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Breanna Joy Privratsky
University of North Dakota

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Cannabinoid Therapy in Chronic Pain Management

Breanna J Privratsky, PA-S
Department of Physician Assistant Studies, University of North Dakota School of Medicine & Health Sciences
Grand Forks, ND 58202-9037

Abstract

In 1996, the state of California was the first in the union to allow for the use of medical marijuana. Since then, 28 more states have enacted similar laws (National Conference of State Legislatures, [2013]). As of 2014, the CDC reported opioid deaths were up 369%, which is more than 91 deaths per day from overdoses (Centers for Disease Control, [CDC], 2017). The purpose of this study is to compare medical marijuana to narcotics in safety and addiction; in addition, the efficacy of using cannabinoids as an alternative for individuals who deal with chronic pain will be investigated.

Introduction

Cannabis, cannabinoids, and medical marijuana all encompass a topic that is highly controversial, as well as a lack in scientifically based research for chronic pain therapy. The Food and Drug Administration (FDA) has approved three different cannabinoid-based products that are currently being used for various medical issues, such as Dronabinol (Marinol®) and Nabilone (Cesamet®). Limited amounts of research have been conducted due to the Drug Enforcement Administrations (DEA) schedule of cannabis as a Schedule 1 drug.

Chronic pain is also a highly discussed topic due to the difficult nature of finding proper therapy to improve overall quality of life. Patients who deal with chronic pain are often left with prescription opiates for pain management, all of which have adverse effects. Authors Feingold, Goo-Aryeh, Bell, Delayahu, and Lev-Ran (2017) state long-term management with opiate side effects can be a major factor for addiction. In short, it is important to develop a medication that can alleviate chronic pain while taking into account the possible side effects.

Statement of the Problem

According to Boekhout, Litinas, and Clower (2016), opiates are one of the most commonly used medications to treat chronic pain. With that notion, opiate use has also become a major trend in the United States, which states that 32% of all drug abuse screen for pain. This is why cannabinoids are such an interesting alternative for chronic pain management.

Research Questions

• Is medical cannabis safe to use for chronic pain? What are the documented adverse effects associated with using this medication?
• How addictive is medical cannabis compared to other addictive substances? What addictive qualities are associated with starting this medication?
• What has been shown to be more effective in the treatment of chronic pain, medical cannabis or opiates?

Literature Review

Cannabinoids for Chronic Pain: Safety and Adverse Events

Witting et al. (2015) found in eight of the 28 studies, patients who reported at least 30% decrease in pain were those who used cannabinoids rather than those who used a placebo (OR = 1.41; 95% CI 0.99-2.00). They also found common adverse events that included dizziness, dry mouth, nausea, fatigue, hallucinations, drowsiness and confusion. Results found by Ware, Wang, Shapiro, and Collet (2015), showed medical cannabis users were at increased risk of non-serious adverse events, 818, ranging from mild to moderate events such as: headache, naopraphygia, nausia, somnolence, and dizziness compared to the 581 events documented in the control (IRR = 1.64, 95% CI = 1.35-1.99). Overall, individuals in the medical cannabis group experienced better pain control than the control (change = 92, 95% CI = 62-123 vs change = 18, 95% CI = 13).

Nagert et al. (2017) found no detection of significant differences between the cannabis group compared to the control group when it came to serious adverse events (IRR = 1.08; 95% CI = 0.57-2.04). This study did evaluate long-term effects associated with cannabis use and found it to be associated with cannabis hyperemesis syndrome as well as incident cannabis use disorder (OR = 9.5; 95% CI = 6.4-14.1).

Comparison of Addictive Substances to Cannabis

Feingold, Goo-Aryeh, Bell, Delayahu, and Lev-Ran (2017) studied whether or not these patients were more apt to abuse opioids or medical cannabis. Figure I shows the results.

Richter, Pugh, Smith, and Ball (2016) examined alcohol, marijuana, as well as other illicit drugs and prescription drugs as possible correlates to nicotine product use. Results revealed any kind of nicotine use, co-occurring use with other substances was documented (79.4% alcohol = 11.5; 95% CI = 8.4-12.9; 59.7% marijuana (OR = 12.7; 95% CI = 9.5-16.8); 53.9% poly-substance use (OR = 15.5; 95% CI 11.4-21.0); 18.8% prescription drugs (OR = 8.3; 95% CI = 5.4-12.8); 8.5% other illicit drugs (OR = 19.1; 95% CI = 9.0-40.6).

Research Review Contd.

• Medical Cannabis vs Opiate Efficacy

Goldenberg, Reid, Ildfak, and Danovich (2017) found cannabis use for increased health-related quality of life (HRQoL) had vague results and most effects were non-significant or near zeroing. Some reports showed a mild benefit in some pain conditions while in others there was a decrease in HRQoL.

Narang, Gibson, Wasun, Ross, Michna, Nedeltjovck, and Jamison (2008) conducted two phases and found Dronabinol in Phase I had significant pain relief after 8 hours per the total pain relief at 8 hours score (TOTPAR), (20 mg vs placebo at p < .01, 10 mg vs placebo at p < .05). For adjunctive therapy in Phase II, dronabinol proved to have a significant effect in lowering pain from baseline (p < .001), decreasing pain bothersomeness, as well as increased satisfaction in their therapy (p < .01).

Boekhout, Litinas, and Clower (2016) evaluated the efficacy of medical cannabis compared to opiates in chronic pain patients. Figure II highlights the changes before and after cannabis use.

Discussion

The National Institutes of Health (NIH) has supported around 281 projects totaling over $1 billion on cannabis research, 49 projects ($21 million) examined therapeutic properties of cannabinoids, and 15 projects ($9 million) focused on (CBRD).

Medical cannabis has multiple adverse events similar to other drugs. Limited amounts of research have been conducted due to the Drug Enforcement Administrations (DEA) schedule of cannabis as a Schedule 1 drug. Medical cannabis has also been shown to be effective for other medical conditions such as fibromyalgia, neuropathy, multiple sclerosis, cystic fibrosis, migraines and gastrointestinal conditions.

Applicability to Clinical Practice

• It is difficult to find effective treatments for chronic pain, but having multiple therapy modalities increases the likelihood of controlling pain.
• Alternative therapies will aid in alleviating the current opiate epidemic.
• Medical cannabis has also been shown effective for other diseases such as fibromyalgia, neuropathy, multiple sclerosis, cystic fibrosis, migraines and gastrointestinal conditions.

Conclusion

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