A review of medical cannabis in Post-Traumatic Stress Disorder (PTSD) management

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1. Mitigation of post-traumatic stress symptoms by Cannabis resin: A review of the clinical and neurobiological evidence


This review shows recent studies of PTSD patients who may be able to better cope with their condition using cannabis.

**Results**
- PTSD patients using cannabis may experience dampened strength/emotional impact of traumatic events, making it easier for them to sleep or decreasing their anxiety.
- There is evidence that tetrahydrocannabinol (THC) may act through GABAergic and CRH-mediated mechanisms to modulate anxiolytic effects.
- It has been hypothesized that PTSD is the result of hyperactivity of the amygdala.
- CBD has shown to reduce activation of the left amygdala-hippocampal complex and left posterior cingulate cortex.
- This mechanism for CBD may play a role in extinguishing fear-conditioned responses and reducing anxiety through reduced GABA release in the amygdala.
- Through the endocannabinoid system modulation by cannabis-derived compounds, alteration of fear conditioning, memory systems, general central nervous system arousal, mood, and sleep may be possible for those with PTSD.

2. Medical cannabis and mental health: A guided systematic review


This systematic review examines the use of cannabis for therapeutic purposes in areas of interest to mental health professionals. The following results are pertinent to the use of cannabis for those with PTSD:

**Results**
- Several studies have shown effectiveness of oral THC for improving sleep duration and quality, and reducing nightmares and daytime flashbacks in treatment-resistant patients.
- One study showed a self-reported 75% reduction in self-reported re-experiencing, avoidance, and arousal symptoms of PTSD
- One observational study found worsening PTSD symptoms in those who started cannabis use after discharge from traditional PTSD treatment.
- Patients with PTSD who begin treatment with medical cannabis should be monitored for cannabis use disorders.

3. Narrative review of the safety and efficacy of marijuana for the treatment of commonly state-approved medical and psychiatric disorders


This review outlines the safety and efficacy of cannabis for treatment of medical and psychiatric disorders. The following results presented are pertinent to the use of cannabis for those with PTSD.

**Results**
- The endocannabinoid system plays a significant role in the mechanism behind PTSD.
- Studies have shown cannabis and THC to mitigate many PTSD symptoms through the endocannabinoid system.
- One randomized controlled trial (RCT) has shown Nabilone as potential treatment for nightmares in those with PTSD.
• Observational studies have shown PTSD is associated with greater odds of cannabis use disorder diagnosis, greater cannabis craving and withdrawal.
• However, no RCT has been conducted using whole-plant extracts.
• There is a strong need for more RCTs examining the efficacy of cannabis for PTSD.

4. The use of a synthetic cannabinoid in the management of treatment-resistant nightmares in posttraumatic stress disorder (PTSD)


Forty-seven patients with continuing PTSD-related nightmares were reviewed for changes in nightmare incidence, nightmare intensity, incidence of flashbacks, sleep time, and quality of sleep after adjuvant treatment with Nabilone. Patients included in this review did not experience relief from conventional antidepressants and hypnotics.

Study design
• Patients were included in this prospective study if they experienced nightmares due to PTSD at least once per week.

• Nightmares in these patients were considered treatment-resistant when they persisted despite the use of conventional medications for PTSD.
• Patients were given Nabilone at a starting dose of 0.5 mg prior to bedtime.
• Patients titrated to appropriate doses to achieve therapeutic effect.
• Patients used a tracking sheet to record the intensity of their nightmares, the duration of sleep, and quality of sleep.

Results
• Forty-seven patients were included in this study.
• The average effective dose of Nabilone prior to bedtime was 0.5 mg.
• Thirty-four (72%) patients experienced cessation of nightmares or lessening of severity.
• In four patients, discontinuation of Nabilone was successful with nightmares not returning or returning at a reduced level.
• However, other patients experienced recurrence of nightmares after Nabilone withdrawal.
• Thirteen (28%) patients discontinued Nabilone therapy due to side effects.
• Common side effects included light-headedness, forgetfulness, dizziness, and headache.

Conclusion
Nabilone appears to be an efficacious option for the treatment of PTSD nightmares. Further RCTs examining Nabilone in PTSD patients are warranted.

5. A preliminary, open-label, pilot study of add-on oral Δ-tetrahydrocannabinol in chronic post-traumatic stress disorder


Patients with chronic PTSD received 5 mg of oral Δ9-THC twice per day. Patients’ global symptom severity, sleep quality, frequency of nightmares, and PTSD hyperarousal symptoms were measured using validated tools.

Study design
• Patients from a mental health clinic in Jerusalem, Israel, with chronic PTSD were included in this pilot study.
• Patients received 5 mg of Nabilone twice per day.
• The Clinicians-Administered PTSD Scale (CAPS) and Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) were used to confirm diagnosis of PTSD and assess patient symptom severity scores.
• The Clinical Global Impression Scale (CGI) was used to measure illness severity and global improvement.
• The Pittsburgh Sleep Quality Index (PSQI) was used to measure sleep quality and disturbances.

Results
• Ten patients were included in this study.
• There was a significant decrease in symptom severity in PTSD hyperarousal symptoms.
• Significant decrease in frequency of nightmares and total NES scores.
• Significant increase in sleep quality.
• Four patients reported mild side effects of dry mouth, headache and dizziness.

Conclusion
This study provides preliminary evidence of the safety and tolerability of oral Δ9-THC for use in chronic PTSD. These results support other studies investigating the efficacy of Δ9-THC for chronic and acute PTSD.