Role of Cannabis in the Management of Dementia-Related Neuropsychiatric Symptoms

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No financial disclosures or conflicts of interest
Objectives/Outline

- My practice
- Background
  - Dementia-related neuropsychiatric symptoms
  - Standard pharmacologic treatments
- Cannabis use for symptom management
  - Evidence for use
  - Adverse effects
  - Geriatric-specific considerations
My Practice

- Madsen Geriatrics Clinic – University of Utah
- QMP for our clinic
- Referrals from the Madsen Geriatrics provider group only
  - Work with PCP to comanage issue
Dementia and Neuropsychiatric Symptoms

- Neuropsychiatric symptoms (NPS):
  - Sleep disturbance
  - Anxiety
  - Depression/apathy/poor appetite
  - Psychosis – hallucinations, delusions, paranoia
  - Agitation/irritability/restlessness
  - “Sundowning”
- More common with advanced dementia
Goals of Therapy

1. Delay disease progression
2. Improve quality of life
3. Reduce caregiver burden/stress
4. Maintain independence
5. Delay institutionalization
Typical Management

- Nonpharmacologic
- Cholinesterase inhibitors
- NMDA receptor antagonists
- SSRIs, SNRIs
- Antipsychotics
- Rarely benzodiazepines
What about cannabis?
Physiology

- Endocannabinoid system and AD brains
  - CB2 receptors may be selectively overexpressed in plaque associated cells in AD brains\(^1\)
  - Cannabidiol neuroprotective against plaque toxicity in vitro\(^2\)
  - CB1 receptor expression decreased in AD brains\(^4\)
    - CB1 receptor status correlated with degree of hypophagia
- Decreased cerebral acetylcholine in Alzheimer’s disease (AD)
  - THC competitively binds/inhibits acetylcholinesterase\(^3\)
Neuropsychiatric Symptoms

- Long story short: low quality evidence supporting medical cannabis use for neuropsychiatric symptoms of dementia\(^5\)
Neuropsychiatric Symptoms

Canadian Review:
- 12 primary studies
- 4 showed statistically significant improvement in NPS
- 8 did not show any difference
  - 5 RCTs, 1 case series, 2 case studies
### Neuropsychiatric Symptoms

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<thead>
<tr>
<th>Study Type</th>
<th>Improvement</th>
<th>Duration</th>
<th>Dose Details</th>
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<tbody>
<tr>
<td>Prospective cohort</td>
<td>Significant improvement in agitation, disinhibition, irritability, abhorrent motor movements, nighttime behavior disorders</td>
<td>28 days</td>
<td>Doses up to 7.5mg THC twice daily</td>
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<tr>
<td>Caregiver burden</td>
<td>scores</td>
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<tbody>
<tr>
<td>Case series</td>
<td>Significant improvement in nighttime behaviors and agitation</td>
<td>14 days</td>
<td>2.5mg THC at night</td>
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<tr>
<td>RCT</td>
<td>Increased weight/BMI Avg 7lbs, 3% BMI increase</td>
<td>84 days</td>
<td>2.5mg THC BID</td>
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Data Limitations

- Small study sizes
- Very few studies
- Conflicting results and conclusions
- Many variables that are difficult to control for
Adverse Effects

- In most studies, adverse effects were mild
  - Worsening neuropsychiatric symptoms, psychosis
  - Sedation
  - Gait instability

- Minimal in comparison to prescription meds
  - Antipsychotics – black box warning for death
  - SSRIs – hyponatremia, sedation, GI, worsening NPS
  - Benzos – cog impairment, fall risk
Geriatric Specific Considerations

- Sensitivity to medications
  - Start low, go slow
- Side effect monitoring
  - Focus on gait, sedation
- Safety, supervision
  - Lock boxes
  - Caregiver involvement
- What matters most?
My Approach

**Referral**

**Consultation visit**
- Geriatric assessment
- Goals of therapy/care
- Symptom assessment
- Concomitant medication use
- Gait assessment
- Risk/benefit discussion
- Discuss lack of evidence

**Prescription per PMP**
- I can’t help but give my own guidance
- Start low, 1-2.5mg qHS, uptitrate as needed

**Follow ups**
- Adverse effects, dosing guidance
Questions?


References


