Medical Cannabis: Current Considerations and Implications for Pharmacists

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Aurora, CO
Target Audience: Pharmacists

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Activity Type: Application-based
Disclosure

• All planners, presenters, and reviewers of this session report no financial relationships relevant to this activity.
Objectives

• Evaluate the current regulatory status of cannabis in the United States.
• Evaluate health system policies and procedures for cannabis use within the current legal landscape.
• Examine the clinical pharmacology of cannabis and its active components.
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Is cannabis legal to use in the United States for medical purposes?

A. Yes, I am certain
B. No, I am certain
C. I don’t think so, but I am not certain
D. I think so, but I am not certain
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Regulatory Status of Cannabis

- Cannabis/Marijuana is a Schedule I controlled substance under Federal Law

  (1) Schedule I.—

  (A) The drug or other substance has a high potential for abuse.
  (B) The drug or other substance has no currently accepted medical use in treatment in the United States.
  (C) There is a lack of accepted safety for use of the drug or other substance under medical supervision.

- Schedule I controlled substances are illegal to dispense and prescribe.
- End of story, right?

State Laws of Cannabis

• 46 States have some legal support for cannabis
  – Accounting for 95% US population
• States without cannabis support
  – ID, TX, SD, KA
• 8 States + DC, widespread recreational use legal
  – AK, CA, WA, OR, NV, MA, ME, + DC
• Local jurisdictions may be involved with permitting

Yes End of Story, Well, Kinda

- Enforcement discretion is key to understanding
- Practice of medicine and pharmacy are state issues
  - States license practitioners within their scope of practice
  - Maintain regulatory oversight through administrative boards
- Greater than 99% of marijuana related arrests and convictions are state and local crimes involving possession
- Federal Agencies and laws do regulate cannabis

Have you parked illegally or exceeded the speed limit in the last 30 days?

A. Yes, I have
B. No, I have not
C. What does Standing mean anyway
D. I do not drive a car

Did you get a ticket? That is enforcement discretion!
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Cannabis is Illegal in the United States....BUT

- The Federal Government has established mechanisms to specifically NOT ENFORCE the Controlled Substance Act in states where it is legal and “individuals are in clear and unambiguous compliance with existing state law.”
  - Lack of enforcement budget specifically written into Federal Appropriations Bill (Rohrabacher-Blumenauer Amendment)\(^1,2\)
  - Regulations permit banks to deal with money associated with marijuana businesses\(^3\)

Nevertheless...Remember Cannabis is Illegal

• Medicare and Medicaid funding at risk
  – Risk of losing federal funding

• Universities must comply with the Drug Free Schools and Community Act and Title IV Higher Education Act
  – Risks of losing student financial aids programs such as grants, loans, work-study

• Patient Use is complicated....
  – Employment drug tests, family custody and divorce issues
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Pharmacy and Cannabis

• The profession lacks a uniform impression on medical cannabis
• Pharmacists “dispense” medical marijuana in 3 states (CT, MN, NY) through medical dispensaries...NOT THE PHARMACY
  – Louisiana approved (8/20/17), not yet implemented a framework for pharmacies to dispense under a specialty license
• Remember: pharmacies, not pharmacists are registered with DEA
• Pharmacists maintain constitutional rights to advise and counsel patients on marijuana and are licensed under State Law
• DEA, State Legislature, and Boards regulate pharmacy practice
Prospective Research Involving Medical Cannabis

The Chief Neurologist in your health institution approaches you, the clinical pharmacist, to study the role of medical cannabis in refractory-pediatric seizure disorders.

• Is this permissible?
  – Research involving medical cannabis is a sophisticated interplay of regulations and agencies, but may be permissible

• Clinicaltrials.gov has a collection of active research projects
  – 123 recruiting studies for CANNABIS (as of Aug 27, 2017)

A pharmacy researcher seeks to conduct a self-funded study comparing cannabis to standard of practice for pediatric epilepsy. Which of the following is **NOT** required?

A. DEA permission
B. IND
C. State Board of Pharmacy written authorization
D. Use of a standardized, government approved cannabis source product
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Research Requirements

• US Government provides bulk marijuana to researchers through National Institute of Drug Abuse (NIDA) Drug Supply Program (DSP)
  – Single license for cultivation University of Mississippi
  – DEA policy to accept applications to register new growers

• Local Intuitional Review Board Approval necessary with Data Safety and Monitoring Plan

• NIH Review for NIH Funded Projects

• FDA-IND Process for Non-NIH Funded Human Subject Projects

• DEA Registrations required

Medications Brought from Home into Hospital Program in my Institution for Medical Cannabis

Patient is admitted for cardiac dysrhythmia and asks to have his vaporizer available to sleep.

- Need institutional support
  - BOD, Medical Staff, P&T Committee, Risk Management
  - Joint Commission Medication Management: MM.03.01.05

- Need for strict and enforceable policies and procedures, consistent application

- Address issues of adulteration (purity), misbranding (labeling), dosing, and security

- Understand risks involved


What are the risks/consequences to using medical cannabis in my health system?

• Approval from what authority?
• Understanding of what is at risk
• Patient Safety - issues with dosing and purity
• Risk of administrative action from your Board of Pharmacy
• Malpractice claims for injury
• Cost of legal defense
• Health system accreditation and reputation
• Qualification for CMS funding
Case of Cannabis as treatment for Weight Loss

Patient Joe comes to your outpatient practice with weight loss and loss of appetite. The patient is under active treatment for prostate cancer.

- What factors would permit you to advise Joe to visit a recommending physician for a recommendation for medical cannabis and then visit a local dispensary in town for an edible option

• Joe returns saying he has been smoking marijuana for 3 months now, has gained back his weight, has restored appetite, and is feeling great.....

• 3 months later Joe is now in full remission for prostate cancer but his PET-CT shows a suspicious mass on his left lung
Under what conditions would the pharmacist be liable for professional malpractice in the case of Joe’s lung cancer?

A. If the original physician did not recommend cannabis, so Joe recommended a second physician

B. If the dispensary advised Joe to smoke/vaporize the cannabis rather than consume/eat it orally

C. If the counseled Joe to smoke the cannabis

D. If Joe’s lung cancer is directly attributable to the pharmacist’s counseling
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ABCD’s of Malpractice

• A legal duty
• Breach of that duty
• Causation
  – Legal and proximate
• Damages
  – Actual injury

• Professional Standard of Care
  – Expert testimony
  – Special considerations
• Assumption of risk
• Role of Malpractice Insurance

Pharmacist Standard of Practice

ACCP Clinical Practice Standards

• Process of Care
  – Patient Assessment
  – Evaluation of Medication Therapy
  – Development and implementation of a plan of care
  – Follow-up Evaluation and Medication Monitoring
• Documentation

Legal Standard of Practice

• Clerical Accuracy vs. Skill and Knowledge
  – Education and Counseling
    – Alternative therapies and risks
  – Drug-Drug Interactions
  – Drug-Disease Interactions
  – Product Selection
  – Duty to Warn

Case of Cannabis and Breast Feeding

Patient Jane comes to your outpatient practice to pick up her new prescription for an anti-depressant. Jane recently delivered a healthy baby boy and is struggling with breast feeding. Upon counseling, you learn that she is using cannabis to calm her nerves and reduce the pain of her cesarean incision.

• What factors should guide your management of care?
Key Takeaways

• Although cannabis may be “legal” in your local practice, remember medical cannabis remains a Schedule I Controlled Substance
• The cannabis landscape is currently shifting and it is imperative you stay current on the issue
  – Numerous bills are in progress
• If you choose to be pioneering, understand the risks and use legal counsel
  – Maintain high standard of practice with medical cannabis, understand your legal duty to care
• Consider the high probability your patients are using medical cannabis
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A patient is using cannabis to relieve severe pain refractory to FDA-approved medications. Which of the following pairs identifies the endocannabinoid and receptor that is activated?

A. 2-arachidonoyl-glycerol and CB2 receptor
B. N-arachidonoyl-dopamine and GPR55 receptor
C. Anandamide and CB1 receptor
D. Virodhamine and PPAR receptor
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Endogenous Cannabinoid System

- Endocannabinoids and their receptors found throughout body
- Cannabinoid system performs different tasks - goal is always **homeostasis**
- **Endocannabinoids** are eicosanoids made naturally by the body and stimulate cannabinoid receptors
  - Anandamide
  - 2-arachidonoylglycerol (2-AG)
- When **cannabinoid receptors** are stimulated, variety of physiologic processes
  - **CB1** receptors: nervous system, connective tissues, gonads, glands, organs
  - **CB2** receptors: immune system and associated structures

## Functional Effects of Anandamide at CB1 and CB2 Receptors

<table>
<thead>
<tr>
<th>Structure</th>
<th>Anandamide regulates</th>
<th>Resultant effect</th>
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</thead>
<tbody>
<tr>
<td>Spinal cord</td>
<td>Inhibit glutamate &amp; info transfer between body &amp; brain</td>
<td>Decreased pain sensitivity</td>
</tr>
<tr>
<td>Parasympathetic system</td>
<td>Inhibit Ach release, HR regulation, urination regulation</td>
<td>HR stimulation, sometimes inhibits urination</td>
</tr>
<tr>
<td>Sympathetic system</td>
<td>Inhibit NE release, HR regulation, blood vessel constriction</td>
<td>Delayed reduction in HR and blood pressure</td>
</tr>
<tr>
<td>Neuronal cells</td>
<td>Inhibition GLU-induced excitotoxicity</td>
<td>Neuroprotective effect - prevent cell injury</td>
</tr>
<tr>
<td>Adipose tissue</td>
<td>Stimulates lipogenesis</td>
<td>Increased adiposity, insulin resistance</td>
</tr>
<tr>
<td>Reproductive tissue</td>
<td>Reduces testosterone, luteinizing hormone</td>
<td>Reduced fertility, altered menstrual cycle</td>
</tr>
<tr>
<td>Skin</td>
<td>Reduces histamine</td>
<td>Anti-pruritic effect</td>
</tr>
<tr>
<td>General</td>
<td>Role in relaxing, eating, sleeping, forgetting, protecting</td>
<td>Provide relief from stress, reduction of injury</td>
</tr>
<tr>
<td>General</td>
<td>Inhibits immune B lymphocytes, natural killer cells</td>
<td>Anti-inflammatory activity</td>
</tr>
</tbody>
</table>

Anandamide and Δ9-tetrahydrocannabinol (THC)

www.drugabuse.gov
Chemical Constituents of Cannabis

- Cannabinoids (100+)
  - $\Delta^9$-tetrahydrocannabinol - THC
  - Cannabidiol – CBD
  - Cannabinol - CBN
- Terpenes/Terpenoids
- Flavonoids
- Sterols
- Thiols
- Phenols
- Lipids/waxes
- Fibrous material

Photo: https://www.drugabuse.gov/publications/drugfacts/marijuana
Endocannabinoid System and Exogenous Cannabis

What happens when there is potential endocannabinoid deficiency, dysregulation, destabilization, or decreased binding?

GABA: gamma-aminobutyric acid

Photo: https://www.drugabuse.gov/news-events/nida-notes/2017/03/endocannabinoid-regulates-cocaine-reward

Marijuana Effects on the Brain

- **Cerebellum**: Motor control and coordination
- **Hypothalamus**: Appetite, hormone levels, body temp, memory
- **Prefrontal cortex**: Judgement and reward
- **Neocortex**: Cognitive function and integration of sensory information

### Brain Regions
- **Cerebellum**
  - Motor control and coordination
- **Neocortex**
  - Cognitive function and integration of sensory information
- **Hypothalamus**
  - Appetite, hormone levels, body temp, memory
- **Prefrontal cortex**
  - Judgement and reward

### Functional Areas
- **Movement**
- **Sensations**
- **Vision**
- **Reward**
- **Memory**
- **Coordination**

Summary: Clinical Pharmacology

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A 2-year old girl has drug-resistant epilepsy. Cannabis products rich in which of the following cannabinoids appear to reduce seizures in children?

A. Tetrahydrocannabinol (THC)
B. Cannabidiol (CBD)
C. Cannabichromene (CBC)
D. Cannabinol (CBN)
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Pediatric Epilepsy

• Open-label trial of oral cannabidiol
• 214 patients 1-30 years with severe, intractable, childhood-onset, treatment-resistant epilepsy
• Oral cannabidiol 2-5 mg/kg per day, up-titrated until intolerance or to maximum dose of 25-50 mg/kg per day
• Objectives:
  – Establish the safety and tolerability of cannabidiol
    – 162 patients with 12 weeks of treatment included in analyses
  – Establish efficacy as median percentage change in the mean monthly frequency of motor seizures at 12 weeks
    – 137 patients with 12 weeks of treatment included in analyses

Results: Safety and Tolerability

- Adverse events reported in 128 (79%) of 162 patients
  - Somnolence (25%)
  - Decreased appetite (19%)
  - Diarrhea (19%)
  - Fatigue (13%)
  - Convulsion (11%)
- Five (3%) patients discontinued treatment
- Serious adverse events were reported in 48 (30%) patients
  - 20 (12%) patients had severe adverse events possibly related to cannabidiol use; the most common was status epilepticus (n=9 [6%]).

Results: Efficacy

Efficacy of Oral Cannabidiol

-36.5%

Baseline  Treatment for 12 weeks

Pediatric Epilepsy

- Retrospective chart review
- 119 patients age 30 days-18 years
- 41% relocated to Colorado
- Parents of 58 patients (49%) reported at least some improvement in seizures.
- 24% considered to be responders to oral cannabis extract treatment, which was defined as a > 50% reduction in seizure burden

Pediatric Epilepsy: Israeli Experience

- Retrospective review of 74 patients (age 1-18 years) with intractable epilepsy using CBD-enriched medical cannabis
- Resistant to >7 antiepileptic drugs
- Treated with CBD-enriched product for at least 3 months
  - CBD:THC – 20:1
  - CBD dose ranged from 1-20 mg/kg/day
- Seizure frequency assessed by parental report

Results: Efficacy

Seizure Reduction with Cannabis Use

- 0% reduction
- <25% reduction
- 25-50% reduction
- 50-75% reduction
- >75% reduction

Total: n=74 patients

Results: Adverse Effects

• Reported in 34/74 patients
  – Seizure aggravation: 13 (18%)
  – Somnolence/fatigue: 16 (22%)
  – Gastrointestinal problems and irritability: 5 (7%)

Note: side effects led to withdrawal in 5 (7%) patients

Limitations and Conclusion of Trial

- Lack of a control group
- No consistent rate of dosage titration
- Reliance on parental report for seizure frequency
- Short duration of the study
- Lack of long-term outcome
- No EEG results and no measurement of other drug levels

Results of this multicenter study on CBD treatment for intractable epilepsy in a population of children and adolescents are highly promising.

Inhaled Cannabis for Neuropathic Pain: Meta-Analysis of Individual Data

- Synthesizes the individual participants' original data obtained from the studies' principal investigators
- Five randomized controlled trials evaluating inhaled cannabis
- Compared proportion of patients experiencing >30% clinical improvement in chronic neuropathic pain assessed with a continuous patient-reported instrument (e.g., visual analog scale) at baseline and after inhaled cannabis

Results: Efficacy

• 178 patients with 405 observed responses
• Estimated OR for >30% ↓ in pain score: 3.22 (1.59-7.24)
• Number needed to treat: 5.55 (3.35-13.7)

Note: gabapentin NNT 5.9 (4.6-8.3) for diabetic neuropathy

Results: Adverse Effects

• Serious Adverse Effects
  – Placebo: 1 (psychosis)
  – Cannabis: 2 (hypertension, increased pain)

• Mild adverse effects
  – Anxiety, disorientation, difficulty concentrating, headache, dry eyes, burning sensation, dizziness, and numbness
  – Psychoactive effects (such as feeling “high”) were statistically significantly associated with treatment allocation in 2 studies and increased in frequency with increasing dose

Limitations and Conclusion of Trial

• Ineffective participant blinding
• Placebo effects likely
• Multiple potential causes of neuropathy
• Small number of studies and participants
• Difficult to estimate bioavailable cannabis
• Short-term data only (up to 2 weeks)

Inhaled cannabis results in short-term reductions in chronic neuropathic pain for 1 in every 5 or 6 patients treated.

Conclusive or substantial evidence that cannabis or cannabinoids are effective:

– for treatment of chronic pain in adults (cannabis)
– for improving patient-reported multiple sclerosis (MS) spasticity symptoms, but limited evidence for clinician-measured spasticity (oral cannabinoids)
– As antiemetics in the treatment of chemotherapy-induced nausea and vomiting (oral cannabinoids)
National Academies: Health Effects of Cannabis

**Moderate evidence** that cannabinoids, primarily nabiximols, are **effective**:

- to improve short-term sleep outcomes in patients with sleep disturbance associated with obstructive sleep apnea, fibromyalgia, chronic pain, and multiple sclerosis.

National Academies: Health Effects of Cannabis

- **Limited evidence** that cannabis or oral cannabinoids are *effective* for...
  - increasing appetite and decreasing weight loss with HIV/AIDS (cannabis, oral cannabinoids)
  - improving symptoms of Tourette syndrome (THC capsules)
  - improving anxiety symptoms in individuals with social anxiety (cannabidiol)
  - improving symptoms of posttraumatic stress disorder (nabilone)
  - improving outcomes (i.e., mortality, disability) after traumatic brain injury or intracranial hemorrhage

- **Limited evidence** that cannabis or oral cannabinoids are *ineffective* for...
  - improving symptoms of dementia (cannabinoids)
  - improving intraocular pressure associated with glaucoma (cannabinoids)
  - reducing depressive symptoms in chronic pain or MS (nabiximols, dronabinol, nabilone)

No or insufficient evidence to support or refute that cannabinoids are effective for...

- cancer-associated anorexia cachexia syndrome and anorexia nervosa
- cancers, including glioma
- irritable bowel syndrome
- epilepsy
- spasticity in patients with paralysis due to spinal cord injury
- chorea and certain neuropsychiatric symptoms associated with Huntington’s disease
- symptoms associated with amyotrophic lateral sclerosis (Lou Gehrig’s disease)
- Parkinson’s disease or levodopa-induced dyskinesia
- dystonia
- treatment for mental health outcomes in schizophrenia or schizophreniform psychosis
- achieving abstinence in the use of addictive substances

Cannabis may have a role in drug-resistant pediatric epilepsy and chronic neuropathic pain. Adverse effects can occur, so benefits and risks should be weighed for individual patients while considering patient safety and public health concerns.
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Patient Safety Issues

• Unintentional exposure
• Adverse effects
• Drug interactions
• Accuracy of education provided
• Product-related
  – Route of administration
  – Consistency (or lack thereof)
  – Quality and purity
  – Packaging
  – Labeling
  – Testing – content and contaminants

2014-2015 APhA Policy Committee Report: Role of the Pharmacist in the Care of Patients Using Cannabis.
Unintentional Exposure in Children: Colorado

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Kristi Hofer, 10/31/2017
Adverse Effects

- Tachycardia
- Palpitations
- Hypertension

- Coughing
- Wheezing
- Sputum production

- Lethargy, Sedation, Slowed Reaction Time
- Psychological dysfunction: impaired coordination, impaired memory, altered sense of time, lack of focus, hallucinations, paranoia
- Visual disturbances, mood changes

Cannabis Adverse Effects

• Effects of short-term use
  ▪ Impaired short-term memory
  ▪ Impaired motor coordination
  ▪ Altered judgment
  ▪ Motor vehicle accidents (↑2x)
  ▪ Paranoia and psychosis (high doses)

• Effects of long-term use
  ▪ Addiction (9% overall)
  ▪ Altered brain development*
  ▪ Cognitive impairment (with lower IQ)*
  ▪ Diminished life satisfaction and achievement*
  ▪ Poor educational outcome
  ▪ Symptoms of chronic bronchitis
  ▪ Increased risk of chronic psychosis disorders
  *Effect is strongly associated with initial marijuana use early in adolescence

Cannabis Drug Interactions

- Chlorpromazine
- Clobazam
- Clozapine
- CNS depressants
- Disulfiram
- Hexobarbital
- Hydrocortisone
- Ketoconazole
- Protease inhibitors (indinavir, nelfinavir)
- MAO inhibitors
- Phenytoin
- Theophylline
- Tricyclic antidepressants
- Warfarin

*Note: significant synergistic interaction found between CBD and levetiracetam. Significant antagonistic interactions noted with CBD + clobazam and CBD + carbamazepine. (American Epilepsy Society Annual Meeting December 2015)

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<tr>
<td>Chlorpromazine</td>
<td>Marijuana smoking increased clearance of chlorpromazine</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td>P</td>
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<tr>
<td>Clobazam</td>
<td>Increased clobazam levels (60-80% higher) with CBD use</td>
<td>N</td>
<td></td>
<td>Y</td>
<td>P</td>
<td></td>
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<tr>
<td>Clozapine</td>
<td>Possible increased clozapine metabolism by marijuana induction of CYP1A2</td>
<td>N</td>
<td></td>
<td></td>
<td>P (with marijuana cessation)</td>
<td>P (with marijuana continuation)</td>
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Y=yes; N=no; P=possible

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<td>CNS Depressants (e.g., alcohol, benzodiazepines)</td>
<td>Additive drowsiness and CNS depression</td>
<td>N</td>
<td></td>
<td>Y</td>
<td></td>
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<tr>
<td>Disulfiram</td>
<td>Possible hypomanic / psychotic reaction</td>
<td>N</td>
<td></td>
<td>P</td>
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<td></td>
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<tr>
<td>Hexobarbital</td>
<td>Enhanced CNS depressant effect. CBD decreased metabolism but did not have effect.</td>
<td>N</td>
<td></td>
<td>Y</td>
<td></td>
<td>P</td>
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<tr>
<td>Hydrocortisone</td>
<td>THC increased serum cortisol, but effect blunted in frequent users</td>
<td>N</td>
<td></td>
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<td>P</td>
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<tbody>
<tr>
<td>Ketoconazole</td>
<td>Peak THC concentration increased by 27%</td>
<td>N</td>
<td>P</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAO inhibitors</td>
<td>Possible enhancement of orthostatic hypotension</td>
<td>N</td>
<td></td>
<td></td>
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<tr>
<td>Phenytoin</td>
<td>May enhance CNS depressant effect. Possible increased phenytoin metabolism by marijuana induction.</td>
<td>N</td>
<td></td>
<td>Y</td>
<td>P (with marijuana cessation)</td>
<td>P (with marijuana continuation)</td>
</tr>
<tr>
<td>Protease inhibitors</td>
<td>Significant decrease in peak concentration of indinavir and nelfinavir.</td>
<td>N</td>
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<td>P</td>
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<tr>
<td>Theophylline</td>
<td>Smoked marijuana lowers theophylline concentrations</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td>P</td>
</tr>
<tr>
<td>Tricyclic antidepressants</td>
<td>May cause transient cognitive changes, delirium, or tachycardia</td>
<td>N</td>
<td>P</td>
<td></td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>Warfarin</td>
<td>Possible enhanced anticoagulant effect</td>
<td>N</td>
<td></td>
<td></td>
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<td>P</td>
</tr>
</tbody>
</table>

Y=yes; N=no; P=possible
## Cytochrome P450-Mediated Drug Interactions

<table>
<thead>
<tr>
<th>Cannabinoid</th>
<th>CYP-450 2C9</th>
<th>CYP-450 2C19</th>
<th>CYP-450 3A4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ9-THC</td>
<td>*</td>
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<td>*</td>
</tr>
<tr>
<td>Δ8-THC</td>
<td>*</td>
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<tr>
<td>CBD</td>
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<tr>
<td>CBN</td>
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</tbody>
</table>

*Drug Metab Rev. 2014;46(1):86–95*
Patient Case

- 62 yo female with long-standing diabetes and severe neuropathic pain; other conditions include hypertension, dyslipidemia, and arthritis
- For neuropathic pain and arthritis, she has tried seven different FDA-approved or OTC medications; currently taking acetaminophen, oxycodone and pregabalin
- Started cannabis about 3 months ago
  - Vaporizes THC:CBD (1:1) twice daily
- Reduced oxycodone dose by 30% since starting cannabis; has continued acetaminophen, pregabalin and cannabis

What counseling should be provided to this patient?
Counseling Strategies: Medical Cannabis

• Reason for use
  – “Patients use cannabis for many different conditions. For what condition(s) are you using cannabis?”

• Cannabis use (formulation, dose, frequency)
  – “By what method(s) do you use cannabis?”
  – “What strain and/or cannabinoid concentrations are you using?”
  – “How often are you using cannabis?”

• Concurrent drug use
  – “What other medications are you taking at this time?”

Counseling Strategies: Medical Cannabis

• What to expect
  – “What benefits did your provider tell you to expect from using cannabis?”
  – “What adverse effects did your provider tell you to expect?”

• When to seek further medical attention/follow-up
  – Bothersome psychoactive effects
  – Cannabinoid hyperemesis syndrome (cyclic vomiting)
  – Contact pharmacist or prescriber if any adverse effect becomes too bothersome or if any questions about marijuana use

Key Takeaways

• Homeostatic effects of the endogenous endocannabinoid system can be provided by exogenous cannabis with applications to some medical conditions.

• Clinical data support the use of cannabis for treating drug-resistant pediatric epilepsy and chronic neuropathic pain, although the potential for adverse effects should be considered in recommending use for an individual.

• Pharmacists should be aware of potential drug interactions and other patient safety issues associated with cannabis and communicate with patients effectively using open-ended questions and language that is nonjudgmental.
Questions?
THANK YOU!

https://teens.drugabuse.gov/drug-facts/marijuana

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