CANNABIS AND CHRONIC PAIN

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Overview of Pain:

According to the U.S. Department of Health and Human Services, 47,200 Americans lost their lives in 2017 from opioid overdoses.[1] While this statistic is no doubt haunting, it does pose an essential question of why there are so many people using opioids in the first place? The answer lies in the fact that opioid medications are designed to fight pain without a clear definition of precisely what kind of pain people are hoping to treat.

Pain is a fundamental variable of life on Earth. For humans, this can take the form of acute or chronic pain, both of which are alleviated by opioids. In the 1990s pharmaceutical companies assured the healthcare industry that opioids were non-addictive medications that could be prescribed safely with increasing frequency.[1] Traditionally, these medications were used to treat acute pain which is severe or sudden pain is generally resolved in a short amount of time, such as a broken bone. Pharmaceutical companies advocated for the use of opioids in the treatment of chronic pain, which is persistent and lasts for long periods of time. This transition caused more people to receive opioid prescriptions and continued those prescriptions for more extended periods. This transition helped fuel the epidemic we see today.

Physical pain is the result of our bodies "pain detection" system, which is made up of peripheral nerves called nociceptors (no-sih-SEP-turs). When these "pain detectors" get a signal, either by tissue or nerve damage, they relay the message via the spinal cord. The brain receives these messages, which are influenced by our personalities and environments.[2] Pain is something that cannot be ignored. Chronic pain patients need safer alternatives to opioids because we have seen first hand, in our homes and communities, what they have done. By initially offering safer alternatives and using opioids only as a last resort for chronic pain, we may be able to help reduce the overdose and addiction epidemic we are currently experiencing as a society.

The Endocannabinoid System and Chronic Pain:

The endocannabinoid system regulates pain through its effects on the nervous systems. The endocannabinoid anandamide is released in the brains key pain regulating region and results in CB1 receptor activation, providing analgesic effects. This release leads to the suppression of both neuropathic and inflammatory pain-related behavioral responses.[3] CB2 receptors also play a crucial role in chronic pain by suppressing pain sensation. The activation of CB2 receptors inhibits the production of pain neurotransmitters while providing analgesic effects for neuropathic pain as well.[3] Cannabinoids, such as THC and CBD, offer a way to stimulate the endocannabinoid system and tap into its pain-relieving power.

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[1] "What is the U.S. Opioid Epidemic?", 2019

[2] "Understanding Pain", 2019

[3] Lu & Anderson, 2017

Cannabinoids and Chronic Pain:

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Tetrahydrocannabinol - THC stimulates the endocannabinoid system through the activation of the CB1 and CB2 receptors similar to anandamide and other endocannabinoids. THC also can stimulate the production of beta-endorphin, which is a powerful pain suppressing hormone. THC is 20 times more anti-inflammatory than aspirin and 2 times more anti-inflammatory than hydrocortisone. When comparing THC and CBD together vs THC alone or CBD alone for pain relief, products containing THC showed the most pain benefit.[4]

Cannabidiol - CBD is the other cannabinoid that is discussed in relation to pain. It does not interact with the endocannabinoid receptors like THC but instead interacts with a variety of ion channels, enzymes, and other receptors within the brain and body. CBD has been shown to inhibit anandamide uptake and breakdown, increasing the efficacy of the endocannabinoid system. CBD's effects on the body's opioid system suggest that it may enhance the effects of opioids.[4]

Terpenes - Terpenes are the aromatic compounds responsible for the unique scents of cannabis. They can aid in pain relief on their own as well as synergistically with THC. For example, beta-caryophyllene has been demonstrated to provide relief from inflammatory and neuropathic pain. Myrcene acts as a muscle relaxant, pain reliever, and anti-inflammatory.[4] These are just two of over 200 terpenes commonly found in cannabis, some of which may be beneficial chronic pain patients.

Know Your Dose

Chronic pain is the most common qualifying condition for medical cannabis patients. Patients who make the transition from opioids to cannabis often feel as if they got their life back. A majority of them are able to come off opioids completely, lost a significant amount of weight, and feel more present in their lives and relationships. Below I have listed a few tips to help reduce the learning curve for using cannabis to help manage chronic pain.

1. THC is going to be the most effective cannabinoid for chronic pain. It is essential to use products that are easy to dose to maximize relief. Underconsumption can results in untreated symptoms, whereas over consumption can increase pain sensitivity and intensity.

2. CBD can enhance the effects of THC in reducing chronic pain symptoms as well as buffer against the adverse side effects of THC when consumed in large doses.[5] When first using cannabis, start with a 40:1 CBD to THC ratio and slowly add THC until the desired dose is achieved.

3. Look for products that include terpenes for increased efficacy and consistency. Notable terpenes that aid in pain relief are Myrcene and Beta-caryophyllene. Common strains with high concentrations of these terpenes include Granddaddy Purple, Blue Cheese, and Blue Dream.

4. Sleep is a vital component of managing chronic pain. Disordered sleep increases feelings of pain, suicidal ideation, and subsequent cognitive disorder.[6] Getting 7-9 hours of sleep should be a priority for chronic pain patients. Getting on a consistent sleep schedule, keeping the room as dark and as cold as possible, and avoiding screens an hour before bed can help improve sleep quality and duration.

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[4] Baron, 2018
[5] Casey, Atwal & Vaughan, 2017
[6] Owen-Smith et al, 2019