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Use of Pharmaceutical Analgesics Versus Cannabis or Cannabidiol-Tetrahydrocannabinol Oils to Reduce Pain

Rana Elias[1], Maria Raheb[1,2], David Mekhaiel[1,2], Zack Cernovsky[2]*, Gurpreet Sidhu[1], Deborah Warren[1], Gamal Sadek[1], Simon Chiu[2], Yves Bureau[2]

[1]Methadone Clinics in London, Ontario, Canada.

[2]University of Western Ontario, London, Ontario, Canada.

zcernovs@uwo.ca

***Corresponding Author:** Dr. Zack Cernovsky, Professor of Psychiatry, London, Ontario, Canada.*

Abstract

Objective: *Pain is a common symptom among opiate substitution patients. We surveyed those who recently attempted to control their pain with cannabidiol (CBD)-tetra hydrocanabinol (THC) oils or via cannabis.*

Materials and Methods: *18 patients in a methadone/suboxone clinic participated (age 29 to 56 years, mean=38.9, SD=7.8; 13 males, 5 females). Their mean number of years on pharmaceutical analgesics was 7.5 (SD=5.2, range 1 to 20). Their average severity of pain (rated on a scale from 0=no pain to 10=extreme pain) was 7.6 (SD=1.7, range 5 to 10). All 18 patients completed our questionnaire about their use of pharmaceutical analgesic medications, smoked or edible cannabis, CBD-THC oils, and the respective outcomes.*

Results: *The average analgesic success rate (rated by the patients from 0=no relief to 10=pain eliminated) was 3.2 (SD=2.8) for pharmaceutical analgesics, 6.5 (SD=2.7) for smoked or edible cannabis, and 7.1 (SD=2.0) for CBD-THC oils. In our group of patients, the pharmaceutical analgesics reduced pain significantly less than CBD-THC oils (t=4.5, df=13, p<.001, 2-tailed) and also less than smoked or edible cannabis (t=3.3, df=13, p=.006, 2-tailed). The difference between smoked/edible cannabis and CBD-THC oils was not significant (p>.05). The majority of patients (62.5%) were able to stop their pharmaceutical analgesics when on CBD-THC oils. The more days on the oils, the longer lasted the relief (Spearman rho=.75, p=.013).*

Discussion: *The duration of relief via cannabis might be more short-lived than from CBD-THC oils. Future studies need more control over the dose and composition of such oils.*

Conclusions: *The CBD-THC oils are promising analgesics for further research and clinical work.*

Keywords: *pain, cannabidiol, tetrahydrocannabinol, analgesics, methadone, opiates*

Introduction

Stevens and Higgins [1] reviewed studies on the use of cannabis for coping with pain and concluded that cannabis is not useful for pain management. In contrast, laboratory studies show that cannabinoids have analgesic potential [2] and a well-designed randomized crossover trial of smoked cannabis in HIV patients with neuropathic pain conducted by Ellis et al. [3] found that pain relief was greater with cannabis than placebo (effect size = 0.6; p = 0.016) and that the proportion of their subjects achieving at least 30% pain relief with cannabis was higher than on placebo (p=.043).

Lynch and Clark [4] reported case studies of three chronic pain patients (one with multiple sclerosis, one with HIV related peripheral neuropathy, and another with lumbar injury) who reported being able to reduce their dose of opioids when using cannabis.

In contrast, Campbell et al. [5] surveyed patients with non-cancer chronic pain who were prescribed opioids and of whom 295 reported using cannabis for pain. Campbell's team concluded that there is no evidence that cannabis use reduced their patients' opioid use. It is possible that some persons in such studies might have used cannabis (and perhaps also their opioids)

as a part of lifestyle, for semi-recreational purpose or in similar ways as some individuals use alcohol "to obtain some pain relief."

A metanalytic study by Mücke et al. [6] compared "cannabinoids" as a group to placebo and found no difference in proportions of persons reporting a pain reduction of more than 30%.

The cannabis studies are usually hopelessly confounded by the fact that there are at least 50 hybrids of cannabis, most of which contain about 500 chemical substances in proportions different from hybrid to hybrid. This can lead to highly divergent results. In addition, different pain patients may react to the same cannabinoid substance in different ways, some benefitting and some not.

Of particular interest to us are the non-euphoric CBD-THC oils as we encountered persons with severe chronic pain for which they refused any potentially addictive medications, found no relief with non-opioid analgesics, but whose pain was reduced to or close to zero after exposure over several weeks to the non-euphoric CBD-THC oils (these oils seem to reduce the pain slowly over days or weeks). Our study focuses on the use of such oils or of cannabis for pain relief in opiate substitution patients.

Materials and Method

Eighteen patients in a methadone/suboxone clinic participated (age 29 to 56 years, mean=38.9, SD=7.8; 13 males, 5 females). Their mean number of years on pharmaceutical analgesics was 7.5 (SD=5.2, range 1 to 20). All 18 eventually tried using CBD oils or edible or smoked marijuana to cope with their pain. All 18 patients completed our questionnaire about their use of pharmaceutical analgesic medications, smoked or edible cannabis, CBD-THC oils, and the respective outcomes.

Results and Discussion

Using a scale from 0 (no pain) to 10 (extreme pain), our patients rated their pain on the average at 7.6 (SD=1.7). All of them reported pain of at least 5 on the 10 point scale. Our patients reported having used, over the years, the following analgesics (as prescribed or those available without prescription): Tylenol: 69.2% of our patients, Advil: 81.5%, Aleve: 41.7%, Naproxen: 58.3%, Lyrica: 45.5%, Ibuprofen: 50.0%, and Hydro-morphone: 45.5%.

Most of our patients (68.8%) indicated that none of these medications was sufficiently helpful to control their chronic pain. When estimating the efficacy of these pharmaceutical analgesics for pain reduction on the scale from 0 (no success) to 10 (eliminated the pain), the average success rating was only 3.2 (SD=2.8). They estimated these medications provided, on the average, a relief lasting about 4.4 hours (SD=3.3).

Most of these patients reported having tried smoking marijuana (83.3%) or edible marijuana (88.2%) for pain control. They rated the analgesic effect of smoked or edible cannabis (on the scale from 0 = no success to 10=eliminated the pain) on the average at 6.5 (SD=2.7) and they estimated that the relief lasted, on the average, for 10.4 (SD=9.9 hours), ranging from 22 hours to 36 hours.

Most patients in this sample (88.9%) also tried some form of CBD-THC oil. They reported having used it on a daily basis for the last 5 days to 183 days, with the average at 32.7 days (SD=56.2). Two of our patients indicated "everyday", but their starting point could not be determined without ambiguity, so these two could not be included in calculating the arithmetic average.

The patients rated the analgesic effect of CBD (on the scale from 0 =no success to 10=eliminated the pain) at 7.1 (SD=2.0). The duration of the pain relief was rated as "Less than 5 hours" by 21.4% of the patients, as "5 or more hours, but less than a day" by 42.9%, as "One day or longer, but less than a week" by 21.4%, as "One week or longer" by 0.0%, and as "More than 5 weeks" by 14.3%. It is possible that the patients who reported the relief lasting less than a day (the total of 64.3%) had perhaps higher THC than CBD content in their oil.

A third of our patients (33.3%) estimated that their oil contained more THC than CBD, 26.7% estimated the proportion was equal, 26.7% reported the proportion as 3 parts of CBD to one of THC, and 13.3% more than 3 parts of CBD to one of THC.

Unfortunately, these data might be unreliable because some patients obtained the CBD oil from a producer whose products are not screened properly by a laboratory. Rubin [7] warns us that "In 2015 and 2016, the FDA tested CBD products sold online and found that some had no CBD but did contain THC, which their labels failed to mention". Some of these oils indeed contained no CBD at all [7]. Furthermore, different

medical conditions that trigger pain probably require different optimal ratios of CBD to THC, but most of the patients (and therapists) do not know yet what ratio they should use for their particular source of pain.

About two thirds of our patients (62.5%) reported that the CBD-THC oil helped them to stop other pain medications, 25.0% indicated that it did not, one patient reported only a partial success, and another patient was not sure.

In our group of patients, the pharmaceutical analgesics reduced pain significantly less than CBD-THC oils (t-test, t=4.5, df=13, p<.001, 2-tailed), and also less than smoked or edible cannabis (t-test, t=3.3, df=13, p=.006, 2-tailed).The difference between smoked/edible cannabis and CBD-THC oils was in the expected direction, but not statistically significant (p>.05), perhaps due to small sample size and maybe also due to the fact that perhaps some of these patients used an oil only labelled as CBD, but which contained no CBD. Furthermore, an optimal ratio of CBD to THC would need to be established to optimize the analgesic benefits.

The more days our patients were using these CBD-THC oils, the longer lasted their pain relief (Spearman rho=.75, p=.013). This suggests a possible long term healing effect that is worthwhile to investigate statistically in future studies. The duration of relief via cannabis might be more short-lived than from CBD-THC oils: this needs to be examined statistically in future research.

The experiments by Manzanares' group show that the CBD is non-addictive [8]. In fact, animal studies by Manzanares' team [9, 10] also show that CBD (jointly with naltrexone) is useful in reducing ethanol consumption and motivation to drink. Prud'homme's team [11] concluded from their review of preclinical and human studies "that CBD may have therapeutic properties on opioid, cocaine, and psychostimulant addiction, and some preliminary data suggest that it may be beneficial in cannabis and tobacco addiction in humans." Our own recent study [12] suggested that CBD oils help at least some opiate substitution patients who are afflicted with chronic pain to decrease their use of opiates or methadone.

Our clinical experience suggests that, as oils in a therapeutic dose, even the oil with one to one ratio of CBD to THC does not have a euphoric effect and does not seem addictive. If prescribed to patients, it would have no street value for clandestine resale to drug addicts.

Our sample may be biased & non-representative: those who benefit from marijuana or its oils were perhaps more likely to participate. Cannabinoids are perhaps not a panacea for all pain patients. However, the results from our sample indicate that, at least for some subgroup of methadone or suboxone patients with severe chronic pain, the non-euphoric and non-addictive CBD-THC oils are significantly more effective than conventional analgesics in reducing their pain.

The same as many other studies on cannabis, our study suffers from severe limitations such as not being able to establish the precise ratio and even the contents of the reportedly used "CBD-THC oil" and the daily dose. Hopefully, the administrative/legislative barriers to research on these oils at universities would be removed and research with better designs would be fast-tracked. Too many persons suffer from severe chronic pain and use pharmaceutical medications with severe long term side-effects instead of CBD oils which seems relatively free of such adverse effects.

Conclusions

In our group of patients, the pharmaceutical analgesics reduced pain significantly less than CBD-THC oils and also less than smoked or edible cannabis. About two-thirds of our patients indicated that they were able to stop their pharmaceutical analgesics when on CBD-THC oils. Barriers to research on non-euphoric CBD-THC oils need to be removed to allow better designed studies with precise measures. More research is needed on the effects of various CBD to THC ratios and dose for different categories of pain patients.

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