

## Medical Cannabis Use Is Associated With Decreased Opiate Medication Use in a Retrospective Cross-Sectional Survey of Patients With Chronic Pain

Kevin F. Boehnke,<sup>\*</sup> Evangelos Litinas,<sup>†</sup> and Daniel J. Clauw<sup>‡,§</sup>

<sup>\*</sup>Department of Environmental Health Sciences, School of Public Health, University of Michigan, Ann Arbor, Michigan.

<sup>†</sup>Om of Medicine, Ann Arbor, Michigan.

<sup>‡</sup>Departments of Anesthesiology, Medicine (Rheumatology), and Psychiatry, Medical School, University of Michigan, Ann Arbor, Michigan.

<sup>§</sup>Chronic Pain and Fatigue Research Center, Medical School, University of Michigan, Ann Arbor, Michigan.

**Abstract:** Opioids are commonly used to treat patients with chronic pain (CP), though there is little evidence that they are effective for long term CP treatment. Previous studies reported strong associations between passage of medical cannabis laws and decrease in opioid overdose statewide. Our aim was to examine whether using medical cannabis for CP changed individual patterns of opioid use. Using an online questionnaire, we conducted a cross-sectional retrospective survey of 244 medical cannabis patients with CP who patronized a medical cannabis dispensary in Michigan between November 2013 and February 2015. Data collected included demographic information, changes in opioid use, quality of life, medication classes used, and medication side effects before and after initiation of cannabis usage. Among study participants, medical cannabis use was associated with a 64% decrease in opioid use (n = 118), decreased number and side effects of medications, and an improved quality of life (45%). This study suggests that many CP patients are essentially substituting medical cannabis for opioids and other medications for CP treatment, and finding the benefit and side effect profile of cannabis to be greater than these other classes of medications. More research is needed to validate this finding.

**Perspective:** This article suggests that using medical cannabis for CP treatment may benefit some CP patients. The reported improvement in quality of life, better side effect profile, and decreased opioid use should be confirmed by rigorous, longitudinal studies that also assess how CP patients use medical cannabis for pain management.

© 2016 by the American Pain Society

**Key words:** Medical cannabis, opioids, chronic pain, side effects.

**C**hronic pain (CP) is among the most common and expensive medical conditions, affecting >100 million Americans, and with total direct and indi-

rect costs of up to \$635 billion per year.<sup>8</sup> Despite their high prevalence, treatment of CP conditions is difficult. Treatments for CP conditions often require incremental lifestyle changes (exercise, sleep hygiene, stress reduction) and repeated doctor visits to monitor changes, which is increasingly challenging in the current economic and medical climate.<sup>14</sup> Furthermore, other potentially efficacious therapies (eg, cognitive behavioral therapy and complementary approaches) are not often covered by insurance. Finally, opioids—one of the most common medication used to treat CP—are ineffective for many types of CP, as well as being addictive and associated with significant morbidity and mortality.<sup>1</sup> Indeed, opioids are the most common prescription drug implicated in overdose deaths, involved in up to 75% of overdoses, and estimated to be responsible for at least 17,000 deaths annually.<sup>10</sup>

Received December 4, 2015; Revised February 23, 2016; Accepted March 7, 2016.

Dr. Clauw has performed consulting services for and/or served on scientific advisory boards of Pfizer, Lilly, Forest Laboratories, Johnson & Johnson, Purdue Pharma, Nuvo, Cerephex, Tonix, Iroko, Takaeda, Cerephex, IMC, Zynerva, and Samumed. He has received grant support from Pfizer, Forest, Merck, Nuvo, and Cerephex. Dr. Litinas is the Chief Medical Officer at Om of Medicine, a medical cannabis dispensary in Ann Arbor, Michigan.

Mr. Boehnke reports no conflicts of interest.

Address reprint requests to Daniel J. Clauw, MD, University of Michigan, 24 Frank Lloyd Wright Dr, PO Box 385, Ann Arbor, MI 48106. E-mail: [dclauw@med.umich.edu](mailto:dclauw@med.umich.edu)

1526-5900/\$36.00

© 2016 by the American Pain Society

<http://dx.doi.org/10.1016/j.jpain.2016.03.002>

Because of problems with the current treatment of pain, many patients and some providers have begun to re-examine the potential role for cannabis or cannabinoids for treating CP. Because there are no synthetic cannabinoids approved for treatment of CP in the United States, the most available form of cannabinoids for most patients is cannabis purchased from dispensaries or illegally. Cannabis has been legal in parts of the United States since 1996 for treatment of multiple conditions, including CP.<sup>12</sup> Randomized controlled trials have examined whether cannabis, cannabis extracts, or synthetic cannabinoids are efficacious in CP states, with a recent meta-analysis suggesting that there is moderate evidence that some types of CP states may be improved by use of cannabinoids.<sup>15</sup> In contrast, there have been relatively few studies of the effectiveness of cannabinoids in real-life settings. A study out of the Netherlands suggested that 53% of registered cannabis users consumed cannabis for enhanced pain control<sup>7</sup> although other studies have described uncertain efficacy for CP treatment.<sup>6</sup> Interestingly, legalization of medical cannabis was associated with a mean 24.8% decrease in opioid overdose deaths in multiple states across the United States.<sup>2</sup> Although suggestive that cannabis could act as a replacement or alternative for opioids, this finding was on an ecological level, so changes at an individual level could not be gauged.

In our current study, we surveyed medical cannabis cardholders in Michigan, who must receive a certification from a licensed physician that they have a condition deemed by the statute to justify cannabis use (eg, CP) to obtain their permit. We hypothesized that many cannabis users were using cannabis for CP reduction and as a substitute for opioids. We further hypothesized that we may find some evidence that cannabis was reported to be more effective for CP that is “centralized” in nature. By centralized in nature, we mean individuals in whom the central nervous system is playing a greater role in pain, which we have previously shown is associated with decreased responsiveness to opioids.<sup>3,4,9</sup> This is plausible because meta-analyses that have examined the efficacy of cannabinoids in neuropathic and centralized pain states have suggested that these compounds are generally efficacious,<sup>13,15</sup> whereas there is far less evidence for efficacy in nociceptive pain states.<sup>16</sup> Thus, we hypothesized that individuals with higher scores on the 2011 Survey Criteria for fibromyalgia—a continuous measure that can be used to diagnose fibromyalgia as well as to determine the degree of pain centralization in CP states<sup>13</sup>—would show better overall pain relief with cannabis compared with those using cannabis for CP with lower scores on this measure. If this were to be true, then this would provide very preliminary evidence that cannabis might be a more effective treatment of centralized or neuropathic pain states than opioids, a finding in line with recent meta-analyses of the effects of cannabis in randomized controlled trials in various pain conditions.<sup>13,15</sup>

## Methods

Survey distribution was carried out in collaboration with owners of a local medical cannabis dispensary in Ann Arbor, Michigan, who helped recruit registered medical cannabis patients (18 years of age and older) to take the survey through the Qualtrics (Provo, UT) online survey platform. Study participants were enrolled between November 2013 and February 2015. Participant anonymity was maintained.

The survey contained 46 questions, detailing the medical condition(s) for which cannabis was used, method/frequency of cannabis use, changes in noncannabis medication use, changes in medication side effects, quality of life changes since starting cannabis use, and demographic information. As part of the survey, all participants completed the 2011 Fibromyalgia Survey Criteria (FM score), which gives a score from 0 to 31, with 31 indicating the most severe FM pain.<sup>16</sup> This value indicates a participant's FM score at the time of the survey, rather than their FM score before initiation of cannabis use. Survey questions of interest are shown in [Table 1](#).

## Statistics

The study population was examined using descriptive statistics. To ensure that no important information was missed by limiting analyses to fully completed questionnaires, sensitivity analyses were performed on the entire set of questionnaires, questionnaires that were  $\geq 60\%$  complete,  $\geq 80\%$  complete, and those that were fully completed ([Table 2](#)). There were very little differences between the outcomes, so analysis was limited to questionnaires that were fully completed. FM scores of participants were stratified into quartiles to examine whether degree of pain centralization was associated with outcomes of interest. Relationships between FM score quartile, opioid use change, quality of life change, when the study participant began using cannabis, and medication side effects were examined using Pearson correlation test. Student t-tests were used to examine whether cannabis use affected the number of medication classes (eg, opioids, nonsteroidal anti-inflammatory drugs, selective serotonin uptake inhibitor, disease modifying antirheumatic drugs, etc) taken, medication side effects, and paired t-tests were used to evaluate changes in these variables before and after initiation of cannabis use. Analysis of variance tests were used to examine whether changes in quality of life or opioid use were associated with FM score.

All analyses were carried out in R Studio version 0.98.1103 (R-Tools Technology Inc, Richmond Hill, Ontario, Canada).

## Ethics Statement

This study was exempted from institutional review board oversight under protocol HUM00079724 at the University of Michigan. Participants freely consented to participate in the study, and were able to drop out at any time.

Download English Version:

<https://daneshyari.com/en/article/2733383>

Download Persian Version:

<https://daneshyari.com/article/2733383>

[Daneshyari.com](https://daneshyari.com)