

High THC Oil in Ulcerative Colitis: A Case Report

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1. Abstract

Here we presented the case of a 48-year-old patient affected by lumbosacral pain treated with high concentrated THC cannabis oil. He suffered also from ulcerative colitis (UC), whose symptoms were poorly controlled by non-steroidal anti-inflammatory drugs (NSAIDs). During the cannabis oil treatment, the patient reported a significant relief from irritable bowel syndrome (IBS) related symptoms, assessed by the Mayo score, the short inflammatory bowel disease questionnaire (SIBDQ), and the bowel function index (BFI). This case report suggested that THC could be the most effective cannabinoid for the treatment of IBS-related symptoms and the oromucosal route the better way of administration.

2. Introduction

In the last years, cannabis has been used for the treatment of different gastro-intestinal disorders, like emesis, dysmotility, and to manage symptoms of many clinical conditions such as inflammatory bowel disease (IBD) and cancer [1-4].

Recently, many authors focused their attention on the potential role of cannabis and its derivatives to alleviate symptoms of IBD, but the effective type and dose of cannabis have not been so far determined.

Naftali et al used cannabis cigarettes with high percentage of delta-9-tetrahydrocannabinol (THC), while Irving et al used cannabidiol (CBD) capsules for ulcerative colitis (UC) treatment [5-6]; in three different studies, Naftali et al used high concentrated THC cigarettes

or oil with high percentage of CBD to treat Crohn's disease [7-8]. Cannabis and its derivatives did not show so far a significant improvement of IBD symptoms. Here we reported a case of a patient treated with high concentration THC oil for neuropathic pain syndrome, who experienced considerable relief from IBD related symptoms.

3. Case report

In October 2018, a 48-years-old patient came to our attention for lumbosacral pain and bilateral gonalgia (NRS=7). He suffered from acromegaly, UC, benign prostatic hyperplasia (BPH), and HCV infection. Non-steroidal anti-inflammatory drug (NSAID) did not effectively control pain; he took mesalazine for UC treatment and macrogol to control stipsis.

Before starting our treatment, we assessed patient's condition through the Short Inflammatory Bowel Disease Questionnaire (SIBDQ), a health-related quality of life tool measuring physical, social, and emotional status, scoring from 10 to 70 (a higher score corresponds to a better condition) [9]. We also administered the patient the Mayo score, which is the most commonly used questionnaire specific for UC, composed of four parts: rectal bleeding, stool frequency, physician assessment, and endoscopy appearance and each part is rated from 0 to 3. A score from 3 to 5 points indicates a mild active disease, a score from 6 to 10 points corresponds to a moderate active disease, and a score from 11 to 12 points reflects a severe active disease [10].

Bowel function index (BFI) was used to assess constipation [11-12]. BFI takes into account three aspects of bowel function: ease of defecation (numerical analogue scale (NAS) 0-100: 0=easy/no difficult; 100 = severe difficulty), feeling of incomplete bowel evacuation (NAS 0-100; 0 = not strong; 100 = very strong) and judgement of constipation (NAS 0-100; 0 = not at all; 100 = very strong), over the last 7 days. A score of more than 28.8 is indicative of constipation.

Before treatment, the SIBDQ score was 40/70, the Mayo score was 3, and the mean BFI score was 70.

We first stopped NSAID and began cannabinoids oil administration. After we educated the patient to the correct use of the oil, we started the treatment with 3 mg THC per day. After 7 days, we increased the dose to 5 mg per day.

After one month, the patient experienced a significant relief from lumbosacral pain and gonalgia (NRS=4). In February 2019, he reported worsening of pain (NRS=6), so we increased the dose up to 12 mg THC per day. After these adjustments of dosage, till April 2020, the patient achieved a good pain control (NRS=3).

During cannabis assumption, the patient noticed a relevant improvement of IBS-related symptoms, and we periodically assessed his condition. In April 2020 the Mayo score was 1, the SIBDQ score was 47, and the mean BFI was 50, with an improvement of 66.6%, 17.5%, and 28.6% of each score, respectively.

4. Discussion

Here we presented the first case of a significant improvement of IBD-related symptoms in a patient suffering from UC, treated with high percentage THC cannabis oil. Cannabinoids proved to be effective in alleviating subjective pain related to various chronic conditions; furthermore, they showed a modulating activity on intestinal motility and anti-inflammatory properties [13].

These molecules exert their actions through CB1 and CB2 receptors. The CB1 receptor is ubiquitously present in brain regions such as cortex, limbic system, sensory and motor areas, pons, hypothalamus, and spinal cord [14]. CB1 receptor activation has been associated with perceptive and cognitive effects, as well as inhibition of chronic inflammatory and neuropathic pain and modulation of sensory information processing [15]. The CB2 receptor was identified peripherally in the circulating immune cells, spleen, and macrophage-derived cells, like osteoclasts, osteocytes, and microglia. CB2 expression increases during inflammation; it seems not to have psychotropic effects, while it has anti-inflammatory, immunomodulating, and neuroprotective actions [16].

CB1 and CB2 receptors showed higher affinity to THC compared to CBD, so THC is likely to be the principle mediator of cannabis activity.

Studies so far investigating the efficacy of THC for IBD-related symptoms tested high concentration cigarettes. This administration

route does not ensure a constant bioavailability [17]; in addition, cigarettes were used only pro re nata [5]. These considerations could explain the lack of significant findings supporting the therapeutic role of THC in IBD.

CBD showed inconsistent results for the treatment of IBD [6-8]; this could be justified by the above mentioned low affinity of CBD for cannabinoids receptors.

The improvement of symptoms in our patient was probably due to the use of THC through a better administration route than cigarettes. Oral route is indeed characterized by a slower absorption compared to smoke inhalation, but it showed a more constant bioavailability and a longer duration of activity [18]. In particular, oromucosal absorption has the advantage to avoid the first passage effect and to present a higher bioavailability compared to oral route.

This case report suggested that the oromucosal administration of high concentration THC oil could be an effective treatment for IBD-related symptoms; further investigations are needed to confirm our observations. Moreover, histological analyses could be conducted to explore the potential anti-inflammatory action of THC on IBD gut.

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