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International Journal of Family & Community Medicine

Case Report

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Case report: CBD:THC medical cannabis in the treatment of neuropathic pain

Summary

Chronic neuropathic pain affects millions of adults worldwide, creating a direct impact on quality of life. The control of neuropathic pain is a challenge in daily clinical practice. Current pharmacological treatment options for neuropathic pain afford substantial benefit for only a few people, often with adverse effects that outweigh the benefits. There is a need to explore other treatment options, with different mechanisms of action for treatment of this pathology. The use of *cannabis* and cannabinoid products is a growing area of research for the treatment of different pathologies including neuropathic pain. The studies developed so far and what is observed in the clinical practice, demonstrate the importance of this medication in a pathology of such complexity and difficult control, besides of that, more randomized controlled studies are needed to confirm medical cannabis an adjunct medication in the treatment of neuropathic pain. This case report aims to demonstrate the validity of joining GMP cannabis products as an adjuvant therapy for an effective with low profile side effects treatment leading to an improvement in quality of life.

Keywords: THC; CBD; medical cannabis; neuropathic pain

Volume 8 Issue 3 - 2024

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Received: March 18, 2024 | **Published:** May 21, 2024

Introduction

SM, 48 years old, female

Major Complaint: "Intolerable pain in the right arm"

Current Illness history

The patient reports a fracture on her right wrist at the age of 26. She underwent conservative treatment without complications. Despite this, she subsequently developed Complex Regional Pain Syndrome with a pain intensity of 10 (Visual Analog Scale = VAS). At the time, she was treated with oral medication: amitriptyline, carbamazepine, morphine, buflomedil and Bier-type intravenous blockers, following the World Health Organization Ladder, according to current protocols. These treatments did not present satisfactory results, with gradual worsening of pain. Considering the evolution of the condition, she was subjected to different drug and non-drug therapies. She underwent psychiatric, psychotherapeutic, occupational therapy and nutritional counseling in a multidisciplinary approach, without success. She also underwent exploratory surgical procedures that resulted in ulnar nerve injury with worsening of her neuropathic symptoms and physical limitation. She underwent a total of 7 surgical procedures, including 2 sural nerve grafts, with no success and gradual worsening of the pain. The patient maintained a drug therapy according to international protocols for the treatment of chronic neuropathic pain, without adequate control of the neuropathic condition and with a significant worsening of her quality of life. She had adverse effects, often intolerable, with different medications, forcing her to have them discontinued. Despite the side effect of oxycodone (constipation), she maintains its use, since it relieves about 20% of the intensity of her pain. She underwent minimally invasive techniques such as Radiofrequency and spinal neurostimulation with a slight improvement in her daytime symptoms. With the evolution of the condition, she began presenting insomnia, depression and anxiety attacks. She retired due to disablement a few years ago, that led her to have further complications on an emotional level. Due to this evolution, the possibility of introducing Medicinal Cannabis as an adjuvant medication was suggested.

Daily doses of continuous use medication

Pregabalin 900mg; Carbamazepine 1600mg; Lamotrigine 25mg; Duloxetine 90mg; Oxycodone 30mg; Baclofen 55mg; Cyclobenzaprine 10mg; Trazodone 50mg.

She was also daily using Topiramate 150 mg, which was suspended due to renal lithiasis.

Pain: continuous, burning, on her right forearm and hand, mainly in the ulnar nerve innervation area that worsens with movements. Presence of shocks all over the upper right member, also worsens with movements. VAS= 10. In recent years, pain began to have the same characteristics in MSE and MID, however, with lower intensity (EVA= 6). She complains about sleep problems such as interrupted sleeping patterns due to the pain.

Previous experience with cannabis: Denied

Physical Examination

claw right hand, mechanical allodynia on the forearm (more intense in the ulnar area), muscle spasticity and atrophy on the ventral and dorsal sides of the forearm, and lumbrical muscles. Scar on the medial side of the entire right arm with shock sensation when performing percussion examination. Scar in the distal third of the calves.

Therapy management

It was decided to prescribe a full spectrum GMP pharmaceutical product, in a CBD:THC ratio of 8:1, containing 75 mg of CBD and 9 mg of THC per ml. The initial dose was 0.10ml with adjustments in every 5 days.

Evolution

She presented mild dizziness at the beginning of the treatment that persisted for 3 days and some gastric discomfort for 4 days. After 45 days she reported an improvement of 80% in the burning, 70% improvement in sleep and a slight improvement in the shocking sensations (20%). There was no improvement in the muscle spasms.

After cannabis use for 2 and a half months, with a daily dose of 1.5 ml, she maintained the improvement in shocks, the sleep became continuous and shocks and muscle spasms became sporadic. She decreased oxycodone use to a maximum of 3 times a week, taking only 1 tablet a day on these occasions. EVA= 5. After 3 months of treatment, due to drug importation problems, the patient had to keep without the cannabis adjuvant medication for 1 month. In this period, she practically regressed to the initial clinical picture. After this period, she restarted the medication in a smaller dose than the one she was taking when the medication finished, having no adverse effects. The medication dose was adjusted again taking her back to the same satisfactory evolution at the same dosage. After 2 years of treatment she is still maintain these results with no signs of potential tolerance or dependence issues.

Discussion

Chronic neuropathic pain affects hundreds of millions of adults worldwide, creating a direct impact on quality of life. It is estimated a 6% to 10% prevalence of neuropathic pain in patients with chronic pain.1 Less than 50% of these patients report relief with the drugs currently used, in addition to frequently undesirable side effects.[1] This pathology has been extensively characterized concerning its cellular and molecular mechanisms, and the endocannabinoid system (ECS) is widely recognized as pivotal in the development of chronic neuropathic pain.[2–4] The control of neuropathic pain is a challenge in daily clinical practice. The symptoms and signs of neuropathic pain reflect different mechanisms associated with its pathophysiology. There is a need for the development of new therapeutic options with different mechanisms of action, focused on the pathophysiology of neuropathic pain. Although most used drugs act on ion channels, researchers have shown a new understanding of pain pathophysiology in animal models, after the discovery of the endocannabinoid system and cannabinoid receptor.[5]

Cannabis has been used for thousands of years in the treatment of pain. Some recent guidelines consider cannabis-based drugs as a third or fourth treatment option for neuropathic pain if the established therapies have not shown effectiveness (anticonvulsants, gabapentinoids, antidepressants).[4,6]

THC is effective in the treatment of neuropathic pain, but its use is often limited by the presence of side effects. A study carried out in an animal model showed that the co-administration of CBD with THC, in certain doses, can increase the analgesic effect with a decrease or even absence of side effects. This study suggests that a combination of CBD: THC, at relatively low doses, may represent a potential treatment for neuropathic pain.[5] Other studies have shown that cannabis-based drugs containing a combination of CBD: THC can provide adequate analgesia in chronic pain refractory to other treatments.[7]

Due to the severity of this case, a full spectrum product was chosen, with a CBD:THC ratio of 8:1, aiming for both better control of neuropathic symptoms and improvement in sleep and mood disorders. The patient has adapted well to the medication and showed a positive response considering the complexity of the case. In addition to improving what is known as total pain, the use of this cannabis-based medication had an opioid-sparing effect, eliminating the adverse effects that further compromised their quality of life. After a relatively short period of treatment, the patient showed significant improvement with recovery of quality of life. The occasional interruption of such treatment has made clearer the effectiveness of the drug, as said by the patient.

Conclusion and recommendations

Undoubtedly, more randomized controlled studies are needed to make medical cannabis a first or second-line adjunct medication in the treatment of neuropathic pain, however, the studies developed so far and what is observed in the clinical practice, demonstrate the importance of this medication in a pathology of such complexity and difficult control.

Acknowledgments

None.

Conflicts of interest

The author declares there is no conflict of interest.

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