

Medical Cannabis Use Reduces Opioid Prescriptions in Patients with Chronic Back Pain

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INTRODUCTION:

Opioids are routinely prescribed for the treatment of chronic pain, including chronic back pain, despite the opioid epidemic. Their use has shown small improvements in pain, physical functioning, and sleep quality, at the cost of dose-dependent risks of substance abuse disorders, addiction, overdose, and death. Alternate therapies for chronic pain are needed in order to mitigate these adverse outcomes and reduce societal problems related to opioid use. Medical cannabis (MC) has shown efficacy in treating chronic pain, but there is limited evidence to show that MC can affect opioid use. This study investigates whether the use of MC in patients with chronic musculoskeletal noncancer back pain can reduce opioid usage. The study hypothesis was that MC certification and use for chronic low back pain would result in decreased opioid prescriptions filled.

METHODS:

Data regarding filled opioid prescriptions was gathered from a Prescription Drug Monitoring Program (PDMP) system for patients with a diagnosis of chronic musculoskeletal noncancer back pain who were certified for MC access between February 2018 through July 2019. Average morphine milligram equivalents (MME) per day of opioid prescriptions filled within the six months prior to access to MC was compared to that the six months after obtaining access to MC. Patient demographic information was collected as well as visual analogue scale (VAS) back pain score, numeric back pain intensity, numeric back pain frequency, VAS right leg pain score, VAS left leg pain score, numeric leg pain frequency, numeric leg pain intensity, and Oswestry Disability Index (ODI) scores. Statistics were calculated using a paired, two-tailed T-test for paired data and a two-tailed T-test with unequal variance for non-paired data.

RESULTS:

There was a significant decrease in overall average MME/day after MC prescription from 15.1 to 11.0 (n=186, p<0.01). The percentage of patients who dropped to 0 MME/day was 38.7%. Subanalysis of patients who started at less than 15 MME/day and greater than 15 MME/day show significant decreases from 3.5 to 2.1 (n=134, p<0.01) and 44.9 and 33.9 (n=52, p<0.01), respectively (Figure 1). Percentage of patients who dropped to 0 MME/day in those groups were 48.5% and 13.5%, respectively (Figure 2). Patient pain intensity, frequency, and daily function were improved compared to baseline at 3-, 6-, and 9-month timepoints post MC certification (Figure 3). Patients who used only a single administration route showed an insignificant decreased in MME/day from 20.0 to 15.1 (n=68, p=0.054), while patients who used two or more routes showed a significant decrease from 13.2 to 9.5 (n=76, p<0.01) (Figure 4).

DISCUSSION AND CONCLUSION:

Access to MC reduced opioid use for patients with chronic back pain. Patients with lower baseline opioid use have a better chance of stopping opioid use altogether. Pain and daily functional scores improved compared to baseline. The use of multiple routes of administration of MC simultaneously is more strongly associated with reduced opioid utilization.

FIGURE 4: Patients on more than one route of administration show decreased opioid usage post MC certification. Patient on a single route of administration (A) showed an insignificant drop in MME/day from 20.0 to 15.1 (n=68, p=0.054). Patients on two or more routes of administration (B) showed a drop from 13.2 to 9.5 (n=76, **p<0.01). Patients on a single route of administration and patients on two or more routes of administration had a 29.4% and 39.5% drop to 0 rate, respectively (C).

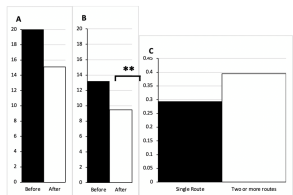


FIGURE 1: Opioid group shows decreased opioid prescriptions filled post MC prescription. All patients on opioids (A) showed a drop in MME/day from 15.1 to 11.0 (n=186, **p<0.01). Patients below 15 MME/day (B) showed a drop from 3.5 to 2.1 (n=134, **p<0.01). Patients above 15 MME/day pre-MC (C) showed a drop from 44.9 to 33.9 (n=52, **p<0.01).

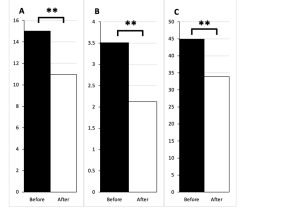


Figure 3: Pain and ODI scores decrease from baseline following MC certification. Average patient scores were measured at baseline (n=100) and at 3-, 6-, and 9-months (n=23) following MC certification. Back pain score decreased significantly from 7.3 at baseline to 5.1 (**p<0.01), 5.3 (**p<0.01), and 5.2 (**p<0.01) at 3-, 6-, and 9-months, respectively (A). Right leg pain score decreased significantly from 3.4 to 3.0, 2.8, and 2.6 (A). Left leg pain score decreased significantly from 3.5 to 3.1 at 3-months and 2.4 at 6-months and decreased significantly to 2.0 (**p<0.01) at 9-months (A). Back pain intensity score decreased significantly from 7.5 to 6.9 (**p<0.01), 5.4 (**p<0.01), and 5.7 (**p<0.01) at 3-, 6-, and 9-months, respectively (B). Leg pain intensity score decreased significantly from 3.3 to 2.4 at 3-months and decreased significantly to 1.1 (**p<0.01) at 6-months and 1.1 (**p<0.01) at 9-months (B). Back pain frequency decreased significantly from 7.8 to 6.6 (**p<0.01), 6.2 (**p<0.01), and 5.6 (**p<0.01) at 3-, 6-, and 9-months, respectively (C). Leg pain frequency decreased significantly from 3.0 to 2.7 at 3-months and 2.2 at 6-months and decreased significantly to 1.1 (**p<0.01) at 9-months (C). ODI score decreased significantly from 47.2 to 39.3 (**p<0.01), 38.1 (**p<0.01), and 39.4 (**p<0.01) at 3-, 6-, and 9-months, respectively (D). Error bars represent standard error.

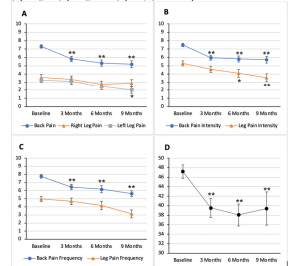


FIGURE 2: All patients on opioids, patients below 15 MME/day, and patients above 15 MME/day had a 38.7%, 48.5%, and 13.5% drop to 0 rate, respectively.

