

Dronabinol-induced hypomania: A case report and literature review

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Purpose

Dronabinol is a synthetic derivative of cannabis that is commonly prescribed for chemotherapy-induced nausea and vomiting or cachexia due to HIV/AIDS. Dronabinol and the cannabinoids found in medical marijuana have complex effects on the central nervous system that can lead to both positive and negative patient outcomes. Here we present a case of dronabinol-induced hypomania in a 55-year-old male with a history of bipolar disorder and substance use disorder. This case emphasizes the need to thoroughly evaluate mental health conditions before prescribing medical marijuana or synthetic cannabis derivatives such as dronabinol.

Background

Medical cannabis is used for a variety of conditions including chemotherapy induced nausea and vomiting, appetite stimulation in HIV/AIDS, chronic pain, and spasticity [1]. The safety of medical cannabis as well as FDA-approved cannabinoids, dronabinol and nabilone, in those with bipolar disorder warrants further investigation as previous studies suggest that the use of cannabis may be associated with exacerbation of manic symptoms [2]. Medical cannabis is available in several formulations that contain varying amounts of psychoactive delta-9-tetrahydrocannabinol (THC) and non-psychoactive cannabidiol (CBD) [3]. The risk of developing manic symptoms in patients with bipolar disorder who use dronabinol, a synthetic version of THC administered orally, is largely unknown.

Clinical Case

Our patient is a 55-year-old Caucasian male who has been following with psychiatry since July of 2016 for substance use disorder and the following mental health conditions: bipolar I disorder, generalized anxiety disorder, PTSD, and intermittent sleep disturbances with no history of sleep apnea but recent reports of restless legs syndrome. Other relevant medical conditions include HIV and a history of primary restrictive eating disorder. He has no history of inpatient psychiatric hospitalizations or of suicide attempts. In terms of substance use he has a history of alcohol, cocaine, and cannabis use disorder but has been abstinent from alcohol, tobacco, and illicit substances for more than a year. The patient's relevant medication list includes: bupropion XL 150 mg daily, quetiapine 300 mg daily at bedtime, and trazodone 50-100 mg at bedtime.

As a result of his HIV our patient was struggling with wasting syndrome and significant weight loss for which he was prescribed dronabinol 2.5 mg twice daily on 5/19/17. At his visit with his

psychiatrist on 7/10/17, his bipolar disorder was noted to be stable. His dose of dronabinol was later increased on 7/21/17 to 5mg twice daily. At his psychiatrist visit on 8/1/2017, the patient was found to be in a state of hypomania, presenting with symptoms including: increased interest in sex, insomnia and increased animation. His judgment and impulse control were also noted to be slightly impaired at this visit. Excluding the dronabinol dose increase, no other medication changes had taken place and the patient was not using any alcohol or other substances.

To treat the patient's hypomania, quetiapine was discontinued and olanzapine 10 mg at bedtime was started to also help with insomnia and promote weight gain. Bupropion was discontinued, his trazodone was tapered off, and dronabinol was also discontinued under suspicion for causing the hypomania. Upon follow up within a month, our patient's hypomania symptoms had mostly resolved. He had also begun gaining weight with the olanzapine and reported improved sleep. He acknowledged having a feeling of "buzz" while he had been taking the dronabinol. He was continued on olanzapine 10 mg at bedtime and continued off the trazodone, bupropion and dronabinol. He continues to remain abstinent from alcohol and illicit drugs.

Discussion

The underlying mechanism of dronabinol induced manic symptoms in those with bipolar disorder remains unclear but may involve dopamine. Sensitization of the dopaminergic system by THC is thought to be associated with the development of manic symptoms in those that use cannabis [2]. THC is associated with increased dopaminergic cell firing, dopamine synthesis, and dopamine release when used acutely [4].

Other medications have been associated with causing manic symptoms, including bupropion and trazodone, as relevant to our case [5,6]. However, our patient had previously been stable on these medications prior to the addition of dronabinol. Thus, it is reasonable to conclude that the dronabinol likely caused our patient's hypomania symptoms.

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In recent years the regulatory status of marijuana for medical and recreational use has changed in several states [7]. This has led to a growing population of patients who are using cannabinoids and as our case report has shown, those with underlying mental health conditions may be at risk of developing serious adverse effects. A thorough evaluation of mental health conditions and substance use disorders is necessary to identify patients for whom the use of medical cannabis or dronabinol is appropriate.

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