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SUBSTANCE ADDICTION: TREATMENT BEYOND DIAGNOSIS

Affiliations

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- ❖Presence Behavioral Health
- ❖Hazelden Betty Ford Foundation

I have received no funding or benefit from any commercial entity.

Objectives

1. Accurately diagnose alcohol and substance use disorders according to DSM-5 criteria
2. Recommend an appropriate treatment program and level of care for those with alcohol and substance use disorders
3. Familiarize with medication options when indicated to assist treatment of alcohol and substance use disorders

HPI

- TK is a 40 y/o female with no significant past medical history presented to Rush ED after intentional alcohol and drug (clonazepam) overdose
- Presentation in the ED:
  - Patient appeared distressed, tearful, and confused. Stated to the ED physician: "I don't want to live anymore, I tried to kill myself." She doesn't give a reason why but states, "I'm a bad person." Pt admitted to overdosing on clonazepam, taking 7 (?) pills today and drinking "a lot." History was limited due to altered mental status.

HPI – ER Psych assessment

- Patient had gone out to lunch with her coworkers and ordered several cocktails
  - She had three large cocktails
- Per patient, the alcohol did not adequately make her “not feel” so she took 0.5 mg clonazepam, subsequently took four more
- TK does not remember what happened after that
  - Was told she passed out in her office and that a coworker called an ambulance

HPI continued

- Patient wanted to make it clear that this was “not a suicide attempt”
  - “trying not to feel”
  - “real dumb move”
- Denies manic or depressive symptoms
- Denies HI and SI
- Denies A/V hallucinations
- Reports a strong support system (husband and family)

Additional Information in the HPI

- Admits to multiple stressors
  - New boss who "doesn't like me"
  - Apart from her husband and family for over one year due to work
  - Financial problems: unable to sell their condo in AZ; husband looking for new job
- All culminated after a bad meeting with her boss

Psychiatric History

- Patient started seeing a psychiatrist about 4 weeks ago, diagnosed with panic attacks
  - Describes her panic attacks as her heart beating out of her chest, cannot breathe or swallow, HR extremely elevated
- Prescribed escitalopram and clonazepam
  - Discontinued the SSRI because it made her feel "weird and disconnected from reality"
  - Has "not really been taking the Klonopin either"
- Self medicates with alcohol whenever she feels a panic attack coming on

MSE

- Appearance: In hospital attire, sitting up in bed
- Behavior: Appropriate, no psychomotor agitation, calm
- Speech: Spontaneous, normal rate and rhythm
- Attitude towards examiner: Cooperative
- Mood: "Fine, but the withdrawal symptoms are getting worse"
- Suicidal Ideation: None
- Affect: Congruent with mood, normal range
- Thought Process: Linear, goal-directed
- Thought Content: Denies SI and HI, denies A/V hallucinations, no delusions
- Sensorium and Cognition: Alert and oriented x 3, MMSE not performed
- Impulse Control: Good

Drinking Habits

- Has "about a fifth of vodka a week" along with "several cocktails and glasses of wine per day"
- CAGE
  - Feels concerned about her drinking
  - Feels guilty about her drinking
  - Denies needing an eye-opener
  - Others don't know how much she drinks (anger)
- Labs suggest that her drinking habits are heavier than patient admits

LABS

- Blood alcohol level (BAL):
  - **521 upon admission to ED** **(BAC = 0.521%)**
  - 85 the next day
- Urine Toxicology
  - Positive for benzodiazepines
- MCV: 112
- Folic Acid: 1.6 (7.0-31.4)
- Vitamin B12: 174 (210-920)
- LFTs
  - T. Bili 1.4 (0.2-1.3)
  - Alk Phos 133 (30-125)
  - AST 216 (3-44)
  - ALT 115 (0-40)

BAC	Predictable Effects
.02% to .04%	Lightheaded – Relaxation, sensation of warmth, "high," minor impairment of judgment
.05% to .07%	Buzzed– Relaxation, euphoria, lower inhibitions, minor impairment of reasoning and memory, exaggerated emotions (good and bad)
.08% to .10%	Legally Impaired – Euphoria, fatigue, impairment in balance, speech, vision, reaction time and hearing, judgment and self-control are impaired
.11% to .15%	Drunk – "High" reduced and depressive effects (anxiety, depression or unease) more pronounced, gross motor impairment, judgment and perception severely impaired
.16% to .19%	Very Drunk – Strong state of depression, nausea, disorientation, dizzy, increased motor impairment, blurred vision, judgment further impaired
.20% to .24%	Dazed and Confused – Gross disorientation to time and place, increased nausea and vomiting, may need assistance to stand/walk, impervious to pain, blackout likely
.25% to .30%	Stupor – All menal, physical and sensory functions are severely impaired, accidents very likely, little comprehension, may pass out suddenly
.31% and up	Coma – Level of surgical amnesia, onset of coma, possibility of acute alcohol poisoning, death due to respiratory arrest is likely in 50 % of drinkers

Women	Approximate blood alcohol percentage									
	Body weight in pounds									
Drinks	90	100	120	140	160	180	200	220	240	
0	.00	.00	.00	.00	.00	.00	.00	.00	.00	Only safe driving limit
1	.05	.05	.04	.03	.03	.03	.02	.02	.02	Impairment begins
2	.10	.09	.08	.07	.06	.05	.05	.04	.04	Driving skills significantly affected Possible criminal penalties
3	.15	.14	.11	.10	.09	.08	.07	.06	.06	
4	.20	.18	.15	.13	.11	.10	.09	.08	.08	
5	.25	.23	.19	.16	.14	.13	.11	.10	.09	
6	.30	.27	.23	.19	.17	.15	.14	.12	.11	Legally intoxicated Criminal penalties
7	.35	.32	.27	.23	.20	.18	.16	.14	.13	
8	.40	.36	.30	.26	.23	.20	.18	.17	.15	
9	.45	.41	.34	.29	.26	.23	.20	.19	.17	
10	.51	.45	.38	.32	.28	.25	.23	.21	.19	

Subtract 0.01 percent for each 40 minutes of drinking.
One drink is 1.25 oz. of 80 proof liquor, 12 oz. of beer, or 5 oz. of table wine.

Social History

- Denies tobacco or illicit drug use
- Married, no children
- Lives by herself and is away from her husband (AZ) and family

Physical Exam

- Significant for:
  - Tachycardia (HR 104)
  - Bilateral tremor in upper extremities
- Negative for
  - Acute distress

Assessment and Plan

- TK is a 40 year old female with a recent diagnosis of panic disorder who brought to the ED following benzodiazepine and alcohol overdose.
  - CIWA (Clinical Institute Withdrawal Assessment for Alcohol) protocol
  - Thiamine, folic acid, Vit B12 supplementation
  - Recommended that patient enter treatment for alcohol abuse after this hospitalization

DSM Criteria

DSM-IV:

- Divided into two separate diagnoses
  - Dependence – "dependence syndrome"
  - Abuse – social and interpersonal consequences of heavy use
- Dependence above abuse in a hierarchy
  - Abuse should not be diagnosed when dependence was present

DSM Criteria

DSM-IV:

- Strength – Dependence
  - Shown to have high reliability and validity

DSM Criteria

DSM-IV:

- Weaknesses - Abuse
  - Much lower reliability and validity for abuse
  - Abuse often assumed to be milder than dependence
  - Abuse assumed to be a prodromal condition to dependence
  - "Diagnostic orphans"

DSM Criteria

DSM-IV:

- Hierarchy, not criteria, led to poor reliability

Solution for DSM-5

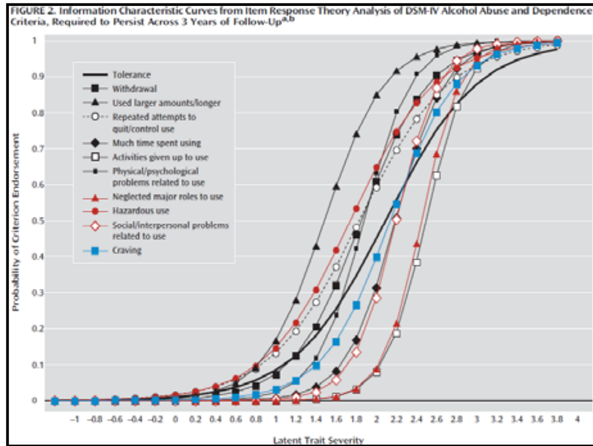
Keep criteria – Eliminate hierarchy!

DSM Criteria

FIGURE 1. DSM-IV and DSM-5 Criteria for Substance Use Disorders

	DSM-IV Abuse[a]		DSM-IV Dependence[b]		DSM-5 Substance Use Disorders[c]	
Hazardous use	X	≥1 criterion	–		X	≥2 criteria
Social/interpersonal problems related to use	X		–		X	
Neglected major roles to use	X		–		X	
Legal problems	X		–		–	
Withdrawal[d]	–		X	≥3 criteria	X	
Tolerance	–		X		X	
Used larger amounts/longer	–		X		X	
Repeated attempts to quit/control use	–		X		X	
Much time spent using	–		X		X	
Physical/psychological problems related to use	–		X		X	
Activities given up to use	–		X		X	
Craving	–		–		X	

[a] One or more abuse criteria within a 12-month period *and* no dependence diagnosis; applicable to all substances except nicotine, for which DSM-IV abuse criteria were not given.
[b] Three or more dependence criteria within a 12-month period.
[c] Two or more substance use disorder criteria within a 12-month period.



DSM Criteria

DSM-5: Alcohol/Substance Use Disorders

- Specifiers:
  - Current Severity
    - Mild – presence of 2-3 symptoms
    - Moderate – presence of 4-5 symptoms
    - Severe – presence of 6 or more symptoms

DSM Criteria

DSM-5: Alcohol/Substance Use Disorders

- Specifiers:
  - If full criteria for substance use disorder were previously met:
    - In early remission – no criteria* met for 3-12 months
    - In sustained remission – no criteria* for > 12 months

  *with the exception of "craving, or a strong desire to use"

Criteria for TK

	Criterion	
1.	Hazardous use	Yes
2.	Social/interpersonal problems	No
3.	Neglected major roles	No
4.	Withdrawal	Yes
5.	Tolerance	Yes
6.	Used larger amounts/longer	Yes

Criteria for TK

	Criterion	
7.	Attempts to quit/cut down	No
8.	Much time spent using	Yes
9.	Physical/psychological problems	Yes
10.	Activities given up to use	? (No)
11.	Craving	Yes

Has 7 positive criteria

DSM-5 diagnosis: Alcohol use disorder, severe

Substance Abuse Treatment

Types of Treatment Programs and Levels of Care

Substance Abuse LOC

Before a treatment plan or LOC can be recommended, must obtain:

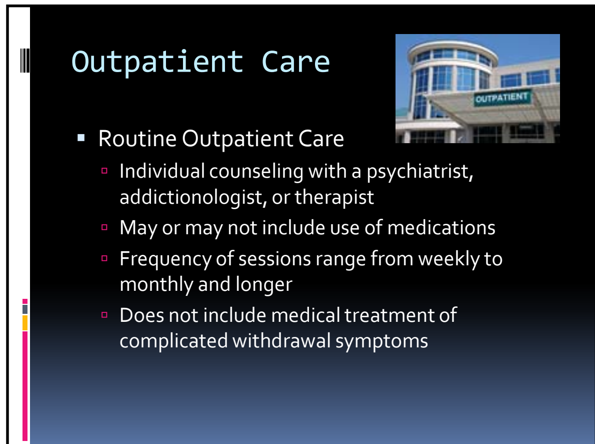
- Complete assessment of current use
- Substance abuse and treatment history
- Medical and psychiatric history
- Social situation
- Identification of treatment goals

Outpatient Care

- 12-Step Programs
- Routine Outpatient Care
- Intensive Outpatient Program (IOP)
- Partial Hospitalization Program (PHP)

Outpatient Care

- 12-Step Programs
  - Community-based and free of charge
  - Opportunity for contact with individuals with many years of recovery
  - Offers support and strategies for a successful recovery
  - Allows for long-term participation and sponsorship



Outpatient Care

- Intensive Outpatient Program (IOP)
  - Structured treatment that teaches about the concepts of addiction and recovery
  - Typically 3-5 days per week for an average of 3-4 hours of treatment per day
  - Usually encourages participation with 12-step programs
  - Many structured so individuals may continue to live and work in their community

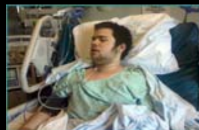
Outpatient Care

- Partial Hospitalization Program (PHP)
  - Structured treatment for those with significant impairment or previous unsuccessful attempts to remain sober at lower LOC programs
  - Typically consists of 5-7 days per week for 6-8 hours each day
  - May include an arrangement for sober housing while attending the program

Inpatient Care

- Inpatient Detox
- Inpatient Acute Care
- Inpatient Residential

Inpatient Care



- Inpatient Detox
  - 24-hour intensive medical care
  - Individual is dependent on alcohol, sedatives, and/or opiate-based drugs
  - Typically intended for people whose situations are medically-complicated
  - Can be accomplished on detox, medical, or psychiatric unit

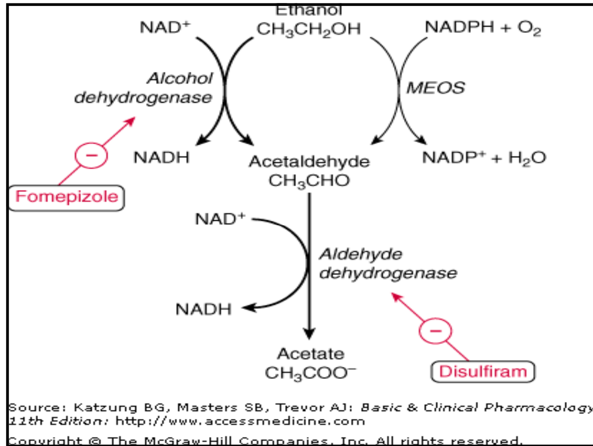
Inpatient Care
Inpatient Acute Care
May be recommended following inpatient detox after withdrawal symptoms have decreased
Medical or psychiatric symptoms that require 24-hour care
Daily doctor visits are needed for continued stabilization
Treatment is typically short-term

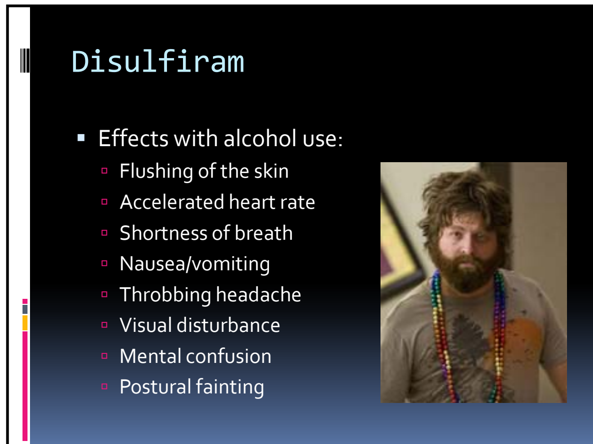
Inpatient Care
Inpatient Residential
Considered after multiple attempts at other levels of care have failed
Intended for people who do not need medical supervision
May last 28 days or more (typically 30-90 days)
Not appropriate for people who are unmotivated for change and recovery

Treatment Locator
SAMHSA: Substance Abuse & Mental Health Services Administration
(U.S. Dept of Health and Human Services)
http://findtreatment.samhsa.gov/
Substance Abuse and Mental Health Services Administration
SAMHSA
www.samhsa.gov • 1-877-SAMHSA-7 (1-877-726-4727)

What can they do?

- Medications can be used to assist in treatment for addictions in several ways:
  - Prevent withdrawal symptoms
  - Reduce urges and cravings to use
  - Block effects of drugs/alcohol





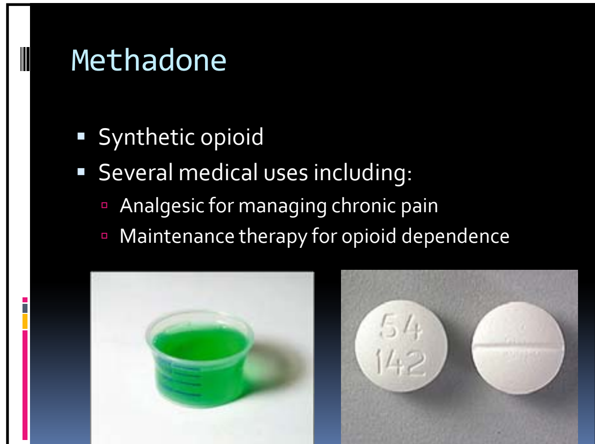
Disulfiram

- No tolerance to disulfiram: the longer it is taken, the stronger its effects
- May last for up to two weeks after the initial intake
- Does not reduce alcohol cravings
  - Leads to **extremely poor compliance**
  - Only 20% of patients taking disulfiram were found to be in good compliance after 1 year

JAMA 256 (11): 1449–55

Methadone

- Synthetic opioid
- Several medical uses including:
  - Analgesic for managing chronic pain
  - Maintenance therapy for opioid dependence

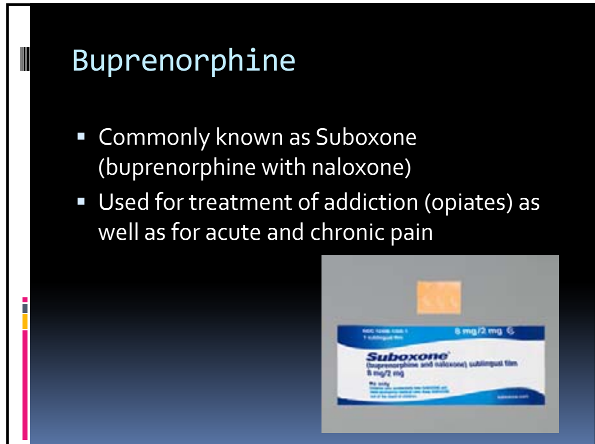


Methadone

- Produces similar effects as opiates such as heroin and morphine, therefore will prevent withdrawal
- Long duration of effect – much less euphoric effect than other opiates
- Very inexpensive compared to other treatments for opiate dependence

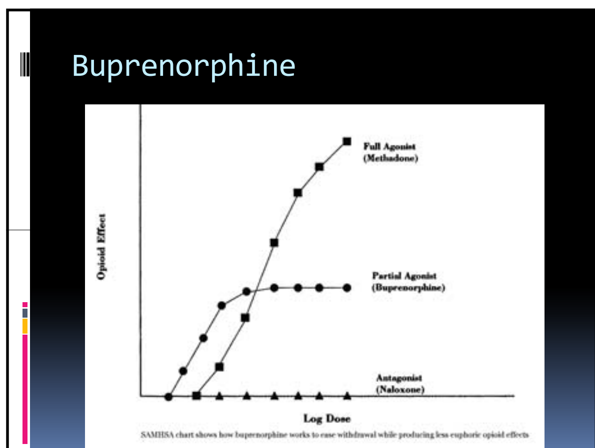
Methadone

- Drawbacks/side effects:
  - Sedation, constipation, respiratory depression – opiate side effects
  - Significant risk of abuse/diversion
  - Daily dosing must be done in a clinic
  - Can be quite difficult to cut down or discontinue



Buprenorphine

- **Partial agonist** activity at μ-opioid receptors
  - Less likely to produce a response in contrast to a full agonist (eg. Morphine)
- Very **high binding affinity** for the μ receptor
  - Full agonists or antagonists unlikely to reverse its effects



Buprenorphine

- Must be taken sublingually (high "first pass effect")
  - Sublingual films – 2 mg, 4mg, 8 mg, or 12mg
  - Sublingual tabs – previously discontinued
- Also comes as Subutex
  - Buprenorphine only – no naloxone
  - Higher potential for abuse
  - Indicated only for specific populations

Buprenorphine

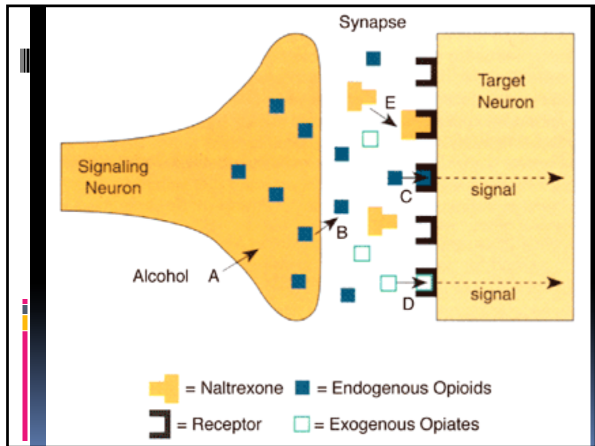
- Drawbacks/side effects:
  - Can precipitate withdrawal if given too early – must wait until withdrawal symptoms start
  - Potential for abuse and diverting
  - Can be difficult to reduce dose or discontinue
  - Expensive if no coverage by insurance provider

Naltrexone

- Opioid receptor antagonist used primarily in the management of alcohol dependence and opioid dependence
- Many studies are looking at effectiveness for various addictive and compulsive behaviors

Naltrexone

- How does it work?
  - *Competitive antagonist* at opioid receptors
  - Reversibly blocks or attenuates the effects of opioids
  - Effect to reduce craving for alcohol not fully understood
  - Plasma halflife of naltrexone is about 4 hr, for 6-β-naltrexol 13 hr – daily dosing



Naltrexone

- Alcohol dependence:
  - Reduces frequency and severity of relapse to drinking
  - Reduces craving while being taken
- Opiate dependence:
  - Blocks the euphoric effects of opiate use
  - Has less effect on opiate cravings

Naltrexone

- Drawbacks/Side effects:
  - Non-specific GI distress (diarrhea/nausea)
  - Can cause liver damage (rare)
  - Can induce opiate withdrawal unless started 7-10 days after last opiate use
  - Must be taken daily – if cravings become overwhelming, can be easily skipped or discontinued increasing chance for relapse

Vivitrol

- *Injectable* form of naltrexone
- Delivers 380mg of naltrexone intramuscularly monthly – given in the gluteus
- Approved for alcohol and opiate use disorders

Vivitrol

- Advantages over oral naltrexone:
  - Much higher rates of adherence
  - Greatly reduced GI related side effects
  - More consistent plasma levels
- Most common side effect – injection site pain

Unlike most depot injectables, Vivitrol is recommended to be started without an oral trial of naltrexone.

Vivitrol

24 Week Trial for Opioid Addiction, N = 250

1. Weeks abstinent: Naltrexone 90%
   Placebo 35%

2. Opioid free days: Naltrexone 99.2%
   Placebo 60.4%

Lancet 2011; 377:1506-13

Vivitrol

24 Week Trial for Opioid Addiction, N = 250

3. Mean change in craving: Naltrexone -10.7%
   Placebo +0.7%

4. Median retention: Naltrexone 168 days
   Placebo 96 days

Lancet 2011; 377:1506-13

Acamprosate

- Reduces the excitatory surge that withdrawal from alcohol causes

  Glutamate >>> GABA

- Leads to improved outcomes through a **reduction in cravings and urges**
- Studies show best abstinence results are when used *in conjunction* with naltrexone

Acamprosate

- Drawbacks/Adverse Effects:
  - Three times a day (TID) dosing
    - (2 x 333mg) x 3 times per day
  - Side effects can include diarrhea, headaches and insomnia
  - Cautioned for use in people with kidney dysfunction

Gabapentin (Neurontin)

Not FDA approved for alcohol use disorders

BUT

New research indicates gabapentin may be safe and as effective in treating alcohol dependence as other FDA approved meds.

Gabapentin (Neurontin)

- JAMA Internal Medicine – 2014
  - 150-patient randomized, placebo-controlled, double blind clinical trial conducted at The Scripps Research Institute
  - 3 groups: gabapentin 900 mg/day, 1800 mg/day, placebo; all received counseling
  - Sought to examine rates of sustained remission, no heavy drinking, and reduction of alcohol-related insomnia, dysphoria, and craving

Gabapentin (Neurontin)

12 Week Trial for Alcohol Dependence, N = 150

1. Abstinence Rate *(P = 0.04)*:
   - Gabapentin 1800 mg/d 17.0%
   - Gabapentin 900 mg/d 11.1%
   - Placebo 4.1%

JAMA Intern Med. 2014;174(1):70-77

Gabapentin (Neurontin)

12 Week Trial for Alcohol Dependence, N = 150

2. No Heavy Drinking Rate *(P = 0.02)*:
   - Gabapentin 1800 mg/d 44.7%
   - Gabapentin 900 mg/d 29.6%
   - Placebo 22.5%

JAMA Intern Med. 2014;174(1):70-77

Gabapentin (Neurontin)

12 Week Trial for Alcohol Dependence, N = 150

- Similar linear dose effects were obtained with measures of mood (F_2 = 7.37; P = .001), sleep (F_2 = 136; P < .001), and craving (F_2 = 3.56; P = .03).
- Terminations owing to adverse events (9/150), time in the study (mean 9.1 weeks), and rate of study completion (85/150) did not differ among groups.

JAMA Intern Med. 2014;174(1):70-77

Gabapentin (Neurontin)

12 Week Trial for Alcohol Dependence, N = 150

Conclusions:

Gabapentin (particularly the 1800-mg dosage) was effective in treating alcohol dependence and relapse-related symptoms of insomnia, dysphoria, and craving, with a favorable safety profile.

JAMA Intern Med. 2014;174(1):70-77

Back to Patient TK

Diagnosis: **Alcohol use disorder, severe**

Treatment recommendations:

1. Discontinue benzodiazepine use
2. Enter into treatment of alcohol use d/o in IOP level of care
3. Follow up in psychiatry/dual diagnosis clinic for further assessment of anxiety symptoms and possible medication management

Take Home Messages

- The DSM-5 criteria for substance use and addiction are very similar to DSM-IV, but the diagnosis no longer differentiates between abuse and dependence.
- Recommending an appropriate treatment program and level of care is just as important as properly diagnosing a substance use d/o.
- Medications are available and approved to assist in treating substance use disorders.

Treatment Locator

SAMHSA: Substance Abuse & Mental Health Services Administration

(U.S. Dept of Health and Human Services)

http://findtreatment.samhsa.gov/

References

- Fuller, Richard K.; Branchey, L; Brightwell, DR; Derman, RM; Emrick, CD; Iber, FL; James, KE; Lacoursiere, RB et al. (1986). "Disulfiram Treatment of Alcoholism: A Veterans Administration Cooperative Study". *JAMA* **256** (11): 1449–55.
- Krupitsky E, Nunes EV, Ling W, Illeperuma A, Gastfriend DR, Silverman BL (April 2011). "Injectable extended-release naltrexone for opioid dependence: a double-blind, placebo-controlled, multicentre randomised trial". *Lancet* **377** (9776): 1506–13.
- Barbara J. Mason, PhD; Susan Quello, BA, BS; Vivian Goodell, MPH; Farhad Shadan, MD; Mark Kyle, MD; Adnan Begovic,MD (Jan 2014). "Gabapentin Treatment for Alcohol Dependence, A Randomized Clinical Trial". *JAMA Internal Medicine* **174**(1):70-77.
- Hasin DS, O'Brien CP, Auriacombe M, Borges G, Bucholz K, Budney A, Compton WM, Crowley T, Ling W, Petry NM, Schuckit M, Grant BF. (2013 Aug 1) "DSM-5 Criteria for Substance Use Disorders:Recommendations and Rationale". *American Journal of Psychiatry*. **170**(8):834-51.