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Letter to the Editor

CANNABINOIDS FOR THE MANAGEMENT OF PAIN AND INFLAMMATION

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INTRODUCTION

The use of cannabinoids in the treatment of chronic pain is an important topic of discussion and research. Cannabis is effective in reducing chronic pain in many inflammatory diseases and improving quality of life. Patients with chronic pain often receive long-term opioid therapy, which places them at risk of opioid use disorder and overdose, and the use of medicinal cannabis in pain patients can reduce pharmacological treatment with opioids. Much scientific evidence reports that cannabidiol (CBD), a natural compound present in cannabis that is not addictive, reduces inflammation in patients with chronic pain mediated by microglia, which are more active in individuals suffering from pain (1, 2). CBD could act on microglia by reducing cellular activity, which could lead to the inhibition of pain.

DISCUSSION

When inhaled through smoking, cannabis is effective in reducing chronic pain in many inflammatory diseases and improving quality of life. However, cannabinoids are not effective for all types of pain. The oral route of administration of cannabinoids appears to be more effective than smoking. The use of opioids to relieve pain can be ineffective and therefore new analgesic solutions must be sought. It is not exactly known how medical cannabis may affect opioid use in the state of chronic pain (3). Discovering how medical cannabis can influence opioid use and pain would have great scientific and social value. The question that arises is whether cannabinoids can help patients to reduce the opioid dosage and improve their health in acute and chronic pain. Interesting articles report that the use of medicinal cannabis in pain patients can reduce pharmacological treatment with opioids. This helps clarify the beneficial effect of medical cannabis on chronic pain in patients treated with opioids.

Much scientific evidence reports that CBD, a natural compound present in cannabis that is not addictive, reduces inflammation in patients with chronic pain mediated by microglia, which are more active in individuals suffering from pain (4). CBD acts as an immunomodulator and could act on microglia by reducing cellular activity and inflammatory compounds, which could inhibit pain. In fact, CBD has been shown to have anti-inflammatory properties such as IL-6 inhibition and the activation of anti-inflammatory pathways of microglia (5, 6).

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CBD acts through the endocannabinoid system and reacts, albeit with poor affinity, with a series of receptors involved in neuroinflammatory pathologies and epileptic seizures. By acting on other sites, CBD can regulate the activation of neuropeptides. Cannabis probably interacts with numerous molecular targets responsible for neuroinflammation and epilepsy, although it is still unclear how. This pain-relieving molecule attenuates excessive excitability. The TRPV1 cannabinoid receptor binds CBD, which results in the release of glutamate, increased calcium flux, and modulation of convulsions in epilepsy. The activation of CBD on its receptor leads to desensitization with an improvement of health. In addition, in neurons, CBD blocks calcium channels which play a key role in the release of neuropeptides. CBD can also block some opioid receptors involved in neuroinflammatory activities, including pain.

CONCLUSIONS

Cannabinoids are natural compounds that are a viable and safer alternative to the use of opioids and other synthetic pharmacological drugs in treating chronic pain and inflammation. CBD is a non-addictive compound that can reduce inflammation (including neuroinflammation) and pain by inhibiting the activity of activated microglia.

Conflict of interest

The author declares that they have no conflict of interest.

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