

Therapeutic Benefits of Cannabis: A Patient Survey

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Abstract

Clinical research regarding the therapeutic benefits of cannabis ("marijuana") has been almost non-existent in the United States since cannabis was given Schedule I status in the Controlled Substances Act of 1970. In order to discover the benefits and adverse effects perceived by medical cannabis patients, especially with regards to chronic pain, we hand-delivered surveys to one hundred consecutive patients who were returning for yearly re-certification for medical cannabis use in Hawai'i.

The response rate was 94%. Mean and median ages were 49.3 and 51 years respectively. Ninety-seven per cent of respondents used cannabis primarily for chronic pain. Average pain improvement on a 0-10 pain scale was 5.0 (from 7.8 to 2.8), which translates to a 64% relative decrease in average pain. Half of all respondents also noted relief from stress/anxiety, and nearly half (45%) reported relief from insomnia. Most patients (71%) reported no adverse effects, while 6% reported a cough or throat irritation and 5% feared arrest even though medical cannabis is legal in Hawai'i. No serious adverse effects were reported.

These results suggest that Cannabis is an extremely safe and effective medication for many chronic pain patients. Cannabis appears to alleviate pain, insomnia, and may be helpful in relieving anxiety. Cannabis has shown extreme promise in the treatment of numerous medical problems and deserves to be released from the current Schedule I federal prohibition against research and prescription.

Introduction

Research into the therapeutic benefits of cannabis has been severely limited by the federal Schedule I classification, which essentially prohibits any ability to acquire or to provide cannabis for studies investigating possible therapeutic effects. Limited studies have been done in Canada and in Europe, as well as several in California.

Hawai'i is one of twenty states (plus the District of Columbia) which allow certifications for use of medical cannabis. The authors have been certifying patients for use of medical cannabis in Hawai'i for more than four years. In an attempt to discover the perceived benefits and adverse effects of medical cannabis, we conducted a survey of medical cannabis patients.

Methods

Sample Selection

Between July of 2010 and February of 2011, we hand-delivered questionnaires to one hundred consecutive patients who had been certified for the medical use of cannabis for a minimum of one year and were currently re-applying for certification.

Survey Design and Administration

The subjects were verbally instructed to complete the questionnaire in the office at the time of re-certification or were provided a stamped and addressed envelope so they could complete the questionnaire at home. All patients were instructed to remain anonymous and to answer the questions as honestly as possible.

A universal pain scale was used to assess pain before and after treatment (0 = no pain, 10 = worst pain ever). Open-ended questions were asked to ascertain the following:

- (1) "Any adverse effects you have had from using medical cannabis?"
- (2) "Does medical cannabis help you with any other problems? If so, what?"

The purpose of the last question was to explore benefits outside the parameters of the state of Hawai'i's medical cannabis qualifying conditions.

Results

The overall response rate was 94%. The mean age was 49.3 years and the median age was 51. No data was collected on sex or race/ethnicity. Almost all respondents (97%) used medical cannabis primarily for relief of chronic pain.

Average reported pain relief from medical cannabis was substantial. Average pre-treatment pain on a zero to ten scale was 7.8, whereas average post-treatment pain was 2.8, giving a reported average improvement of 5 points. This translates to a 64% average relative decrease in pain.

Other reported therapeutic benefits included relief from stress/anxiety (50% of respondents), relief of insomnia (45%), improved appetite (12%), decreased nausea (10%), increased focus/concentration (9%), and relief from depression (7%). Several patients wrote notes (see below) relating that cannabis helped them to decrease or discontinue medications for pain, anxiety, and insomnia. Other reported benefits did not extend to 5% or more of respondents.

Six patients (6%) wrote brief notes relating how cannabis helped them to decrease or to discontinue other medications. Comments included the following: "Medical cannabis replaced my need for oxycodone. Now I don't need them at all." "I do not need Xanax anymore." "In the last two years I have been able to drop meds for anxiety, sleep, and depression." "I've cut back 18 pills on my morphine dosage."

A majority (71%) reported no adverse effects, while 6% reported a cough and/or throat irritation and 5% reported a fear of arrest. All other adverse effects were less than 5%. No serious adverse effects were reported.

Discussion

According to the Institute of Medicine, chronic pain afflicts 116 million Americans and costs the nation over \$600 billion every year in medical treatment and lost productivity.¹ Chronic pain is a devastating disease that frequently leads to major depression and even suicide.² Unfortunately, the therapeutic options for chronic pain are limited and extremely risky.

Spurred by efforts to encourage physicians to become more pro-active in treating chronic pain, US prescription opioids (synthetic derivatives of opium) have increased ten-fold since 1990.³ By 2009 prescription opioids were responsible for almost half a million emergency department visits per year.⁴ In 2010 prescription opioid overdoses were responsible for well over 16,000 deaths.⁵ A 2010 article in the *New England Journal of Medicine* addressing this problem is aptly titled “A Flood of Opioids, a Rising Tide of Deaths.”³ Drugs such as OxyContin[®] are so dangerous that the manufacturer’s boxed warning states that “respiratory depression, including fatal cases, may occur with use of OxyContin, even when the drug has been used as recommended and not misused or abused.”⁶ Clearly safer analgesics are needed.

The Hippocratic Oath reminds to “first, do no harm.” It cannot be over-emphasized that there has never been a death from overdose attributed to cannabis.⁷ In fact, no deaths whatsoever have been attributed to the direct effects of cannabis.⁷ Cannabis has a safety record that is vastly superior to all other pain medications.

Many physicians worry that cannabis smoke might be as dangerous as cigarette smoke; however, epidemiologic studies have found no increase in oropharyngeal or pulmonary malignancies attributable to marijuana.⁸⁻¹⁰ Still, since smoke is something best avoided, medical cannabis patients are encouraged to use smokeless vaporizers which can be purchased on-line or at local “smoke-shops.” In states that (unlike Hawai‘i) allow cannabis dispensaries, patients can purchase “vapor pens,” analogous to e-cigarettes and fully labeled regarding doses of THC and other relevant cannabinoids.

Tests have proven that smoke-free vaporizers deliver THC as well or even more efficiently than smoking, and that most patients prefer vaporizers over smoking.¹¹ Like smoking, vaporizers allow patients to slowly titrate their medicine just to effect, analogous to IV patient-controlled analgesia (PCA) that has been so successful in hospital-based pain control. This avoids the unwanted psychoactive side-effects often associated with oral medication such as prescription Marinol[®] (100% THC in oil) capsules which tend to be slowly and erratically absorbed and are often either ineffectually weak or overpoweringly strong.^{12,13} Because inhaled cannabis is rapid, reliable, and titratable, most patients strongly prefer inhaled cannabis over Marinol[®] capsules.¹⁴

While the relative safety of cannabis as medication is easily established, the degree of efficacy is still being established. The reported pain relief by patients in this survey is enormous. One reason for this is that patients were already self-selected for success: they had already tried cannabis and found that it worked for them. For this sample, the benefits of cannabis outweighed any negative effects. The study design may therefore lend itself to over-estimating the benefits and under-estimating the negative side-effects if extrapolated to the general population.

Another reason that the reported pain relief is so significant is that cannabis has been proven effective for many forms of

recalcitrant chronic pain. A University of Toronto systematic review of randomized controlled trials (RCT’s) examining cannabinoids in the treatment of chronic pain found that fifteen of eighteen trials demonstrated significant analgesic effect of cannabinoids and that there were no serious adverse effects.¹⁵

While opioids are generally considered to have little benefit in chronic neuropathic pain, several RCT’s have shown that cannabinoids can relieve general neuropathic pain,¹⁶ as well as neuropathic pain associated with HIV and with multiple sclerosis (MS).^{17,18} One study found that cannabis had continuing efficacy at the same dose for at least two years.¹⁹

Even low dose inhaled cannabis has been proven to reduce neuropathic pain. In a randomized, double-blind, placebo-controlled crossover trial involving patients with refractory neuropathic pain, Ware, et al, found that therapeutic blood levels of THC (mean 45 ng/ml achieved by a single inhalation three times a day) were much lower than those necessary to produce a cannabis euphoria or “high”(> 100 ng/ml).¹⁹

Cannabis is relatively non-addicting, and patients who stop using it (eg, while traveling) report no withdrawal symptoms. One author (Webb C.) worked for 26 years in a high volume emergency department where he never witnessed a single visit for cannabis withdrawal symptoms, whereas dramatic symptoms from alcohol, benzodiazepine, and/or opioid withdrawal were a daily occurrence.

So why is cannabis still held hostage by the DEA as a Schedule I substance? On June 18, 2010, the Hawai‘i Medical Association passed a resolution stating in part that:

“Whereas, 1) Cannabis has little or no known withdrawal syndrome and is therefore considered to be minimally or non-addicting; and

Whereas, 2) Cannabis has many well-known medical benefits (including efficacy for anorexia, nausea, vomiting, pain, muscle spasms, and glaucoma) and is currently recommended by thousands of physicians; and

Whereas 3) Cannabis has been used by millions of people for many centuries with no history of recorded fatalities and with no lethal dosage ever discovered; and

Whereas, Cannabis therefore fulfills none of the required three criteria (all of which are required) to maintain its current restriction as a Schedule I substance...

The Hawai‘i Medical Association recommends that Medical Cannabis be re-scheduled to a status that is either equal to or less restrictive than the Schedule III status of synthetic THC (Marinol[®]), so as to reduce barriers to needed research and to humanely increase availability of cannabinoid medications to patients who may benefit.”²⁰

Medical cannabis remains controversial mainly because the federal government refuses to recognize cannabis as an accepted medication. To this we would echo the words of Melanie Thernstrom in her excellent book *The Pain Chronicles*,² “How could treating pain be controversial?” one might ask, “ Why wouldn’t it be treated? Who are the opponents of relief?”

Conclusions

Cannabis is an extremely safe and effective medication for many patients with chronic pain. In stark contrast to opioids and other available pain medications, cannabis is relatively non-addicting and has the best safety record of any known pain medication (no deaths attributed to overdose or direct effects of medication). Adverse reactions are mild and can be avoided by titration of dosage using smokeless vaporizers.

More research needs to be pursued to discover degrees of efficacy in other areas of promise such as in treating anxiety, depression, bipolar disorder, autism, nausea, vomiting, muscle spasms, seizures, and many neurologic disorders. Patients deserve to have cannabis released from its current federal prohibition so that scientific research can proceed and so that physicians can prescribe cannabis with the same freedom accorded any other safe and effective medications.

Conflict of Interest

None of the authors identify a conflict of interest.

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Dr. Webb graduated from Dartmouth Medical School (BS Medicine) and from UC San Francisco School of Medicine (MD 1974). General Residency US Public Health Hospital (San Francisco) and Highland Hospital (Oakland). Emergency Medicine Physician 1975-2006 (Colorado), Urgent Care Physician 2007-present (Kailua Kona). Sandra Webb RN, since 1979 (emergency and radiology nurse). Dr. Webb and nurse Webb have been certifying patients for medical use of cannabis since 2009.

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