Medical Cannabis Use Reduces Opioid Prescriptions in Patients with Osteoarthritis

Bryan Renslo, Ari Greis[1], Kyle Plusch, Asif M Ilyas
[1]Rothman Institute

INTRODUCTION:

Osteoarthritis (OA) can result in significant pain often requiring pain management with opioids. Medical cannabis (MC) has potential as being an alternative to opioids for chronic pain conditions. MC has been shown to be effective in treating orthopaedic pain when compared to a placebo, however studies have yet to show efficacy when compared to active comparator. This study focused on the association between MC use and opioid utilization for the management of chronic pain due to OA. The study hypothesis was that MC used in the management of OA related chronic pain can reduce opioid utilization.

METHODS:

Data regarding filled opioid prescriptions was gathered from a state Prescription Drug Monitoring Program (PDMP) system for patients with a diagnosis of OA who were certified for MC 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 of the six months after. Primary study outcome measures consisted of the change in opioid prescriptions filled pre- and post-MC certification and use. Patient outcome measures were collected at baseline and at 3-, 6-, and 9-months post-MC using the Patient-Reported Outcomes Measurement Information System (PROMIS) questionnaire and included visual analog scale (VAL) pain score, Global Mental Health (GMH) quality of life (QOL) score, and Global Physical Health (GPH) QOL score. Data on route of MC administration was gathered during the 3-6 month follow-up visit and retrospectively collected and analyzed. 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 average MME/day of prescriptions filled by patients following MC access from 18.2 to 9.8 (n=40, $p<0.05$) (Figure 1). The average drop in MME/day was 46.3%. The percentage of patients who dropped to 0 MME/day was 37.5%. Pain score decreased significantly from 6.6 (n=36) to 5.0 (n=26, $p<0.01$) and 5.4 (n=16, $p<0.05$) at 3- and 6-months, respectively. Global Physical Health score increased significantly from 37.5 to 41.4 ($p<0.05$) by 3-months (Figure 2). Various routes of MC administration were used including vaporized oil, vaporized flower, oral, topical, and sublingual tincture. We collected data on route of MC administration for 33 (82.5%) of the patients. Of those patients, 21 patients (63.6%) used only a single route, 11 patients (33.3%) used two routes, 1 patient (3.0%) used three routes. The most commonly used route of administration was sublingual tincture (n=22, 66.7%) followed by topical (n=11, 33.3%), vaporized oil (n=7, 21.2%), oral (n=3, 9.1%), and vaporized flower (n=3, 9.1%) (Table 1).

DISCUSSION AND CONCLUSION:

Access to MC reduced opioid prescriptions for patients with chronic pain from OA. Over one third of patients no longer required opioids after MC certification. Pain and QOL scores improved following MC certification.

FIGURE 1: Opioid group shows decreased opioid prescriptions filled post MC prescription. All patients on opioids showed a drop in MME/day from 18.2 to 9.8 (n=40, *p<0.05).

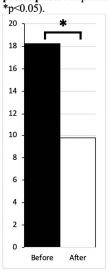

Figure 2: Pain and QOL scores are improved following MC prescription. Visual Analog Scale (VAS) pain score, Global Mental Health (GMH), and Global Physical Health (GPH) were measured at baseline (n=36) and at 3- (n=26), 6- (n=16), and 9-months (n=5) following MC certification. VAS pain score decreased significantly from 6.6 at baseline to 5.0 (**p<0.01) at 3-months and 5.4 (*p<0.05) at 6-months (A). GMH increased insignificantly from 45.2 to 48.1 (p=0.17) at 3-months and 47.4 (p=0.42) at 6-months (B). GPH increased significantly from 37.5 to 41.4 (*p<0.05) at 3-months at increased insignificantly to 40.0 (p=0.18) at 6-months (B).

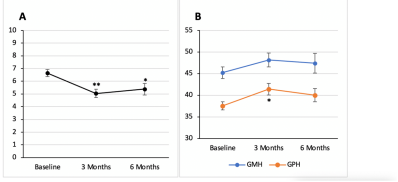

TABLE 1: Number of patients using each MC route of administration.

Route of Administration	N	%
Sublingual Tincture	22	66.7%
Topical	11	33.3%
Vaporized Oil	7	21.2%
Oral	3	9.1%
Vaporized Flower	3	9.1%