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Medical Cannabis Program

Cannabis N*ugs*O*f*W*isdom*

Gary J. French, MD
Medical Director
Elizabeth Bisio, MHP, CHES
Health Educator

Disclaimer

- The opinions shared during this meeting do not necessarily reflect the position of the Medical Cannabis Program.
- The Medical Cannabis Program does not endorse any specific product, producer, or vendor.

Review telemedicine

- Audio and Visual
  - Phone call?
  - Texting?

- HIPAA Complaint Platform
  - Facetime?
  - Skype? (free)
  - Tik Tok?
  - WhatsApp?
  - Facebook Messenger (video chat)?

What age is considered elderly?

- People over 50 can join the AARP.
- The Older Americans Act (OAA) provides services to people as young as 55.[1]
- When defining "Vulnerable Older Adults" the CDC uses a cutoff of 60.[2]
- AMC provides movie ticket discounts to a person age "60+"
- Traditionally elderly are considered those persons aged 65 or older.[3]

Are there a lot of elderly?[4]

- Globally, the pace of population aging is much faster than in the past.
  - In 2020, the number of people aged 60 years and older outnumbered children younger than 5 years.
  - World Health Organization (WHO) predicts that between 2015 and 2050, the proportion of the world's population over 60 years of age will double from 12% to 22%.
  - Between 2020 and 2050, the number of persons aged 80 years or older is expected to triple and reach 426 million.

Are there a lot of elderly?

- In the United States, we see similar trends.
  - By 2030, about 20% of the US population, (72 million people) will be over the age of 65 years.[5]
  - And by 2035, people aged 65 and over are expected to outnumber children under the age of 18.[6]

Why is this segment growing?[7]

- Pharmacotherapy has allowed people to live longer lives, but…
- Older individuals often require complex medication regimens just to manage their chronic health conditions, yet…
- Due to their advanced age, they are at-risk of age-associated physiological, functional, and cognitive changes that increase the risk of adverse drug effects, all while…
- They continue to develop more chronic conditions requiring more complex pharmacotherapy.

What can help?

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Why?

- Alleviate the symptoms of chronic conditions
- Reduce medication burden
- Safer than other options
- Cheaper than other options

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Why do older patients consider using medical cannabis?[9]

- Symptoms may not be adequately controlled by standard drug treatments.
  - Suboptimal effects
  - Adverse effects
- Cannabis is a plant product and is natural and less harmful than medications.
  - Safe for kids
  - Appeal of an elixir over a pill
- Advised by a family member to try it.
- Coerced into obtaining cannabis that is then accessed by someone else.
  - Unlikely given recreational access
- Having a medical cannabis card legitimizes my use.

Do the elderly need additional education?

- Researchers conducted a trend analysis of cannabis-related ED visits from all acute care hospitals in California and found that while people ≥65 up were involved in only 366 cannabis-related ER visits in 2005, that number skyrocketed to 12,167 in 2019. The relative increase was **1,808%.**[9]
- The potency of cannabis today far exceeds what many older patients may have been used to.

Do the elderly need additional attention?[10]

- To date, the majority of cannabinoid research has focused upon a healthy younger population.
- Advancing age is associated with the accumulation of medical comorbidities.
- Older persons have already become an important group of cannabis users.
- **Greater awareness** amongst providers of the potential indications and hazards of cannabinoids in the older patient **is therefore imperative.**

Unique Challenges to Cannabis Use Created by the Aging Process

- Polypharmacy
- Pharmacokinetic Changes
- Nervous System Impairment
  - Psychomotor
  - Cognitive
  - Mental Health
- Cardiovascular

Polypharmacy

- Taking more medications presents a greater risk of drug interactions.
- Especially drugs that influence the hepatic CYP family of enzymes.

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Clinically Relevant Interactions[11]

Clinical Relevance of Drug interactions with Cannabis		
Drug	**Mechanism**	**Effects**
Level 1 Interaction: Very High Risk		
Warfarin	CYP2C9 Inhibition	Increased INR with concomitant use of CBD resulting in GI bleeding. Monitor INR closely for warfarin adjustments. Avoid combination if possible.
Level 2 Interaction: High Risk		
Buprenorphine	CYP3A4 Inhibition	Increased concentrations of buprenorphine. Avoid combination if possible or adjust buprenorphine doses.[1]
Tacrolimus	CYP3A4 Inhibition	Increased tacrolimus concentrations. Avoid combination if possible or adjust tacrolimus doses.[1]
Level 3 Interaction: Medium Risk		
Clozapine	CYP3A4 and 2C19 Induction	Decreased clozapine concentrations. Consider dose adjustment.[1]
Methadone	CYP3A4 and 2C19 Inhibition	Increased methadone levels resulting in increased somnolence. Consider dose adjustment.[1]
Clobazam	CYP2C19 Inhibition	Increased clobazam concentrations. Consider dose adjustment.[1]
Chlorpromazine	Possible CYP1A2 Induction	Decreased chlorpromazine concentrations. Consider dose adjustment.[1]
Hexobarbital	Possible CYP3A4 Inhibition	Increased hexobarbital concentrations. Consider dose adjustment.[1]
Ketoconazole	CYP3A4 Inhibition	Increased concentrations of THC/CBD
Rifampicin	CYP3A4 Induction	Decreased concentrations of THC/CBD
Stiripentol	CYP2C19 Induction	Increased concentrations of stiripentol. Consider dose adjustment.[1]
Theophylline	CYP1A2 Induction	Decreased theophylline concentration. Consider dose adjustment.[1]
Valproate	Possible UGT1A9 and UGTB7 Inhibition	Increased LFTs. Assess liver function before taking in combination.
Level 5 Interaction: Co-administration with CBD does not lead to significant changes in drug levels (rufinamide, topiramate, zonisamide, nelfinavir)		

Levels of clinical relevance of drug interactions were determined according to the combination of severity and probability of occurrence.
[1]Monitor plasma levels if possible.

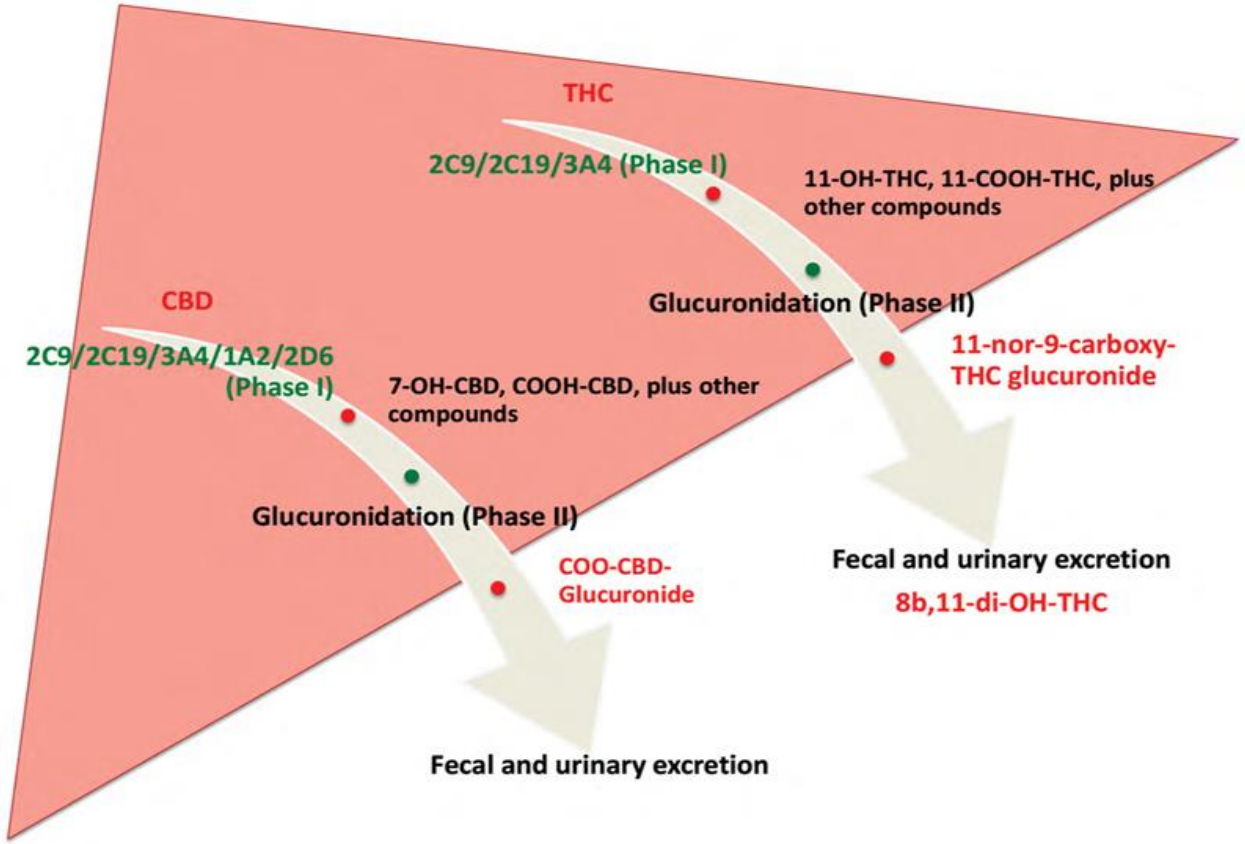
Pharmacokinetic Changes[8]

- **Decreased hepatic and renal function** in older adults results in reduced clearance of cannabis leading to an *increase in the elimination half-life*.
- **Increased relative body fat** in the elderly also *increases the volume of distribution* for lipid-soluble molecules like CBD and THC.

Pharmacology[12]

- Two phases of metabolism in the liver
  - Phase 1
    - Cytochrome P450 system
      - THC is metabolized in the liver by cytochrome P450 enzymes (mainly by CYP2C9 and to a lesser extent by CYP3A4). These enzymes convert THC into a metabolite called 11-hydroxy-THC, which is also psychoactive and can have stronger effects than THC itself.
      - CBD also metabolized by CYP2C9 and CYP3A4
  - Phase 2
    - Glucuronidation of phase 1 metabolites

Metabolism of THC and CBD[13]



Psychomotor

- Impairment in gait and stability predisposes older patients to an increased risk of falls and injuries.
- Impaired vision and reduced hearing make it difficult to interact with environment.
- Driving skills also impacted by age.
- Reading labels is more difficult.

Cognitive[14]

- Impairment in short-term memory and emotional processing may increase as a result of cannabis use.
  - may be particularly harmful in patients with pre-existing cognitive impairment.

Mental Health[15]

- Over 20 percent of adults aged 60 and over suffer from a mental or neurological disorder.
- Higher rates of depression - additional stressors
- Increased risk of psychotic episodes and suicidality (more pertinent to young patients).
- Higher substance use disorder

Cardiovascular[16]

- Increased risk for myocardial infarction, sudden cardiac death, arrhythmia, stroke and transient ischemic attacks
  - Increases heat rate
  - Increases blood pressure
  - Increases myocardial oxygen demand
- Cannabis is becoming increasingly potent, and smoking cannabis carries many cardiovascular health hazards as smoking tobacco.

How should we approach the elderly patient?[8]

1. Evaluate the indication
2. Explore available treatment modalities
3. Consider possible adverse effects
4. Assess risk-benefit
5. Treat/Recommend
6. Re-evaluate***

Evaluate the indication - *benefit*

- Chronic Pain – *relief of pain symptoms*
- Insomnia – *improved sleep patterns*
- Cancer – *reduced symptoms*
- Anorexia – *improved appetite*
- Anxiety Disorder – *reduction of stress/anxiety*
- Parkinson's Disease – *eases symptoms*
- Alzheimer's Disease – *eases symptoms*
- Hospice Care – *reduction in pain/improved appetite*
- Peripheral Neuropathy – *reduction in pain*

Explore available treatment modalities

- Have other treatment modalities been explored?
  - Pharmaceutical
  - Physical
  - Interventional
  - Psychological

Consider possible adverse effects

- Cardiovascular risk
- Risk of falls
- Cognitive impairment
- Driving
- Psychiatric comorbidities, risk of suicidality
- Drug-drug interactions

Assess risk-benefit

- How does the potential improvement in patient's quality of life measure against potential risks?
- Have they already tried cannabis and what was the result?

Treat/Recommend

- Begin with a treatment trial.
- Choose an appropriate product.
- Start with lowest available dosing.
  - Once daily
- Titrate slowly
  - Dose size
  - Number of doses.
- Journal amount and type of product used.
- Involve family in monitoring side effects and assure safety.

Re-evaluate

- Assess efficacy and adverse effects.
- Evaluate the need for continuation of treatment.
- Consider dose adjustment.
- Change method of delivery.
- Review how to read a label.
- Remind patients they must disclose cannabis use if planning surgery.

Summary[17]

- There are no absolute contraindications for cannabis use in the geriatric population, but certain groups warrant caution:
  - Severe cardiovascular disease
    - Heart failure or recent M.I.
  - Psychotic comorbidities
  - History of addictions
  - Gait instability and nervous system impairment
  - Polypharmacy
  - Reduced drug elimination mechanisms
    - Hepatic or renal disease

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Any questions?

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- Website: www.nmhealth.org/go/mcp
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- Email: medical.cannabis@doh.nm.gov

THANK YOU!!