

Multifactorial Anxiety Disorder and Severe Compulsions Showing Decreased Frequency With Cannabis Treatment

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The patient is a 30-year-old woman with a 10-year history of episodic severe anxiety that is characterized by aggressive self-induced vomiting and that cannot be redirected. During these episodes, she becomes extremely agitated and uncooperative, screaming loudly and forcing her fingers down her throat to induce vomiting. She reports that her anxiety is reduced after vomiting. The patient and her family are unaware of any specific triggers for these episodes. During severe episodes, she is unresponsive to sedative medications and requires physical restraint. On several occasions, her attempts to escape from the restraints had caused bruising. She has also been known to bite hospital staff and herself. During some episodes, she exhibits persistent elevated blood pressure and pulse. In one episode, for example, her blood pressure was 210/120 mm Hg, and her heart rate was 101 beats/min.

The onset of this disorder followed numerous medical and psychiatric illnesses. The patient had been diagnosed with psoriasis at the age of 6 years, prompting frequent visits to multiple dermatologists and other health care providers at the

behest of her mother. At age 11, she had been diagnosed with type 1 diabetes. At the time of that diagnosis, she had received dietary counseling, but she nonetheless began binge-eating sugary foods. This behavior led to frequent hospitalizations due to poor control of her blood glucose levels. According to her family, the patient felt a lot of stress and agitation at that time, and she argued frequently with her mother. She developed bingeing-and-purging behavior at the age of 15 years, which led to a diagnosis of bulimia nervosa. She was seen by a psychologist at the age of 16 or 17 years. Her bingeing behavior subsequently stopped, and her bulimia nervosa diagnosis went into full remission.

In her early 20s, the patient began having episodic severe abdominal pain. This led to multiple emergency department visits, during which she had been prescribed opioid medications for the pain; she subsequently developed an opioid addiction. She was eventually diagnosed with gastroparesis, which necessitated surgical implantation of a gastric electrical stimulator in 2012, at the age of 23 years. The patient reportedly began having episodes of self-induced vomiting around this time. Due to the patient's persistent self-induced vomiting, her blood glucose levels were unable to be controlled. As a result of her uncontrolled diabetes, she developed kidney failure at the age of 28 years, which required dialysis 3 times a week. The patient stated that she was supposed to have undergone a kidney transplant in 2016, but the operation was unable to be done at that time for an unspecified reason. The patient was admitted to an intensive care unit in February 2018 due to diabetic ketoacidosis and hyperkalemia. She underwent a kidney and pancreas transplant in May 2018. The patient took antirejection medication for 2 months posttransplant; however, she was unable to recall the name of the medication she had been prescribed.

The patient was first seen at our hospital in January 2018 for chronic kidney disease requiring dialysis. At that time, she also presented to behavioral health due to feelings of anxiety. She did not have any other psychiatric concerns at the time of the consultation. The patient was accompanied by her sister, who

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helped provide the medical history. During the interview, the patient was awake, alert, oriented to person, place, and time, and she was calm and cooperative but anxious and restless. She denied any hallucinations or delusions and also denied any suicidal ideations or attempts and homicidal ideations. The patient and her sister reported that she was not using any recreational drugs and that she rarely drank alcohol. The patient lives in a private home with her mother. She reports no history of abuse. The patient's mother also has anxiety. The patient's father has type 2 diabetes. The patient has one daughter, who has been diagnosed with autism.

Prior to her initial presentation at our hospital, the patient had been seen by numerous psychiatrists in inpatient settings. Her home psychotropic medications at the time of her initial presentation consisted of trazodone, 100 mg at bedtime, and olanzapine, 15 mg twice a day. Prior to her initial visit, multiple selective serotonin-reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors, antipsychotics, and anxiolytics had failed to improve her anxiety symptoms. The patient previously had undergone electroconvulsive therapy (ECT) beginning in November 2017; her last ECT treatment had been on the day before her initial visit in January 2018. She had received 14 treatments during that time. According to the patient, the ECT had had no effect on her condition.

The patient also has a history of frequent admission to our hospital as well as to other hospitals for multiple reasons, including anxiety, abdominal pain, hypertension, and diabetes. During hospitalization at our facility, she typically is given lorazepam, 2 mg, along with either chlorpromazine, 50 mg, or a combination of haloperidol, 5 mg, and diphenhydramine, 50 mg. Both courses are able to stabilize the patient's condition. The patient stated that she believes that lorazepam improves her anxiety; however, her intermittent episodes of anxiety and self-induction of vomiting persisted.

The patient also has a history of opioid addiction, and she was referred to detoxification rehabilitation in December 2018 after multiple back-to-back emergency department visits during which she requested opioids. She began methadone treatment in January 2019, and as of her recent visit in March 2020, she is no longer taking methadone.

During her February 2020 visit, the patient stated that she had sought care from a different physician in August 2019, and she had been prescribed a 1-g maximum dose of cannabis (marijuana) per month to use as needed for her uncontrolled anxiety symptoms. She stated that her anxiety symptoms have necessitated cannabis use 3 to 4 times per week, and that this regimen had improved her anxiety.

During the patient's recent visit in March 2020, she stated that her anxiety had improved, but that she still experienced anxiety in the afternoon. The patient's mother, who was present during this visit with the patient's consent, stated that the patient had twice been hospitalized due to severe anxiety since her

previous visit in February 2020. During one of those hospitalizations, she had been prescribed quetiapine, 25 mg, twice daily. During her March 2020 visit, we increased her quetiapine dose to 25 mg 3 times a day to combat her afternoon anxiety.

As of that visit, her current medication regimen is as follows: quetiapine, 25 mg 3 times a day; hydroxyzine, 25 mg in the morning and 50 mg at bedtime; pregabalin, 200 mg daily; fluoxetine, 40 mg twice a day; lorazepam, 1 mg twice a day; chlorpromazine, 50 mg twice a day; and 1 g of cannabis per month. The patient's symptoms have not completely resolved; however, her frequency of hospitalization and the severity of her symptoms have significantly decreased since she started using cannabis. We will continue to monitor the patient's progress.

DISCUSSION

Upon review of the patient's history and her current symptoms as of her March 2020 visit, and according to the *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5)*,¹ the following diagnoses were made:

1. Other specified anxiety disorder (DSM-5 code F41.8). The patient does not meet criteria for generalized anxiety disorder, because she has intermittent symptoms, and they are not present on most days of the year. Also, the patient does not meet criteria for panic disorder, because she does not have persistent concern or change in behavior after attacks.

2. Major depressive disorder, recurrent episode, moderate (F33.1).

3. Other specified obsessive-compulsive and related disorders (F42.8). The patient does not meet criteria for obsessive-compulsive disorder (OCD) because of the episodic nature of the condition and because the compulsions are only time-consuming during the exacerbation.

4. Other specified feeding or eating disorder (F50.89), in full remission. The patient does not meet criteria for bulimia nervosa, because she does not engage in compensatory mechanisms in an attempt to influence body shape and weight. She does not meet criteria for binge eating disorder at this time, because she has no bingeing behavior.

5. Opioid use disorder, severe, in sustained remission (F11.21).

The patient has a history of opioid addiction, which is a possible confounder, since she may be experiencing underlying withdrawal-induced anxiety. She has a number of comorbid conditions, complicated initially by bingeing-and-purging behavior and later by compulsive self-induced vomiting paired with severe anxiety. She has not identified any particular trigger for her episodes of self-induced vomiting, but a number of stressful situations seem to coordinate with some of these episodes. This combination of life stressors and health concerns may have caused a maladaptive compensatory mechanism in the form of compulsion to self-induce vomiting.

Vomiting can cause deterioration of health and even death. Dehydration from frequent vomiting can cause kidney failure,

as was observed in this patient. Persistent vomiting can also cause gastrointestinal tract disease, heart conditions, gum and tooth disease, menstrual irregularities, and electrolyte imbalance.² It can also produce feelings of guilt, which can worsen depression, anxiety, and other psychiatric illnesses. Other psychiatric conditions can cause or exacerbate self-induced vomiting, including anxiety, schizophrenia, and psychosis. A literature review revealed a case study of a woman who suffered from self-induced vomiting for many years before she was diagnosed with OCD.³ Her symptoms improved after proper diagnosis and treatment with an SSRI.³

Our patient has been treated with multiple medications, including SSRIs, mood stabilizers, and antipsychotics, with persistence of relapse and remission. The patient also uses cannabis as a means of anxiety relief. The use of cannabis and cannabinoids to treat anxiety and other medical conditions has been increasing.^{4,5} Preclinical studies have shown that tetrahydrocannabinol (THC), the primary psychoactive component of cannabis, can relieve anxiety at low doses; however, higher doses of THC can actually increase anxiety.⁴ Studies of cannabidiol (CBD), another component of cannabis, have also shown a reduction in anxiety.⁴ Some of the psychiatric conditions studied include generalized anxiety disorder, panic disorder, depression, post-traumatic stress disorder, and OCD.⁶ Findings show that CBD may reduce anxiety by interacting with receptors that process fear reactions and anxiety.^{4,5}

The frequency of the patient's self-induced vomiting episodes improved after she began using cannabis. According to the patient's mother, she is now able to go 2 to 3 months without hospitalization, whereas she previously had been admitted to the hospital multiple times per month. Although, her symptoms have not completely abated, she has experienced a decrease in

the frequency and severity of symptoms, leading to a decreased need for inpatient care and improvement in quality of life.

CONCLUSION

Our patient developed a compulsion to self-induce vomiting as a maladaptive compensatory mechanism in response to multiple health problems and stressful life situations. She suffers acute anxiety episodes in reaction to both positive and negative life events as well as in the absence of any trigger. The compulsion to self-induce vomiting is triggered by her anxiety symptoms. Cannabis has been helping to improve the patient's symptoms of compulsive self-induced vomiting and anxiety. She has experienced a decrease in the frequency and severity of symptoms leading to fewer hospitalizations with remissions lasting 2 to 3 months or longer. Further research into the use of cannabis as anxiety treatment may be worth pursuing if it can help patients achieve improvement of their anxiety symptoms. ■

REFERENCES:

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. American Psychiatric Association; 2013.
2. Forney KJ, Buchman-Schmitt JM, Keel PK, Frank GKW. The medical complications associated with purging. *Int J Eat Disord*. 2016;49(3):249-259. doi:10.1002/eat.22504
3. Kirkcaldy RD, Kim TJ, Carney CP. A somatoform variant of obsessive-compulsive disorder: a case report of OCD presenting with persistent vomiting. *Prim Care Companion J Clin Psychiatry*. 2004;6(5):195-198. doi:10.4088/pcc.v06n0503
4. Fernández-Ruiz J, Galve-Roperh I, Sagredo O, Guzmán M. Possible therapeutic applications of cannabis in the neuropsychopharmacology field. *Eur Neuropsychopharmacol*. 2020;36:217-234. doi:10.1016/j.euroneuro.2020.01.013
5. Blessing EM, Steenkamp MM, Manzanares J, Marmar CR. Cannabidiol as a potential treatment for anxiety disorders. *Neurotherapeutics*. 2015;12(4):825-836. doi:10.1007/s13311-015-0387-1
6. Bergamaschi MM, Queiroz RHC, Chagas MHN, et al. Cannabidiol reduces the anxiety induced by simulated public speaking in treatment-naïve social phobia patients. *Neuropsychopharmacology*. 2011;36(6):1219-1226. doi:10.1038/npp.2011.6