IRRITABLE BOWEL SYNDROME

Inflammatory bowel diseases (IBD), comprised of Crohn's disease (CD) and ulcerative colitis (UC), are chronic immune-mediated diseases of the gastrointestinal tract. IBD is characterized by symptoms of intense visceral pain, nausea, diarrhea, and subsequent weight loss. Due to the intermittent and sudden occurrence of symptoms, this condition can cause substantial physical and emotional stress.

Clinically, activation of the cannabinoid receptors is crucial to treating the inflammatory and pain states of IBS. It has been shown that cannabis administered through inhalation does not improve disease progression, but does show improvement in abdominal pain, abdominal cramping, joint pain, and decreased gut motility (diarrhea) symptoms.

The PPARγ receptor (Peroxisome Proliferator-Activated Receptor) is a nuclear receptor highly expressed in the GI tract and functions through controlling gene expression and energy metabolism. Commercially approved PPARγ agonists (Rosiglitazone and Pioglitazone) are known to treat Crohn's/UC in preclinical models, although clinical trials in IBS may be lacking due to their known side effects.

Some recent studies have shown a close interaction between the CB2 receptor and PPARγ as well. Indeed, PPAR agonists ameliorate experimental colitis in animal models, and PPARγ expression is reduced in patients with ulcerative colitis.

Cannabis and its components are known partial agonists of the PPAR receptors and may provide a benefit over commercial PPAR medicines through a reduced side effect profile.

Rick Simpson Oil (RSO) is a raw cannabis extract enriched in the acidic cannabinoid forms (THCA, CBDA) and has been shown to improve the symptoms and prognosis of IBD patients, although it hasn't been clinically studied. The effectiveness of THCA and CBDA point to PPARγ as the main target, as the acid forms are significantly more potent at activating PPARγ than the corresponding neutral forms.

Cannabidiol has been shown to improve inflammatory symptoms of UC in animal models as well. These effects were found to be dependent on PPARγ activation.

TERPENES

BCP and humulene are known to improve colitis symptoms and systemic inflammation and should be prioritized over other terpenes.

Other terpenes that could provide relief are Myrcene, Terpinolene, and p-Cymene, all of which may help treat visceral pain due to their analgesic properties.

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