HARM REDUCTION STRATEGIES FOR CANNABIS USE:
HOW CAN I MINIMIZE THE IMPACT OF CANNABIS USE IN MY PATIENTS?

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GENERAL DISCLOSURES

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SPEAKER DISCLOSURES

None
OBJECTIVES

1. GENERAL CANNABIS INFORMATION
2. PSYCHIATRIC HARMS
3. PHYSICAL HARMS
4. HARM REDUCTION STRATEGIES
5. TREATMENT
CASE EXAMPLES

• GH – 19yo M, decreased school/work performance
• AL – 54yo M, cannabinoid hyperemesis
• DC – 27yo M, hospitalized for acute psychosis with auditory hallucinations, paranoia, and aggression
• AE – 35yo M, bipolar I disorder with psychosis
CANNABIS 101

- Cannabinoid receptors
  - CB1 – central nervous system
  - CB2 – immune system

- Endogenous cannabinoids
  - Anandamide
  - 2-arachidonyl glycerol (2-AG)

- Cannabinoids – > 100
  - Tetrahydrocannabinol (Δ9-THC)
    - CB1 agonist
    - Psychoactive – altered mood, cognition
  - Cannabidiol (CBD)
    - Indirect CB1 and CB2 antagonist
    - Immunologic and anti-inflammatory effects
    - Antipsychotic?
THC CONCENTRATION

CBD CONCENTRATION

CANNABIS STRAINS

SATIVA
People feel more energetic
Hallucinogenic, cerebral effect
Preferred for daytime use

INDICA
Has a relaxing effect
You experience a “body buzz”
Preferred for nighttime use
SYNYTHERIC CANNABIS
METHODS OF USE

• Smoking
  – Pipe, bong, blunt, joint, vaporizer
  – Often mixed with tobacco

• Edibles
  – Delayed effects

• Concentrates
  – Butane hash oil, dabs, wax, shatter
  – Up to 80-90% THC
PERCEIVED RISK AND USE OF MJ

DSM V CONSEQUENCES OF USE

• CANNABIS USE DISORDER
  – CUDIT-R – 8 Question Screener
  – 8-9% cannabis users will develop use disorder (Sabioni and Le Foll 2018)
  – Increased risk among users who initiate early and use daily

• INTOXICATION

• WITHDRAWAL
ACUTE INTOXICATION

- Transient increase in anxiety/panic symptoms and paranoia/psychosis
  - Especially synthetic MJ or high THC content (Fattore 2016)

- ED visits
  - 5x higher prevalence of mental health diagnoses in cannabis-related ED visits in Colorado from 2012-2014 (Hall et al 2018)

- Motor Vehicle Accidents
  - 1.36 x increase risk in MVA (Rogeberg et al 2016)
  - No difference in MVA fatalities in WA and CO after legalization (Aydellote et al 2017)
MENTAL HEALTH CONSEQUENCES

• Very generally, there tends to be an acute improvement in symptoms, but chronic use can lead to worsening symptoms and outcomes

• PTSD
  – Possible worsening of PTSD symptoms (O’Neil et al 2017)

• Anxiety
  – Higher rates of cannabis use in individuals with anxiety disorders (Zammit et al 2008)

• Depression
  – Higher levels of depressive symptoms in cannabis users (Moore et al 2007)

• Bipolar Disorder
  – Lower rates of relapse/remission (Aguado et al 2015)
COGNITIVE CONSEQUENCES

• “AMOTIVATIONAL SYNDROME”
  – Decreased school and work performance, less interest in activities (Palamar 2014)

• COGNITION
  – Acute and chronic impairment in learning, attention, and memory (Broyd et al 2016)
  – Impaired educational attainment – poorer grades, increased dropout rates (Volkow 2014)
  – 6 point decline in IQ among heavy, early users (Meier et al 2012)
PSYCHOSIS

• Cannabis increases the risk of psychosis
  – 1.9X for any use, 3.9X for heavy use (Marconi et al 2016)
• Daily, High Potency, Early Onset Use (<16YO)
  – 5X increased risk of first episode psychosis (Di Forti 2015)
  – Onset of first episode psychosis 6yrs earlier (Di Forti 2014)
• Family or personal history of psychosis increases the risk associated with cannabis (Verdoux et al 2003)
• Caveats
  – At risk individuals may be more likely to use cannabis
  – Cannabidiol may have antipsychotic effects (McGuire et al AJP 2017)
PHYSICAL CONSEQUENCES

• RESPIRATORY SYMPTOMS
  – Chronic bronchitis (Taylor et al. Addiction 2002)
  – Cannabis + Tobacco → Synergistic respiratory harm (Tan et al. CMAJ 2009)

• LUNG CANCER
  – Unclear but probably not an increased risk unless combining with tobacco (Volkow 2014)

• CANNABINOID HYPEREMESIS
  – Cyclic vomiting associated with heavy use
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HARM REDUCTION STRATEGIES

• Specific populations at high risk
  – Adolescents
  – Mental health diagnoses
  – Family history of psychosis

• Decrease overall use
  – Both frequency and amount consumed
  – Limiting time of day
  – Limit amount purchased at a time

• Decrease THC potency
  – No synthetics
  – No concentrates
HARM REDUCTION STRATEGIES

• Protect lung health
  – Do not mix cannabis with tobacco
  – Do not use a cigarette filter
  – Do not inhale too deeply or hold smoke in your lungs
  – Avoid using bong/water pipe
  – Vaporizers are probably safer than smoking

• Public health
  – Do not mix with alcohol or other drugs
  – Do not drive while intoxicated

Winstock et al. 2010
Lau et al. 2015
LEGALIZATION AS HARM REDUCTION

• Less legal problems for individuals
• Increased knowledge of product purity and potency
• Decreases use of synthetics
• Decreases cannabis consumption via smoking and increases ingestion
• But increased use of concentrates

Lynskey et al. 2016
TREATMENT

- Psychosocial interventions
  - Contingency Management
  - Motivational Enhancement Therapy
  - Cognitive Behavioral Therapy

- Pharmacology
  - Gabapentin decreased cannabis use and withdrawal symptoms (Mason et al 2012)
  - N-Acetyl cysteine decreased cannabis use and cravings in adolescents but not replicated in larger, adult study (Gray et al 2017)
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