Is Cannabis Safe for my Patients? A Review of Safety Considerations for Medical Cannabis

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Introduction

The use of cannabis for medical purposes is increasing worldwide. Clinicians must be comfortable determining if medical cannabis can be safely used in their patients.

- Most patients using cannabis for medical reasons report that they do not receive guidance from a health care professional (HCP)[1]
- Medical cannabis is commonly used in medically complex patients. This increases the risk of safety concerns
- Cannabis can increase the risk of adverse events, impairment, and drug interactions
- Even if a HCP does not initiate medical cannabis, they must be able to assess its safe use in their patients

We propose a model to help facilitate the safe initiation, titration and monitoring of patients using medical cannabis. This model can help HCPs assess their patients to determine the safe use of medical cannabis.

1) Before Initiation

Prior to medical cannabis initiation, risks and benefits should be assessed for each patient. This assessment can aid in determining if cannabis is safe to initiate. Clinicians at this stage should screen for precautions, contraindications and potential drug interactions.

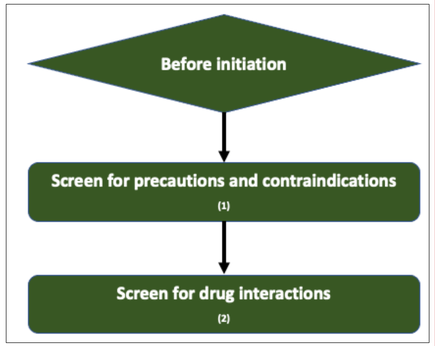
Step 1: Screen for precautions and contraindications

- Asses the patient's comorbidities and patient history
- Indication of how well patient may tolerate cannabinoids → assess risk for adverse outcomes
- Important component to properly assess the benefit vs risk ratio

Step 2: Screen for drug interactions

Assess for the risk of both pharmacodynamic and pharmacokinetic interactions.

- Most concern = pharmacodynamic interactions with CNS depressants [2]
- Cannabis metabolized in liver by CYP 450 isoenzymes. = CYP inhibitors or inducers may have pharmacokinetic drug interactions [3,4]



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2) Initiation and Titration

The initiation and titration process for an individual patient is dictated by factors related to comorbidities and drugs interactions. With these in mind, chemovar (strain) and route of administration selection should be considered in respect to the individual patient's safety considerations. A low-dose, slow titration regime followed by proper monitoring is essential minimizing safety risks.

Step 3: Consider safety of route of administration

- Different routes of administration have different pharmacokinetic properties
- Main concerns:
  - health risks due to smoking or inhalation, particularly in those with respiratory conditions
  - ensuring accurate dosing to limit risk of adverse events
- Oral oil = generally preferred → eliminates respiratory risk, allows for accurate dosing, easier for patient to deliver dose
- Inhalation = increased risk for respiratory harm → if necessary, use dried product vaporization

Step 4: Consider safety of chemovars

- Chemovars differ by cannabinoid content
- Important to know if patient's safety risk is more related to THC or CBD → may dictate safest chemovar selection
- *CBD Dominant strain* = non-impairing, linked to fewer adverse events → generally safest for initiation unless in patient with known drug interaction
- *THC Dominant strain* = majority of cannabis-related adverse events and risks with comorbidities

Step 5: Initiate with low-dose, slow titration strategy

Once the safest route of administration and chemovar are chosen, cannabis should be initiated with a low-dose, and slow titration regimen. This builds tolerance and is the best approach to avoiding impairment or other adverse events.

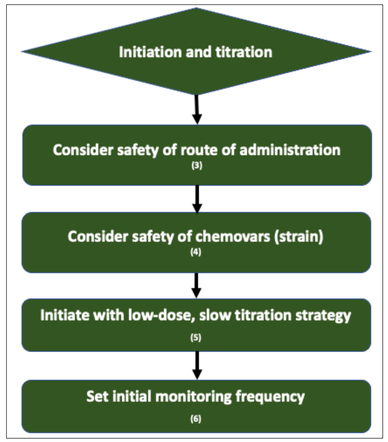

Figure 2. Key considerations when initiating and titrating

Step 6: Set initial monitoring frequency

Monitoring is an essential component to ensuring safety.

- Allows continued assessment of risk vs benefit ratio and mitigation or control of potential adverse events
- Frequency depends on prior cannabis experience, comorbid medical conditions, and patient's adherence to treatment plan
- Generally, initial follow-up is set at 1-3 months
- In special population (e.g. elderly, under 25, cardiovascular condition) consider initial follow-up at 2-3 weeks

3) Follow up

Following initiation, monitoring/management of adverse events and potential drug interactions are the primary focus of ensuring patient safety. These should be continually monitored to determine if adjustments are needed to mitigate risk. Additionally, efficacy and symptom control should be assessed help determine if the benefit outweighs the risk. Together these components allow HCP's to thoroughly and continuously assess risks of cannabinoid use in each patient.

Step 7: Assessing efficacy and symptom control

- Reevaluates risk vs benefit
- Track product details (chemovar, route, dose), improvements and worsening of symptoms

Step 8: Assessing and managing adverse events

- Assess if the patient has any cannabis-related adverse effects and develop a strategy to manage them

Step 9: Assess medication changes

- From an outcome and drug interaction perspective

Step 10: Set future follow up frequency

- Individualizing follow-up based on the patient
- Once stabilized, follow-up tends to occur less often

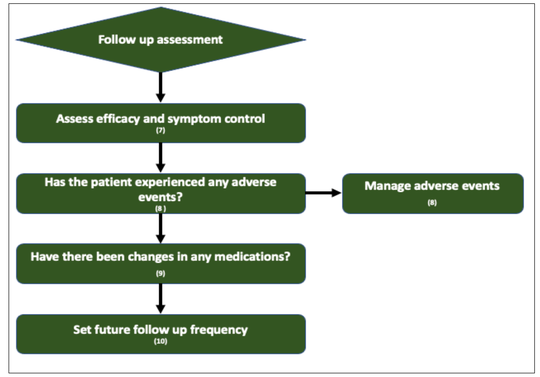

Figure 3. Key considerations for follow up assessment

Conclusion

A safety focused approach at each step of a patient's cannabis journey is necessary.

Before initiation:

- Screen for precautions/contraindications and potential drug interactions

Initiation and titration:

- Chemovar selection based on individual patient
- Important to know if patient belongs to a group with safety risk of THC or CBD use
- Safest route of administration and starting dose specific to patient should be considered
- During initiation low dose, slow titration method should be used

Follow up:

- Following initiation, monitoring for adverse events and drug interaction is crucial.
- Adjustments to treatment plans made to mitigate any issues or potential risks that arise

Just as more research must be completed on the efficacy and usefulness of medical cannabis, it is equally important to assess safety to reduce the risks of use. There is a great need for more robust efforts in assessing safety factors regarding medical cannabis use with a wide range of conditions.

- For information on impairment see: Eadie et al. Duration of Neurocognitive Impairment with Medical Cannabis Use: A Scoping Review. Frontiers in Psychiatry. In press spring 2021.
- For more resources on cannabis safety visit: Safe-cannabis.com
- The authors are in the process of submitting a manuscript for peer review discussing this model in greater detail