

# Medical cannabis as an alternative for opioids for chronic pain: A case report

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## Abstract

Opioid medication-related deaths have increased to epidemic proportions in the last decade. This report describes a case of 43-year-old female with a traumatic brain injury who developed chronic pain and opioid dependence. The patient expressed concerns and wanted weaning off opioids. Recent legalization of medical marijuana in Pennsylvania allows us to try it as an alternative to opioids for chronic pain. Medical cannabis has risks associated with administration but is safer than opioids. Our patient was successfully weaned off her opioid medications with the help of medical cannabis and pain remained well controlled. More studies need to be done on using medical cannabis as an alternative to opioids.

## Keywords

Orthopedics/rehabilitation/occupational therapy, anesthesia/pain, marijuana, opioid

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## Introduction

Opioid use for pain has increased over the last decade. Rates of opioid-related deaths have also increased fourfold in this time frame.<sup>1</sup> This country-wide epidemic has even prompted the Centers for Disease Control and Prevention to put out new opioid-prescribing guidelines for primary care physicians.<sup>2</sup> In this case report, the patient is able to wean off her opioids safely using medical cannabis as an alternative to opioids for chronic pain.

## Case report

This study describes a case of a 43-year-old female with a history of traumatic brain injury secondary to a motor vehicle accident in June 2004. The patient had no history of psychiatric illness. She sustained multiple fractures, including a right-sided occipital fracture, C2 fracture, right scapula fracture and multiple rib fractures. She presented to our outpatient clinic complaining of right-sided headaches and neck and shoulder pain. She complained of pain which was 8/10 on the visual analog scale (VAS) in her neck, right shoulder and right side of the head. She described pain as a tight vice like gripping with paresthesias. The pain was alleviated by heat and massage and aggravated by increased activity and sleep. She was taking morphine 30mg two times per day. She was followed in our clinic for 14 years and was trialed on

multiple medications such as Flexeril, gabapentin and Elavil, which did not give her relief. She was also increased on her narcotic pain medications. She was placed on MS Contin 45mg two times per day and morphine immediate-release 30mg two times per day for breakthrough pain. This was equal to 150 morphine milligram equivalents (MME) per day. The pain was controlled with narcotic pain medications for over 10 years. She states the medications decreased her pain from 8/10 on the VAS to 4/10 on the VAS.

Over the years, the patient expressed her concerns about becoming addicted to narcotic pain medication. On 6 April 2016, the state of Pennsylvania legalized medical cannabis, and on 15 February 2018 medical cannabis became available for patients in Pennsylvania. The patient was educated on medical cannabis as an alternative to opioid medications. We came up with a weaning protocol. We first decreased the long-acting MS Contin by 15mg per week until she was only on morphine immediate-release. She did complain of some increased pain and withdrawal symptoms such as chills and diarrhea but was able to wean off in 1 month. Once off the

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**Table 1.** Medical marijuana approved diagnosis in the state of Pennsylvania.

A “serious medical condition” under the law is any one of the following:

- Amyotrophic lateral sclerosis;
- Autism;
- Cancer, including remission therapy;
- Crohn’s disease;
- Damage to the nervous tissue of the central nervous system (brain-spinal cord) with objective neurological indication of intractable spasticity, and other associated neuropathies;
- Dyskinetic and spastic movement disorders;
- Epilepsy;
- Glaucoma;
- HIV / AIDS;
- Huntington’s disease;
- Inflammatory bowel disease;
- Intractable seizures;
- Multiple sclerosis;
- Neurodegenerative diseases;
- Neuropathies;
- Opioid use disorder for which conventional therapeutic interventions are contraindicated or ineffective, or for which adjunctive therapy is indicated in combination with primary therapeutic interventions;
- Parkinson’s disease;
- Post-traumatic stress disorder;
- Severe chronic or intractable pain of neuropathic origin or severe chronic or intractable pain;
- Sickle cell anemia; and/or
- Terminal illness.

Source: Department of Health State of Pennsylvania.<sup>5</sup> Copyright © 2019 Commonwealth of Pennsylvania.

long-acting narcotic medications, we began to decrease her immediate-release medications. In the next week, we decreased her immediate relief morphine from 60 mg daily to 30 mg daily or 60 MME to 30 MME. We then started her on medical cannabis. She began using the medical cannabis product called Harlequin 500 mg which had a 2:1 cannabidiol (CBD) to tetrahydrocannabinol (THC) ratio in the vape form. It had 26.3% CBD and 17% THC. These are divided into 2.5 mg doses per inhalation. She stated that with two vape inhalation per day, her pain decreased from 8/10 on the VAS to 2/10. She was able to completely wean off her opioid narcotics and reported no side effects from the medical cannabis. At her 6-month follow-up, she continued to have excellent relief. We confirmed the patient was not on any opioids with a follow-up urine drug screen at 6 months which showed no opioids in her system and was positive for cannabis.

## Discussion

The use of opioids for chronic pain has questionable benefits. Over the last decade, opioid use for pain has increased at an alarming rate.<sup>3</sup> There has also been an increase in the rate of opioid-related deaths in the population.<sup>4</sup> This has prompted the Centers for Disease Control and Prevention to publish new opioid-prescribing guidelines. Around the same time, the state of Pennsylvania approved marijuana for medicinal purposes. There are multiple diagnoses that qualify patients for medical cannabis in the state of Pennsylvania (see Table 1).<sup>5</sup> One of these diagnoses is for opioid use disorder for which conventional therapeutic interventions are contraindicated or

ineffective or for which adjunctive therapy is indicated in combination with primary therapeutic interventions.

Marijuana contains more than 60 pharmacologically active cannabinoids.<sup>6</sup> Marijuana contains two primary cannabinoids THC and CBD. THC produces the psychoactive effects that recreational marijuana users seek but can also produce psychosis. The CBD works on the 5-HT1a receptors in the brain and is not considered to be psychoactive but can affect your mood. It also has anti-inflammatory effects.<sup>7</sup> Marijuana’s therapeutic effects are dependent on the proper THC:CBD ratio for each individual patient. As a result, many different strains with different ratios have been created to help mitigate patient symptoms.

Vaping is one of the most common forms of ingesting of medical cannabis. However, when heating the THC or CBD products to its active form, the conversion efficiency may not be 100%, which means the actual amount of THC or CBD one consumes may be less than the concentration on the product label.<sup>8</sup> This should be taken into consideration when dosing in the vape form.

Medical cannabis has many potential benefits but also many risks. The acute effects of medical cannabis may impair judgment, coordination and even memory. It can affect driving and reaction time and double the risk of involvement in a motor vehicle crash.<sup>9</sup> Medical cannabis can cause psychosis and paranoia especially in young patients whose brains are underdeveloped. It can be addictive and is associated with increased risk of anxiety and depression.<sup>10</sup> It can also worsen these conditions. The long-term use can increase incidence of chronic bronchitis and increase risk of respiratory tract infections and

pneumonia. Medical cannabis also has withdrawal effects if stopped abruptly. These include anxiety, irritability, cravings, dysphoria and insomnia.

## Conclusion

Medical marijuana has a potential to help treat patients with chronic pain. It is being used more and more by physicians for multiple reasons. The marijuana laws are also constantly changing, and physicians need to keep up with federal and state laws when recommending medical marijuana. There are multiple benefits and risks of using marijuana for medicinal purposes. With more states enacting medical marijuana laws, it is important for physicians to provide more evidence-based studies showing the effectiveness of marijuana for pain.

## Author's Note

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## Informed consent

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