

IMPROVEMENT OF IRRITABLE BOWEL SYNDROME AND ESSENTIAL TREMOR WITH CANNABIDIOL DESPITE USE OF METHYLPHENIDATE.

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ABSTRACT

We describe a case of a 34-year-old patient with ADHD, Essential Tremor, and Irritable Bowel Syndrome treated with Methylphenidate and Cannabidiol with improvement in all three conditions.

Keywords: Essential tremor; Irritable Bowel Syndrome; Cannabidiol; Methylphenidate; ADHD.

INTRODUCTION

Essential Tremor (ET) is a common movement disorder, and approximately 50% of cases are inherited as an autosomal dominant trait.(1) ET is one of the most common neurological disorders that often affects people in the prime of their lives, leading to a significant reduction in their quality of life, gradually making them unable to independently perform even the simplest activities. Currently, deep brain stimulation of the motor thalamus is the most effective treatment for ET. However, like any brain surgery, it can cause many undesirable side effects; thus, it is only performed on patients with advanced disease who do not respond to medications.(2)

Tremors usually increase with anxiety, stress, and in situations involving interaction with others. Patients with tremors in the head and voice often suffer severe embarrassment and may develop depression.(3) ET should be differentiated from other types of tremors, especially tremor of Parkinson's disease, tremor associated with hyperthyroidism, and dystonic tremor of the head in patients with isolated head tremor. Once the diagnosis is made, the severity of functional and psychosocial disabilities should be assessed using objective scales, which will help determine the need for pharmacotherapy.(3)

First-line pharmacological treatments include symptomatic treatment with propranolol, primidone, and topiramate. Botulinum toxin is for selected cases. Invasive treatments for essential tremor should be considered for severe tremors. They are generally accepted as the most powerful interventions and provide not only improvement of tremor but also a significant improvement in quality of life. The current standard is deep brain stimulation (DBS) of the thalamic and subthalamic regions. Focused ultrasound thalamotomy is a new therapy that is attracting increasing interest. Radiofrequency lesioning is only rarely done if

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DBS or focused ultrasound is not possible. Radiosurgery is not well established. We present our treatment algorithm. Radiofrequency lesioning is only rarely done if DBS or focused ultrasound is not possible. Radiosurgery is not well established.(4)

Cannabidiol (CBD), the main non-psychotropic constituent of Cannabis, has been proposed for the treatment of a wide panel of neurological and neuropsychiatric disorders, including anxiety, schizophrenia, epilepsy, and drug addiction, due to its versatile scaffold's ability to interact with various molecular targets that are not restricted to the Endocannabinoid system.(5)

Interestingly, Cannabinoid receptors (CBRs) are highly expressed in the basal ganglia (BG) circuit of animals and humans. The BG are subcortical structures that regulate the initiation, execution, and orientation of movement. CBRs regulate dopamine transmission in the nigrostriatal pathway and thus, the BG circuit as well. BG functioning is affected in pathologies related to movement disorders. CBRs have been shown to inhibit neurotransmitter release, while Endocannabinoids (eCBs) play a crucial role in synaptic regulation of the BG. In the last decade, Cannabidiol (CBD), a non-psychotropic phytocannabinoid, has shown compensatory effects both in the ECS as a neuromodulator and neuroprotective in models such as 6-hydroxydopamine (6-OHDA), 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP), and Reserpine.(6)

These findings open up new lines of scientific investigation into the effects of CBD on the level of neural communication. Cannabidiol activates the PPAR γ , GPR55, GPR3, GPR6, GPR12, and GPR18 receptors, causing a variety of biochemical, molecular, and behavioral effects due to the wide range of receptors it activates in the CNS. (6)

We have described a case where Essential Tremor, exacerbated by medication used to treat ADHD, completely improved when we added Cannabidiol to the treatment.

CASE REPORT

A 34-year-old male patient, an engineer, with Attention Deficit/Hyperactivity Disorder (ADHD), Irritable Bowel Syndrome, and Essential Tremor. He reported that his father, a paternal aunt, and paternal grandfather were also carriers of Essential Tremor.

We started treating his ADHD with Methylphenidate. The patient showed an immediate improvement in ADHD symptoms with a dose of 30 to 60 mg of Methylphenidate per day. He had a slight worsening of tremor as a side effect of Methylphenidate. (7)

Then, we added Cannabidiol with 0.2% THC to the treatment. He showed an improvement in Irritable Bowel Syndrome, which had already been observed in previous cases (8). However, to our surprise, Essential Tremor completely improved, even on days with more activity when he took the maximum dose of 60 mg of Methylphenidate.

DISCUSSION

A study published in 2008 in the journal "Clinical Neuropharmacology" evaluated the effects of Methylphenidate in patients with essential tremor. The study included 12 patients and reported that Methylphenidate significantly worsened tremor in 8 out of 12 patients. (7)

This case shows that Cannabidiol may be an option for treating Essential Tremor, even during the use of medication that theoretically may worsen the tremor, with the advantage of also treating a comorbidity such as Irritable Bowel Syndrome.

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