Marijuana in Pain Management

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Editorial

Marijuana, the magic herb, has always reaped the attention of public, medicals and scientists as well. Since ages, this herb was employed in multiple medicinal aspects from headache to surgery. The effects of the psychoactive properties verged with an undesirable side effects and the tolerance liability. It was first labelled as cannabinoids, in addition to terpenoids and flavonoids. It offers a set of advantages, compared to opiates. It lacks the un-preferable side effects and the tolerance liability. It was first traced when Davies et al. discovered that a distillate of Cannabis plant extract is more potent than morphine at intravenous administration to rats [2, 3].

There are other cannabinoids which are synthetic cannabinoids, such as nabilone, WIN55, 212-2, and ajulemic acid, that similarly bind to CBR and the endogenous cannabinoids or namely endocannabinoids, which are endogenously synthesized in the brain. A new class has been introduced, which include inhibitors of the endocannabinoid breakdown responsible enzymes (FAAH, MGL) [4].

Clinical reports showed the effectiveness of isolated THC in reducing pain sensation and even reports have shown that pain may be present at the same intensity but in less important and discomforting way. Chronic pain syndromes, such as multiple sclerosis and paraplegia were first approved to be treated with medical cannabis. Cannabinoids reduce nausea, vomiting, and appetite loss as well as pain. The euphoric effects could benefit people with anxiety-producing painful disorders such as AIDS or cancer [5-7].

It is implicated that the action of cannabinoids is receptor mediated centrally and peripherally, where CBRs are abundantly distributed in the nociceptive periaqueductal grey matter and along the spinal cord. Moreover kappa opioid receptors were found to be involved in the anti-nociceptive actions. Endocannabinoids are released in fear or stress conditions to suppress pain. Researchers have hypothesized that pathological pain can arise, at least in part, from a dysfunction of the endocannabinoid system.

The two major cannabinoids, THC and CBD, do not modulate COX-1 or COX-2 at therapeutic dosages so skipping the deleterious side effects of non-steroidal anti-inflammatory drugs (NSAIDS), e.g., gastrointestinal ulceration and bleeding. Besides, no abuse incidents were reported with the use of approved medications such as Sativex.

Currently, there are a number of approved medical cannabinoids either synthetic e.g. nabilone or cannabis extract (Sativex) or the active ingredient, THC (Marinol).

In the late nineties, seizure disorders like epilepsy and multiple sclerosis were introduced as cannabis-treatable conditions. It was until 2010 to be widely approved in many states and countries for multiple sclerosis, HIV/AIDS, cancer and spastic diseases. Parkinson disease and spinal cord tissue damage were added to the medical indications [8].

NMDA mediated pain conditions such as migraine could have benefit from cannabinoids, where THC was found to reduce NMDA response and NMDA-produced secondary hyperalgesia. Additionally, THC was demonstrated to stimulate β-endorphins thus acting by two different pathways. In addition, other cannabis constituents showed bonus pain reducing activities such as cannabichromene, cannabigerol, myrcene, or even aromatic terpenoids [9].

Relying on the fact that factors such as anxiety, mood, and personality can all influence pain intensity, cannabis can have an outstanding action in this perspective.
Cannabis was described in several self-reports as an effective treatment for headache and migraine. However, cannabis preparations are scheduled and kept as a last choice treatment for certain diseases at certain unresponsive pain stages. If to analyze the stacked evidences of the benefits of cannabis use and the sporadic reports of abuse or intoxication, it would be recommended to have this magic remedy for pain conditions as an earlier available choice. Pain-sufferers would have the chance to keep on mood in their lives and perform better, nonetheless, to have a comfortable state.
References

1 Mikuriya TH (1969) Marijuana in medicine: past, present and future. California Med 110: 34-40.

2 Martin BR, Cone EJ (1999) Chemistry and Pharmacology of cannabis. In: Kalant H, Corrigall WA, Hall W, Smart RG (eds.) The Health Effects of Cannabis. Addiction Research Foundation, Centre for Addiction and Mental Health, Toronto, pp: 19-68.

3 Davies OL, Ravento’s J, Walpole AL (1946) A method for the evaluations of analgesic activity using rats. Br J Pharmacol 1: 255-264.

4 Pertwee RG (2006) Cannabinoid pharmacology: the first 66 years. Br J Pharmacol 147: s163-s171.

5 Hazekamp A, Grotenhermen F (2010) Review on clinical studies with cannabis and cannabinoids 2005-2009. Cannabinoids 5: 1-21.

6 Narang S, Gibson D, Wasan AD, Ross EL, Michna E, et al. (2008) Efficacy of dronabinol as an adjuvant treatment for chronic pain patients on opioid therapy. J Pain 3: 254-264.

7 Ellis RJ, Toporoff W, Vaida F, van den Brande G, Gonzales J, et al. (2009) Smoked medicinal cannabis for neuropathic pain in HIV: a randomized, crossover clinical trial. Neuropsychopharmacology 34: 672-680.

8 Hill KP (2015) Medical Marijuana for Treatment of Chronic Pain and Other Medical and Psychiatric Problems: A Clinical Review. JAMA 313: 2474-2483.

9 Russo EB, Hohmann AG (2013) Role of Cannabinoids in Pain Management. In: Deer TR, Leong MS, Buvanendran A, Gordin V, Kim PS, et al. (eds.) Comprehensive Treatment of Chronic Pain by Medical, Interventional, and Integrative Approaches. American Academy of Pain Medicine, New York, pp: 185-189.