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Knowledge of Cannabinoids among Patients, Physicians, and Pharmacists

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Abstract

***Objective:** Many patients hold false beliefs about cannabinoids. We evaluated their related beliefs and we also surveyed physicians and pharmacists about their opinions regarding cannabinoids.*

Materials and Method

Study 1: 42 patients (mean age 39.1 years, SD=12.6, range 18 to 67) in urban methadone/suboxone clinics were surveyed via questionnaire about their use of cannabis and their knowledge of its potential medical applications and of its positive and negative properties.

Study 2: We recruited 53 professionals (37 physicians and 16 pharmacists) to compare the utility and adverse side-effects of cannabinoids to those of other frequent non-opioid medications for pain, epilepsy, insomnia, and for loss of appetite in HIV positive patients.

***Results (both studies):** Two-thirds (66.7%) of our patients reported using cannabis (71.4% of users via smoking, 46.4% in food, 28.6% as drops). The users knew significantly more (t=2.1, df=39, p=.043) legitimate medical applications of cannabis (mean=4.7, SD=2.9) than non-users (mean=2.1, SD=1.7). Most frequently listed medical applications were epilepsy (73.2%), cancer (70.7%), pain (65.9%), and arthritis (53.7%). However, only 52.4% of patients correctly attributed "drug induced psychosis" to tetrahydrocannabinol rather than to other cannabis constituents. Some erroneously attributed their "high" to cannabidiol (14.3%).*

The MDs and pharmacists who volunteered for our survey rated cannabinoids as being more free of adverse side-effects than some other commonly prescribed non-opioid medications for pain, insomnia, and for loss of appetite in HIV patients. Their ratings of cannabinoids for epilepsy were also relatively favourable.

***Conclusions:** Patients need expert therapeutic guidance from their physicians and pharmacists to properly benefit from cannabinoids.*

Keywords: *insomnia, pain, epilepsy, cannabis, cannabidiol, tetrahydrocannabinol, pharmacotherapy.*

Introduction

Numerous investigations of medical use of cannabinoids have been published within the last 10 years: their review is beyond the scope of this brief article. Among those most prominent and therapeutically promising seem the studies of cannabidiol (CBD) to control symptoms of schizophrenia [1], severe treatment refractory autism [2], and epilepsy [3]. Well-designed animal studies by Manzanares team show that the CBD is non-addictive [4] and that CBD (jointly with naltrexone) is also useful in reducing ethanol consumption and motivation to drink [5,6].

Cannabis plants contain more than 500 chemicals: those so far most explored for their use in psychiatry are tetrahydrocannabinol (THC) and the CBD. Most

of the public and also many legislators are not aware of the crucial difference between the orally used, non-euphoric CBD oil for medical patients and the "recreational smoking of dry marihuana" which typically has a high content of THC. The CBD is a powerful anti-inflammatory substance and is relatively free of adverse side-effects when used in therapeutic dose. In contrast, the THC (unless adequately combined with CBD) has the potential to trigger a "THC induced psychosis" in some persons. The THC is sometimes assumed to have a potential for creating a drug dependence. In contrast, CBD has a potential for reducing the patients' dependence on opioid analgesics [7].

We undertook two studies. In our first study, we evaluated the knowledge of cannabinoids among methadone-suboxone patients. In our second study, we surveyed MDs and pharmacists about their opinions on therapeutic potential of cannabinoids.

First Study

Materials and Method

Patients in two urban methadone-suboxone clinics completed a brief questionnaire on an anonymous basis about their use of cannabis, about their knowledge of CBD and THC, about their potential medical applications (arthritis, epilepsy, pain, MS, schizophrenia, etc.), and about their knowledge of positive and negative properties of cannabinoids. Meaningful responses were obtained from 42 patients (mean age 39.1 years, SD=12.6, range 18 to 67). With respect to gender, 22 patients identified themselves on the questionnaire as males, 16 as females, and 5 patients failed to indicate their gender.

Results and Discussion

Two-thirds (66.7%) of our patients reported using cannabis in one or more favourite ways: 71.4% of the users via smoking, 46.4% in food, and 28.6% as drops. The main listed positive effects were relaxation (81.0%), creativity (54.8%), and decrease of anxiety (51.2%). The main negative effects were sleepiness/drowsiness (64.3%), paranoia (38.1%), and anxiety (26.2%). Most frequently listed medical applications of cannabinoids known to our patients were epilepsy (73.2%), cancer (70.7%), pain (65.9%), and arthritis (53.7%).

Only 52.4% correctly attributed "drug induced psychosis" to THC rather than to other cannabis constituents. Some erroneously attributed "high" to CBD (14.3%).

Most methadone patients know too little about the difference between the CBD and the THC: they need professional guidance from physicians and pharmacists.

Second Study

Materials and Method

We conducted an internet based survey of Canadian physicians and pharmacists about medical use of cannabinoids. Fifty-three professionals (37 physicians and 16 pharmacists) volunteered for the study on an anonymous basis.

The first question was about treatments of chronic pain with Advil, Celebrex, Lyrica, cannabinoids, and Cortisone injections. The respondents were to indicate which of these medications can unduly increase blood pressure or cause upset stomach in a long term treatment. The respondents were to circle "all that apply."

The second question was about treatments of epilepsy with daily multiple seizures, via carbamazepine, topiramate, zonisamide, and cannabinoids. The respondents were asked to choose those with the least side-effects such as dizziness, sleepiness, fatigue, impaired memory or concentration, or depression. The respondents were to circle "all that apply."

The third question dealt with the treatment of loss of appetite in HIV positive patients via megestrol acetate or cannabinoids. The respondents were to indicate which of these can increase caloric intake and help to gain weight without causing any sleep troubles, upset stomach, fatigue, and/or headache.

The last question was about treatment of insomnia via trazadone, doxepin, cannabinoids, eszopiclone, and "over the counter sleeping aids." The respondents were to indicate which of these have the least side-effects such as nausea, vomiting, drowsiness, dizziness, headaches, light-headedness, blurred vision, dry mouth, constipation, reduced sexual drive, daytime sleepiness, and sleep walking. The respondents were to circle "all that apply."

Results and Discussion

With respect to the potential of non-opioid analgesic medications for unduly increasing the blood pressure or upsetting the stomach, the most frequently marked were Celebrex (90.6% of respondents), Advil (69.8%), and Cortisone injections (35.8%). The cannabinoids (13.2% of respondents) and Lyrica (13.2% of respondents) were marked less frequently as triggering those adverse effects.

When asked to select medications with the least side effects while treating epilepsy with daily multiple seizures, the most frequently chosen was carbamazepine (45.3% of respondents), followed by topiramate (32.1%) and cannabinoids (32.1%). The zonisamide was chosen least frequently (22.6%).

With respect to treatment for loss of appetite in HIV positive patients without causing adverse side-effects, our respondents selected more often cannabinoids (60.4% of respondents) than megestrol acetate (39.6%).

For the treatment of insomnia, the lowest potential for adverse side-effects was attributed to cannabinoids (47.2% of respondents), then to "over the counter sleeping aids (45.3%), and then to eszopiclone (34.0%) and trazodone (26.4%). Doxepin was not chosen by any of the respondents.

The physicians and pharmacists in our sample held relatively positive views of therapeutic use of cannabinoids, often rating them as causing less adverse side-effects than more common medications. Our sample of these medical professionals may be unrepresentative of their clinical colleagues. It is possible that those with at least some clinical experience with cannabinoids or those familiar with the newest research on cannabinoids (CBD, THC) have more frequently volunteered to take part in our anonymous internet survey.

Conclusions (Study 1 and Study 2)

Both the patients and the physicians and pharmacists had positive views at least about some therapeutic applications of cannabinoids. The patients might often hold false beliefs about the various chemical constituents of cannabis and need therapeutic guidance from their physicians and pharmacists, especially in respect to the difference between the CBD and THC. Both the physicians and pharmacists in our sample often rated cannabinoids as causing less adverse side-effects than some very commonly used medications for pain and for insomnia.

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