ALCOHOL AND OTHER DRUGS OF ABUSE

Tony Thrasher, D.O.
Milwaukee County BHD
Medical Director – Crisis Services
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Disclosures

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  - However, I am a full time employee of Milwaukee County and on faculty at MCW
  - Also, am an active member of the National Health Service Corps
Goals for this Presentation

1) Review the different classes of AODA
2) Discuss pitfalls that these cases can have when seen in the field
3) Recognize the various types of intoxications and how to deal with them
4) Go over 5 Main Myths of AODA
5) Go over 5 Hidden Truths of AODA
Importance to Law Enforcement

- 1) Common presentation in the field
- 2) Common presentation with EDs
- 3) Extensive medical problems can occur
- 4) AODA can mimic psychiatric symptoms and should be medically cleared
- 5) Often leads to legal charges
AODA HIDDEN TRUTH #1

✓ SOBRIETY MATTERS BUT MORE IMPORTANT ARE THE CIRCUMSTANCES UNDER WHICH THE SOBRIETY OCCURS!
AODA HIDDEN TRUTH #2

✓ ALTHOUGH ALL ADDICTION IS BIOLOGICALLY SIMILAR IN ITS ROOTS.............

✓ THE LEGAL/MEDICAL CONSEQUENCES WILL DIFFER GREATLY DEPENDING ON WHAT THE SUBSTANCE IS!
Let’s look at each of the 11 substances in some detail....

✓ 1. Alcohol
✓ 2. Amphetamines
✓ 3. Caffeine
✓ 4. Cannabis
✓ 5. Cocaine
✓ 6. Hallucinogens
✓ 7. Inhalants
✓ 8. Nicotine
✓ 9. Opioids
✓ 10. Phencyclidine
✓ 11. Sedative/
  Hypnotic/
✓ 12. The “others”
✓ Anxiolytic
To Alcohol!
The cause of—and solution to—all of life's problems.
ALCOHOL

✓ **ZERO ORDER** metabolism (like ASA and dilantin)
  ✓ 30 out of body per hour

✓ **Legal limit is 80**
  ✓ Intox up to / around 200
  ✓ Coma/death around 300-400
  ✓ Alcoholics can handle 700

✓ “CAGE” questions

✓ **Labs to watch**
  ✓ GGT, MCV, CDT, AST, ALT, TG, LDL, uric acid

✓ **Health problems**
  ✓ Age 15-29, often injuries
  ✓ Age greater than 60, often cardiovascular
  ✓ Moderate usage protects from CAD (i.e. HDL)
Alcohol INTOXICATION

- Ataxia, slurred speech, disinhibited
- Odor of alcohol..............vodka?
- Nystagmus, poor immediate memory
- Pts appearance strongly tied to their tolerance

**Along with this......you don’t have to be zero to withdraw!!!
Alcohol withdrawal

✓ Symptoms due to decrease GABA and increase glutamate

✓ Early (24-48 hours)
  ✓ Anxiety, tremor, seizures, some autonomic changes

✓ Late (48-120 hours)
  ✓ Alcoholic hallucinosis (clear sensorium), agitation, delirium, more autonomic instability
  ✓ Delirium Tremens (only delirium tx with BZDs)
Complications of alcohol abuse

- Anterograde blackouts
- Peripheral neuropathy
- Cerebellar degeneration
- Alcoholic gastritis
- Fatty liver / cirrhosis
- Pancreatitis
- Cardiomyopathy
- Wenicke/Korsakoff’s
- Other Dementias/Amnestic Syndromes
Meds for Alcoholism

- **Disulfiram (Antabuse)**
  - Aldehyde DHG
- Calcium carbimide: similar to disulfiram
- **Naltrexone (ReVia) (Vivitrol IM)**
  - Prevent positive feedback ("the high")
  - Mu opioid antagonist
- **Acamprosate (Campral)**
  - Prevent negative feedback ("the craving")
  - GABA agonist as well as NMDA antagonist
AODA MYTH #1

✓ THERE MUST BE A MEDICINE THAT CAN KEEP ME FROM DRINKING/USING/Etc......
AMPHETAMINES

- Clinical Uses: ADHD, narcolepsy
- Off Label Uses: weight loss, refractory depression
- Cocaine made illegal in 1914 by Harrison’s Act......so people turned to amphetamines
- Those who abuse, tend to start YOUNG
- Nazi Germany 1st used “Meth”
  - Using anhydrous ammonia to make meth
  - Often in binges: biker gangs v. home labs v. cartel
Stimulant Intoxication!

- Similar as a class (cocaine, etc....)
- HTN, tachycardic, tachypnea
- Angry, paranoid, labile, psychotic
- Great mimic of mania/primary psychosis
- Cardiac events / strokes
- Hypersexual, intrusive, distractible
Why Meth???

✓ By adding the meth group, you extend the half life
✓ Meth has better CNS penetration and more CNS effects
✓ Ephedrine reduction can take days while PSEUDOEPHEDRINE ONLY HOURS
✓ How made??
  ✓ “cooking” with anhydrous ammonia
  ✓ You use no heat which limits explosions and odors (except from spare NH3)
  ✓ ABUNDANT IN MIDWEST!!!
  ✓ Smoked (ice) vs. injected (crystal)
Clinical Amphetamines

- Mixture of dextro and racemic amphetamines (Adderall)
  - ADHD
- D-amphetamine (Dexedrine)
  - ADHD and narcolepsy
- L-amphetamine (Benzedrine)
- Lisdexamfetamine (Vyvanse) - less abusable?
- Methylphenidate and its relatives (NOT AMPHETAMINES IN TRUE NATURE!)
  - Ritalin, Concerta, Focalin, etc....
I've gotta cut back on the caffeine
CAFFEINE

✓ No dependence, no abuse, no withdrawal??
✓ Intoxication is described in the DSM-IV
  ✓ Greater than 250mg???
✓ Coffee (100mg / 6oz)
✓ Tea (40mg / 6oz)
✓ Soda (45mg / 12oz)
✓ Weight loss aids (75-200mg / tablet)
✓ Chocolate and cocoa (5mg / bar)
✓ ENERGY DRINKS AND COMBO WITH ETOH
Caffeine Intoxication

✓ Becoming more prevalent with energy drinks, “fat burners”, etc......
✓ Heart damage concerning
✓ Typically:
  ✓ Psychomotor agitation
  ✓ Flushed appearance
  ✓ Can be having stimulant class intox as well
CANNABIS

✓ From flowering tops of Cannabis sativa
✓ Properties due to the cannabis resin
✓ Banned in 1937 by tax act
✓ Potency proportional to the [THC]
   ✓ MUCH HIGHER POTENCY THAN IN THE PAST!
✓ Various forms of abusing
   ✓ Smoking - ingesting - baked
   ✓ Drank as extract - not IV, b/c not water soluble
CANNABIS

- Effect on endogenous cannabinoid receptors in CNS/PNS
- CB1 receptors to brain (psychoactive)
- CB2 receptors to immune system
- **Dronabinol (Marinol):** oral THC
  - Treat glaucoma, anorexia, post chemo nausea
- **Rimonabant (Acomplia):** CB1 antagonist
  - Treat obesity, smoking cessation
CANNABIS

✓ Most frequently used illicit drug
✓ Use abates frequently with maturity and acceptance of new roles
✓ Peak use in teens and 20s
✓ Dose related high
✓ Cigarette smoking precedes/correlates with cannabis use
  ✓ Synergistic with cannabis
  ✓ Decrease side effects of cannabis
Cannabis Intoxication??

- Very SUBJECTIVE...........
- Beware of things being laced....... 
- Beware of things being cut to save profits...........
- Remind patients of the strong literature condemning cannabis use in those with mood/psychotic disorders, or who are on psychotropics
- No such evidence for the non-mentally ill
- The presentation of intoxication can be very varied
- Beware of withdrawal type symptoms???
AODA MYTH #2

✓ MARIJUANA DOES NOT MATTER
✓ “IT’S NATURAL, FROM THE EARTH”
✓ “MY FAMILY/FRIENDS DO IT AND IT IS NOT A PROBLEM”
✓ “IT’S NOT LIKE TOBACCO OR ALCOHOL”
✓ “WE ALL SMOKE WEED”
✓ “THE UDS WAS ONLY POSITIVE FOR WEED”
AODA HIDDEN TRUTH #3

✓ THE PRESENCE OF DRUGS/ALCOHOL GREATLY AFFECTS THE EFFICACY OF PSYCHIATRIC MEDICATION

✓ Studies have focused primarily on cannabis decreasing antipsychotics and cocaine decreasing antidepressants

✓ However, the data on alcohol is greatly increasing
Cannabis “Round Up” *******

✓ 1) Likely the most abused substance among those with psychotic illnesses
✓ 2) Leads to noncompliance, worsening psychosis, and more tx resistance
✓ 3) Can lead to earlier onset
✓ 4) Can increase risk of those who are vulnerable and may not otherwise “get it”
✓ 5) Influences concentrations of psychotropics
✓ 6) “It may work for others, but it won’t for you!”
Cocaine

✓ Only medical use is anesthesia
✓ Freud brought to medicine
✓ Cocaine in Coca cola until 1900
✓ Harrison’s Act (1914): prohibited non-prescription use of cocaine
✓ Rare drug of abuse with NO GENDER BIAS
✓ From erythroxyylon coca bush (Peru, Bolivia): active ingredient is alkaloid synthesized by the plant
Forms of Cocaine

- Coca leaves, elixirs, tonics
- Cocaine HCl (pure) – snort or IV
- Freebase (more rapid, short lived high)
  - Ammonia and ether to free the cocaine base from cocaine HCl
  - More pure than crack and better yield
- Crack..................took off on 1980s, 1990s
  - Using baking soda to free the base
  - Smoked
  - Often more addictive, dangerous
Cocaine - medical problems

- Sinusitis, septal bleeding
- Cough, pneumonitis
- MI - Strokes
- Palpitations - Seizures
- Abruptio placenta - Low birth weight
- Premature birth - Spont. Abortions

- GREAT MIMIC OF PSYCHIATRIC SEQUELAE (in intoxication and withdrawal)
- INTOXICATION: like that of amphetamines
AODA MYTH #3

✓ IF A PATIENT TELLS YOU THEY ARE USING DRUGS, THEN YOU DO NOT NEED TO GET THE UDS........

✓ -Hampers the diagnostic process
✓ -Can miss other serious issues with co-intoxicants
✓ -Cocaine intox mimics psychosis/mania
✓ -Cocaine withdrawal mimics an impressive major depressive episode
Types of Hallucinogens

✓ Naturally occurring
  ✓ Psilocybin (mushrooms)
  ✓ Mescaline (peyote cactus)
  ✓ Bufotenin (skin glands of toads)
  ✓ DMT (dimethyltryptamine) (Virola leaves)

✓ Synthetically made
  ✓ LSD (made in 1938 by Hoffman, but also some source in rye fungus)
  ✓ MDMA and MDA
    ✓ Mostly seen as amphetamines via DSM-IV classification
Hallucinogen facts and treatments

- Most common use in young white males
- Higher usage in the Western US than in the South or midwest
- Very few present to the ED, but high severity
- PRNs and seclusions are standard of care
- Some can be “talked down”, unlike PCP
- Complications
  - Cardiac effects, seizures, and hyperthermia
  - MOST PROBLEMS ARE WHAT YOU DO WHEN YOU ARE “TRIPPING”
Inhalants

✓ Very popular among young children
  ✓ Availability, legal, and cheap

✓ What are they?
  ✓ Solvents, glues, paint thinner, fuels, aerosol

✓ What is in them?
  ✓ Toluene, benzene, hydrocarbons, etc..
  ✓ Do not include nitrous oxide, ether, and amyl nitrate.

✓ How do they work?
  ✓ Sniff fumes or “huff” through the mouth
  ✓ CNS depressant but also works through ANOXIA
Signs of Inhalants

- Perioral, perinasal rashes
- Odd odors or residues
- Widespread mucous membrane irritation
- Most common by young white males
- Increased likelihood of Conduct DO and progression to ASPD
AODA MYTH #4

✓ FOR SOMEBODY TO BE SUFFERING FROM ADDICTION, THERE MUST BE SOMETHING ELSE GOING ON!

✓ Most current studies show that b/t 40-50% of the mentally ill have a co morbid AODA problem

✓ Other studies have confirmed the reciprocal data, therefore……

✓ Close to half of those with AODA issues suffer from primary addiction as their mental illness
I NEED A CIGARETTE! I'M HAVIN' A NICOTINE FIT! IT'S BEEN FOREVER SINCE I HAD A DRAG!!

HOW LONG?

OKAY! TEN MINUTES!!
Nicotine

✓ Powerful reinforcement in absence of subjective euphoria
✓ Mechanism: activate nicotinic Ach receptors, especially those on VTA
✓ Why so dependent?
  ✓ Instant effect - positive reinforce
  ✓ Controllable dose
  ✓ Frequent use
Nicotine (continued)

- 2nd most addictive substance, after opiates
- Causal link to 20% of all deaths
- 1/3 try to quit each year
- Doesn’t cause the legal issues, but has significant pulmonary, cardiac, and oncologic ramifications
- SMOKERS DON’T MINIMIZE SYMPTOMS
AODA HIDDEN TRUTH #4

✓ MANY PEOPLE WITH ADDICTIONS HAVE ONLY AODA AS THEIR ILLNESS AND CAN BE PRODUCTIVE OTHERWISE.
OPIATE OF THE MASSES

First taste is free,
Then you have to pay.
MUSIC FROM THE MOTION PICTURE featuring:

Damon Albarn
Bedrock
featuring KYO
Blur
Elastica
Brian Eno
Leftfield
New Order
Iggy Pop
Primal Scream
Pulp
Lou Reed
Sleeper
Underworld

Trainspotting
Opioids

✓ All are some preparations of the opium poppy (papaver somiferum)
✓ 1803: morphine isolated (1\textsuperscript{st} alkaloid)
✓ 1832: codeine extracted from opium
✓ 1874: heroin from morphine
✓ 1924: Heroin made illegal
  ✓ Most abused and rapidly acting of all opiates
  ✓ IV, snort, or smoke
  ✓ Very popular among older users
  ✓ Cross BBB easily (thus the quick rush)
  ✓ Waxing and waning LOC
Opioid Intoxication

- The problem is not usually what you do when you are intoxicated, but **WHAT YOU DO TO GET IT**
- Miosis, drowsiness, slurred speech, and impaired concentration
- Many complications from IV usage
  - HIV, hepatitis, MRSA
  - Abscesses, lack of access for further usage
Opioid Withdrawal

- Very uncomfortable, but not life threatening
- Withdrawal only fatal to a FETUS
- Relapse data on treated vs. “cold turkey”
  - Minimal differences
  - Better to make it “easy” or “sufferable”
  - Supportive
    - Clonidine
    - Ibuprofen
    - Immodium
    - Trazodone
    - Reglan
    - Compazine
Prescription Opiates

- Methadone, LAAM, Codeine, Morphine
- Buprenorphine, Pentazocine (Talwin)
- Nalbuphine (Nubain), Butorphanol (Stadol)
- Oxycodone (Percocet), Hydrocodone (Vicodin), Propoxyphene (Darvocet)
- Hydromorphone (Dilaudid), Fentanyl
- Meperidine (Demerol)
THE BEST COLLECTION OF PCP TRIPS
Phencyclidine (PCP)

- Tranquilizer/anesthetic with hallucinogenic properties (not a true hallucinogen)
- NMDA antagonist
- Dissociative anesthetic (like ketamine)
  - Reinforcing properties and risks that other hallucinogens don’t have
- Effects can vary
  - Can be “high”, “delirious”, or very agitated
  - UNPREDICTABLE!!!
PCP Facts

✓ Often falsely represented on the streets
✓ Can’t control the dose…it’s unknown
✓ People will often use in sprees
  ✓ Like cocaine and methamphetamine
✓ No tolerance or w/d noted
✓ Can be po, IV, or inhaled
✓ Key diagnostic factors in INTOXICATION
  ✓ Aggressive with nystagmus, hyperacusis, and insensitivity to pain
AODA HIDDEN TRUTH #5

✓ AODA CAN MIMIC ANY SYMPTOM OR PSYCHIATRIC PRESENTATION!

✓ There is no example of “this is too much to be drugs.”

✓ Rare exception for unsolicited “first rank symptoms” of psychosis
Sedatives/Hypnotics/Anxiolytics

✓ Barbituates, Benzodiazepines, sleep aids, antihistamines, etc.....
✓ Often co-morbid with alcohol dependence with similar w/d and intox.
✓ Often not noted by non-mental health providers because “they have a prescription for it.”
✓ **Rarely is this the only thing that is being abused……high degree of co-morbid AODA
AODA MYTH #5

✓ “They must be using it to self medicate other problems”

✓ Older hypothesis by Drs. Khantizian/Duncan (1970s/1980s)


✓ Recent studies do not deny that short usage of illicits can hide symptoms, but the more long term risk is the further development of worsening symptoms due to the AODA
Barbituates

✓ The earliest sedative/hypnotics
✓ Quite abused in the 1960s and 1970s
  ✓ More prone to side effects and overdosing
  ✓ Their popularity decreased after the BZDs

✓ Types
  ✓ Phenobarbitol (Luminal): seizures
  ✓ Pentobarbitol (Nembutal): withdrawal dosing
  ✓ Amyobarbitol (Amytal): guided interviewing
Newer stuff “on the market”

1) **K2/Spice** (synthetic cannabis, designer drug, herbal incense, lower ½ life then MJ)
   - More psychosis, w/d, seizures, and cardiac
2) **Bath salts** (MDPV, stimulant properties, Magic, Aura, Blue Silk, Dove)
   - Very similar to cocaine and more potent than Ritalin (with more cardiotoxicity and seizures)
3) **Salvia** (hallucinogen in religious ceremonies for centuries) - legal with concerns ~ cannabis
4) **Cough syrup and dextromethorphan** (DXM)
   - “Robotripping”……tactile hallucinations prevalent
More “newer stuff”

5) **Coricidin**
   - Cold medicine taken in high doses for the DXM effect (“Triple C”, “Dex”, “skittles”)
   - Tachycardia, hallucinations, lose motor

6) **“Wet”**
   - Dipping cigarettes in liquid PCP

7) **“Weed Candy”**
   - Candy laced with MJ...beyond baked goods
ECSTASY: a synthetic, psychoactive drug that produces feelings of increased energy, euphoria, emotional warmth, and distortions in time, perception, and tactile experiences. MOLLY is the purest form of MDMA.

LOW ENERGY & DEPRESSION, malignant hyperthermia
Even more “newer stuff”

8) “Smiles”
- Hallucinogen, often liquid/blotter paper
- Mixed with chocolate or sweets
- Loss of control, panic, memory loss, palps

9) “Molly”
- Substitute amphetamine MDA
- Powder form rather than the pill Ecstasy
- Marketed as “more pure”
10) 2C-E (“Europa”)
   - Hallucinogen, rave drug, cousin drugs
   - 2C-B went through a lengthy banning
11) Suboxone / buprenorphine
   - Often justified d/t cost issues
12) Don’t forget the most *abused that are already at home*
   - Oxys, Percs, fentanyl patches, etc…
A couple more

13) **Kratom**
- Taking over the K2/spice, bath salt market
- Stimulant at low dose, high dose sedative
- “Lucky”, “Jackacock”
- Hallucinogenic opioid, quite addictive
- Leaves of *Mitragyna speciosa*
- Used for pain relief in Malaysia/Thailand
- “marketed” as a way to “get off opiates”
- Thailand and Denmark banned it!!
A couple more..........

14) Methoxetamine

- Dissociative hallucinogen (mild ketamine?)
- Mexxy, MXE, M-ket
- Banned by UK in April 2012 (also Germany, Japan, and Sweden)
- Half life 4X that of ketamine
- Non competitive NMDA antagonist and dopamine reuptake inhibitor
- Schedule I in FL, ND, and VA
Summary of AODA Myths

- 1) There must be a medicine to fix this
- 2) Marijuana does not matter
- 3) If a patient states they are using, then you do not need to do a UDS
- 4) If someone is addicted, there must be another mental health cause
- 5) They are only using to self medicate
Summary of AODA Hidden Truths

✓ 1) Sobriety matters but not as much as the context driving the sobriety
✓ 2) Although all addiction is biologic, the specific usage is needed to treat
✓ 3) AODA greatly affects the efficacy of psychiatric medication
✓ 4) Many people with AODA have that as their primary (only) issue
✓ 5) AODA can mimic any psychiatric symptom
AODA Challenges and the “Truth”

✓ There are erroneous assumptions that lying is synonymous with AODA
✓ A more therapeutic way of approaching this is that there are many things affecting what the patient is going to tell you:
  ✓ Social stigma  Employment
  ✓ Parole/probation  Housing
  ✓ Custody cases  Relationships
  ✓ Desire to not be perceived as “an addict”
Suggestions for Approaching Patients

✓ 1) This is a serious medical issue for which the treatments are not necessarily meds
✓ 2) It will impact the treatment of your other illnesses
✓ 3) The illegal nature of this misuse can also affect your development
✓ 4) There is a strong modeling component among parents and children with AODA
✓ 5) We will deal with all your problems but the AODA is often prioritized as the first issue
Law Enforcement warnings for AODA

✓ 1) Be aware of the medical problems they bring
✓ 2) EMS can rarely “clear in field”
✓ 3) AODA plus mental illness CAN increase propensity for violence
✓ 4) There can be legal involvement tied to the AODA that complicates the psych
References

- **Essentials of Clinical Psychopharmacology.** Schatzberg and Nemeroff. 2001
- **Mass General Hospital: Psychiatry Update and Board Preparation, 2nd ed.** Stein and Herman, 2004.
- **Lange’s Current Diagnosis and Treatment in Psychiatry.** Ebert, Loosen, and Nurcombe. 2000.
- **Synopsis of Psychiatry, 10th ed.** Kaplan and Saddock, 2007.
- **Essentials of Medicine, 5th ed.** Andreoli, 2001.
✓ Thank you for your time and attention!
“History, despite its wrenching pain, cannot be unlived, but if faced with courage does not need to be lived again!”

-Maya Angelou