Alcohol Use Disorder: Introduction to treatment for first year medical students

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Outline Draft adapted from Kathleen Broad, MD, FRCPC:

I. Introduction

A. Alcohol Use Disorders (AUDs): common and undertreated

1. Up to 50% of drinkers have a problem[1,2]

2. Lifetime prevalence AUDs 12% (definition presented below)[3]

3. Only 25% with AUD ever seek help

4. <10% with AUD receive treatment[3,4]

5. ID AUDs helps assessment & Rx other probs (e.g., depression, panic)

B. AUD complications are expensive

1. Costs US $223.5 billion/yr[5]

2. Problematic alcohol use has been linked to:

a. Motor vehicle accidents (up to 30% of road fatalities)[6]

b. Poor academic performance[7]

c. ↑ risk suicide (up to 5 times)[8]

d. ↑ violence, including with intimate partner[9]

e. ↑ overdose deaths (involved in 20% of opioid related deaths)[10]

f. ↑ sexually transmitted infections (STIs) including HIV[11–13]

C. This lecture covers:

1. Definitions of alcohol use disorder (AUDs) & alcohol withdrawal

2. Alcohol effects on the brain and how this relates to how treatments work

3. The course of AUDs

4. Treatment of AUDs

a. Alcohol use disorders are often missed clinically

b. Treatment should be adapted based on the individual

c. Optimal treatment is both medications and talk therapy

D. Case e.g.: Sally (25 y/o single, F started heavy drinking in high school & works as waitress)

1. Drunk – argued with boss and boyfriend when drinking

2. Recently fired due to drinking on job

II. Definitions (2013 Diagnostic & Statistical Manual of Mental Disorders-5 [DSM-5])[14]

A. AUDs

1. 2+ within same 12 months

2. Including:

a. Drinking more or for longer than intended

b. Unsuccessful efforts to ↓ or stop

c. Spending large amounts of time drinking/recovering from effects

d. Craving (i.e., strong desire/urge) for alcohol

e. Drinking → failure to fulfill life obligations (e.g., missing work)

f. Drinking → ↓important activities (e.g., exercise/family celebrations, etc.)

g. Drinking in hazardous situations (e.g., while or before driving)

h. Continued drinking despite social/interpersonal problems

i. Continued drinking despite physical/psychological problems

j. Tolerance (e.g., must drink ↑ amount to get same effect)

k. Withdrawal symptoms (covered below)

B. Alcohol withdrawal[15]

1. Occurs because body adapts to regular heavy drinking

2. Symptoms: opposite of acute effects of alcohol

3. Criteria include

a. Recent ↓ alcohol use after period of heavy drinking

b. 2+ of:

1’ Sweating or ↑ pulse

2’ Hand tremor

3’ Insomnia

4’ Nausea or vomiting

c. <3% also have agitated confusion (delirium or delirium tremens)

C. How Sally fulfilled criteria

1. For definition of alcohol use disorder, Sally had:

a. Continued drinking despite social problems

b. Drinking leading to failure to fulfill life obligations

2. For withdrawal, Sally had not developed the problem

III. Alcohol effects and how supports treatment[16–18]

A. Acute alcohol

1. Produces ↑ pleasure and desire for alcohol

2. Depressant effects

a. Muscle relaxation

b. Sedation (e.g., sleepy)

c. ↓ mood (e.g., depression, suicide, homicide)

d. ↓ coordination

e. Impaired decision making

f. Difficulty concentrating

g. Slurred speech

5. Difficulty with memory recall and storage (i.e., blackouts)

6. ↓ respirations

7. Loss of consciousness (e.g., potentially deadly overdose)

B. Chronic heavy alcohol use

1. Pancreatitis (abdominal pain and pancreas inflammation)

2. Ulcers, gastrointestinal bleeding (e.g., stomach)

3. Weakened immune system with ↑ risk:

a. Pneumonia

b. Tuberculosis

c. HIV ~ AIDS

4. Cognitive dysfunction: Persistent memory lapses (Alzheimer's like)

5. Malnourishment and vitamin deficiencies (in some)

IV. AUD course: helps identify AUD and educate in Rx

A. Waxing and waning intensity[15]

1. Heavy drinking & problems

2. Stop drinking for weeks or months (happens to almost all with AUD)

3. Temporary control drinking for weeks or months

4. 20% long term remission without treatment

5. <10% able to drink without problems

Case e.g.: Sally (25 y/o single female)

1. Kicked out of apartment 2° ↑ noise incidents resulting in police call

2. Estranged from family due to failure to stay sober

B. With persistent use[15]

1. ↓life ~15 years

2. ↑ heart attacks/strokes

3. ↑ cancer GI/breast/head & neck, etc.

4. Liver disease (~80% do not have cirrhosis)[19]

C. Common temporary (but severe) substance induced conditions

1. Alcohol induced major depressions (sad, all day everyday for weeks)

a. Seen temporarily in 40% with AUD

b. Looks ID to major depressive disorder

c. ~10% commit suicide in this state

d. Begins during heavy drinking

e. Greatly improves or disappears within 1 month abstinence

f. Antidepressant meds not needed

2. Anxiety symptoms

a. Panic attacks in > 20% defined by 4+ criteria (2013 DSM-5)[14]:

1’ Palpitations

2’ Sweating

3’ Trembling

4’ Shortness of breath

5’ Choking sensation

6’ Chest pain

7’ Nausea

8’ Lightheadedness

9’ Feelings of unreality or detachment from oneself

10' Fear of losing control

11’ Fear of dying

12’ Numbness

13’ Chills

b. Panic attacks disappear within days to weeks following abstinence

3. Alcoholic psychosis

a. Paranoia and/or hearing voices in ~ 3%

b. Fear of being watched or followed

c. Believes are real

V. AUD treatment: withdrawal

A. < 50% AUD patients ever develop withdrawal[15,20]

B. Timecourse

1. Begins ~8h after ↓intake

2. Peaks day 2

3. Substantially reduced at day 4 or 5[15]

C. Most: mild/moderate:mild tremors/no confusion/no seizures

D. Rx: educate re symptom course & consider Rx meds

E. Depressant meds (e.g., Librium) to ↓ high pulse etc & tremor

VI. Chronic AUD treatment (combined talk therapy & meds)

A. Talk therapy

1. Cognitive behavioral therapy (CBT) to alter how think re AUD and related behaviors:[21]

a. Changing how person thinks

1’ Having AUD ≠ being a bad person

2’ Recognizing responsibility for change

3’ Most with AUD need additional help

4' Re-establish relationships with others

b. Changing how person behaves

1’ Avoids friends/family who drink heavily

2’ Not use alcohol for stress relief

3’ Avoid heavy drinking situations (e.g., bar)

2. Motivational interviewing:[21]

a. People change when ready not from lecture

b. Helps to change

c. Important: be empathic & respectful

B. Adjunct talk therapy: 12-step like (e.g., Alcoholics Anonymous)[15]

1. Support all day/all week

2. Can be a spiritual: “Higher Power” identified

a. Higher power not need be “God”

b. Some patients resist, but may still benefit

3. Steps include

a. Powerless over alcohol

b. Make amends with friends

c. Reach out to help others

4. Select AA mentor (i.e., sponsor)

C. FDA approved, evidence-based medications

1. Naltrexone (Trexan) [22–27]

a. Mechanism (opioid receptor blocker)

1’ ↓ cravings for EtOH

2’ If relapse, tend to drink less

b. Ideal patient

1’ Able to take medication consistently or visit clinic monthly for injection

2’ Can self-administer for non-injection

2. Acamprosate (Campral)[22–27]

a. Mechanism (NMDA receptor blocker)

1’ Stimulating via glutamate (↑anxiety)

2’ Helps patients remain abstinent longer (↓lingering withdrawal sx)

3’ Side effects:nausea and diarrhea

4’ Drug not metabolized in liver (so might be OK if have liver disease)

5' Common dose is 3x daily(↓s compliance)

b. Ideal patient

1’ Can tolerate side effects

2' Able to take 3x daily

3. Disulfiram (Antabuse)[22–27]

a. Mechanism (blocks acetaldehyde dehydrogenase)

1’ Drinking on disulfiram → nausea and vomiting

2’ Can’t Rx if patient has heart disease, diabetes, etc

3’ MUST warn to avoid EtOH in any form, i.e. common foods

4’ → fear of effect of drinking; so hard to know if better than placebo

5’ A barrier to effectiveness is that people stop taking it

6’ Better outcomes with supervised dosing[28]

b. Ideal patient

1’ Abstinent for 12 hours

2’ Family member can administer

3’ Toxic possible side effects can be closely monitored for

4’ Contraindicated with psychosis[29]

D. Other medication under evaluation: Topiramate (Topomax) [22–27]

1. Mechanisms (anti-convulsant)

a. Many potential side effects

1’ Weight loss

2’ Cognition

3’ Acute closure glaucoma

4’ Kidney stones

b. Gradual dose titration to minimize side effects

c. Need to dose adjust if there is renal impairment

2. Ideal patients

a. Heavy drinker

b. Intolerant/have not responded to 1st line

c. No contraindications

E. Case example: Sally’s Treatment

1. CBT and MI

2. Alcoholics Anonymous

3. Naltrexone

VIII. Conclusions

A. Alcohol use is prevalent, under-recognized, undertreated, and has many complications

B. Alcohol use can be treated effectively with therapy and medications

C. Treatment should be personalized

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