The Effects of CBD:THC Tincture Oil Reducing Symptoms and Overall Symptom Management Medication Dosages, in Persons with Multiple Sclerosis

Aryn Sieber, BA[1], Kristine Werner, MS[2], Karen Carera, PhD[3], Ben Thrower, MD[4], and Jacqueline Rosenthal, MD[4]
[1]CannaCauses Foundation, Los Angeles, CA, [2]Smyrna, GA, [3]Brookhaven, GA, [4]Andrew C. Carlos MS Institute, Shepherd Center, Atlanta, GA

ABSTRACT

OBJECTIVES – The purpose of this study is to investigate if medicinal cannabidiol-to-tetrahydrocannabinol (CBD:THC) oil tinctures 1.) improve symptoms and 2.) reduce overall symptom management medication dosages in people with MS (pwMS). We hypothesize that pwMS will experience improvements in these measures while using medicinal CBD:THC tinctures.

BACKGROUND – It is now becoming more common for persons with multiple sclerosis (pwMS) to use cannabis to try to alleviate their MS symptoms, such as pain and spasticity; however, research to help guide its use is limited (Cofield et al., 2015).

METHODS – Participants took medicinal CBD:THC tincture oil daily. Self-reported symptom and medication assessments rating a scale from 1 to 10 were completed at baseline prior to starting a tincture, and again after an average duration of three to four months.

RESULTS – 61 pwMS aged 25 and older are included in the study. There were significant reductions (p < 0.0001) in the following symptom management scores: pain (from a mean [SD] of 7.4 [2.0] to 3.9 [1.9], n = 45), spasticity (from a mean [SD] of 7.2 [1.9] to 3.3 [1.9], n = 31), neuropathy (from a mean [SD] of 7.7 [2.0] to 4.5 [2.6], n = 25), and sleep (from a mean [SD] of 7.5 [1.9] to 3.0 [2.1], n =34). Gabapentin intake was significantly reduced from a mean [SD] of 1581.3 [1284.6] mg to 625 [739.9] mg (n = 12; p = 0.036). There were no significant reductions in baclofen, tizanidine, or benzodiazepine intake.
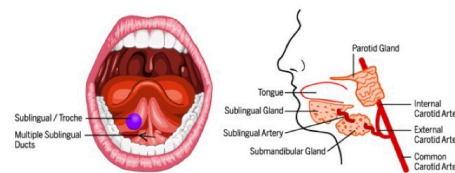
CONCLUSIONS – Although medicinal CBD:THC tincture oil shows promise in overall symptom reduction and symptom management medication dosage reduction in pwMS, researchers need to conduct additional studies, including clinical research studies, for pwMS using medicinal CBD:THC tincture oil. A larger sample size will allow inferential statistics to be performed. This study will further contribute to the evidence related to the efficacy of this intervention.

BACKGROUND

It is now becoming more common for persons with multiple sclerosis (pwMS) to use cannabis to try to alleviate their MS symptoms. A survey of pwMS published in 2017 found that 47% of respondents considered using cannabis to treat their MS symptoms, 26% used cannabis for their MS symptoms, 20% have spoken with their physician about using cannabis, and 16% currently use cannabis (Cofield et al., 2015). Many reviews (Zhornitsky and Potvin, 2012; Jawahar et al., 2013; Koppel et al., 2014; Whiting et al., 2015) agree cannabis might have a positive effect on pain in MS. In addition to the legal status, limited research evidence remains a barrier to understanding the role cannabis can play in pwMS alleviate symptoms. The amount of scientific research in this area is increasing; however, case reports and anecdotes exceed studies; thus, data regarding cannabis use to treat pain, spasticity, neuropathy and sleep quality in pwMS remains limited

METHODS

- Inclusion criteria – MS diagnosis and age 25 years and older.
- Exclusion criteria – Participants who stopped taking the tincture. Participants who did not complete symptom and medication assessments.
- Participants took medicinal CBD:THC tincture oil daily for a duration of three to four months.
- Self-reported symptom and medication assessments rating a scale from 1 to 10 were completed at baseline prior to starting a tincture, and again after an average duration of three to four months.

RESULTS

- 61 pwMS aged 25 and older are included in the study.
- There were significant reductions in pain, spasms, neuropathy, and sleep [Figure 1].
- With regards to symptomatic treatment, Gabapentin intake was significantly reduced [Figure 2]. Conversely, there were no significant reductions in baclofen, tizanidine, or benzodiazepine intake.
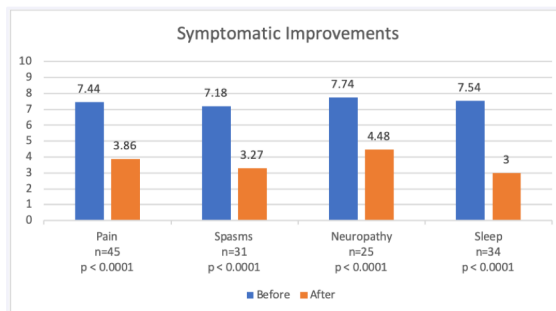

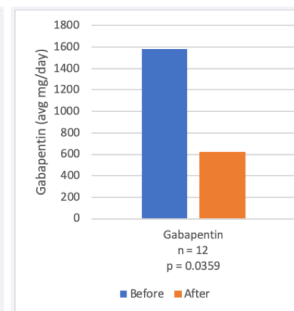FIGURE 1. Symptomatic improvements for all study participants before/after CBD:THC oil.

FIGURE 2. Gabapentin intake before/after CBD:THC oil.

CONCLUSIONS

Although medicinal CBD:THC tincture oil shows promise in overall symptom reduction and symptom management medication dosage reduction in pwMS, researchers need to conduct additional studies, including clinical research studies, for pwMS using medicinal CBD:THC tincture oil.

FUTURE RESEARCH

- A larger sample size will allow inferential statistics to be performed. This study will further contribute to the evidence related to the efficacy of this intervention.
- Additional investigation of symptom management: mental health (anxiety and depression), pain and sleep quality.
- Additional investigation of medicinal cannabis administration routes: edibles, vaping, and topical products.
- Funding is needed to conduct a double-blind, randomized, placebo-controlled study to prove the efficacy and long-term safety of medicinal CBD:THC tincture oil for reducing symptoms and overall symptom management medication dosages in pwMS.
- Additional research should be directed towards consistent and accurate measurement of medicinal cannabis and CBD product ingredients: "…CBD products are not produced under the guidance of good manufacturing practices (GMP) and are not subject to regulations governing labeling, purity, and reliability…Without independent testing (e.g. USP certification) of CBD products for content and purity, as well as bioavailability testing of specific products, uncertainty surrounds the use of available CBD products in routine clinical settings" (Welty, et al., 2014).

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