessment of risks and benefits in patients who are prescribed opioids for chronic pain, the "Five A's" provides a useful framework:

- Analgesia
- Activities of daily living (ie, assessment of functional status)
- Addiction
- Adverse effects
- Adherence to the treatment plan

Physical examination is essential and can provide evidence of intoxication, oversedation, withdrawal, or findings indicative of drug injection or intranasal use. Involving a patient's family member or friend can be useful for obtaining collateral history about a patient's functioning and use of the medications.