Medical Cannabis Program

Cannabis Nugs Of Wisdom

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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? 

- 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?
Why?

• Alleviate the symptoms of chronic conditions
• Reduce medication burden
• Safer than other options
• Cheaper than other options
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%.  

• The potency of cannabis today far exceeds what many older patients may have been used to.
Do the elderly need additional attention?\textsuperscript{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.
Clinically Relevant Interactions

<table>
<thead>
<tr>
<th>Drug</th>
<th>Mechanism</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warfarin</td>
<td>CYP2C9 Inhibition</td>
<td>Increased INR with concomitant use of CBD resulting in GI bleeding. Monitor INR closely for warfarin adjustments. Avoid combination if possible.</td>
</tr>
<tr>
<td>Buprenorphine</td>
<td>CYP3A4 Inhibition</td>
<td>Increased concentrations of buprenorphine. Avoid combination if possible or adjust buprenorphine doses.</td>
</tr>
<tr>
<td>Tacrolimus</td>
<td>CYP3A4 Inhibition</td>
<td>Increased tacrolimus concentrations. Avoid combination if possible or adjust tacrolimus doses.</td>
</tr>
<tr>
<td>Clozapine</td>
<td>CYP3A4 and 2C19 Induction</td>
<td>Decreased clozapine concentrations. Consider dose adjustment.</td>
</tr>
<tr>
<td>Methadone</td>
<td>CYP3A4 and 2C19 Inhibition</td>
<td>Increased methadone levels resulting in increased somnolence. Consider dose adjustment.</td>
</tr>
<tr>
<td>Clobazam</td>
<td>CYP2C19 Inhibition</td>
<td>Increased clobazam concentrations. Consider dose adjustment.</td>
</tr>
<tr>
<td>Chlorpromazine</td>
<td>Possible CYP1A2 Induction</td>
<td>Decreased chlorpromazine concentrations. Consider dose adjustment.</td>
</tr>
<tr>
<td>Hexobarbital</td>
<td>Possible CYP3A4 Inhibition</td>
<td>Increased hexobarbital concentrations. Consider dose adjustment.</td>
</tr>
<tr>
<td>Ketoconazole</td>
<td>CYP3A4 Inhibition</td>
<td>Increased concentrations of THC/CBD</td>
</tr>
<tr>
<td>Rifampicin</td>
<td>CYP3A4 Induction</td>
<td>Decreased concentrations of THC/CBD</td>
</tr>
<tr>
<td>Stiripentol</td>
<td>CYP2C19 Induction</td>
<td>Increased concentrations of stiripentol. Consider dose adjustment.</td>
</tr>
<tr>
<td>Theophylline</td>
<td>CYP1A2 Induction</td>
<td>Decreased theophylline concentration. Consider dose adjustment.</td>
</tr>
<tr>
<td>Valproate</td>
<td>Possible UGT1A9 and UGTB7 Inhibition</td>
<td>Increased LFTs. Assess liver function before taking in combination.</td>
</tr>
</tbody>
</table>

Levels of clinical relevance of drug interactions were determined according to the combination of severity and probability of occurrence. 

Monitor plasma levels if possible.
Pharmacokinetic Changes

- 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

- 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

THC

11-OH-THC, 11-COOH-THC, plus other compounds

CBD

2C9/2C19/3A4/1A2/2D6 (Phase I)

Glucuronidation (Phase II)

7-OH-CBD, COOH-CBD, plus other compounds

COOH-CBD-Glucuronide

11-nor-9-carboxy-THC glucuronide

Fecal and urinary excretion

8b,11-di-OH-THC

Fecal and urinary excretion
**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\textsuperscript{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\textsuperscript{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

- 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?³

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

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
References

References

Any questions?
For More Information

• Website: www.nmhealth.org/go/mcp

• Phone: (505) 827-2321

• Email: medical.cannabis@doh.nm.gov

THANK YOU!!