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Cannabinoids Hyperemesis Syndrome

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Abstract

Introduction: Cannabinoid hyperemesis syndrome (CHS) is characterized by chronic marijuana use, cyclic vomiting, abdominal pain, and compulsive need to take hot showers. This syndrome is an episodic, recurrent disorder in which three phases have been described: a prodromal, hyper-emetic, and a recovery phase with resolution of symptoms upon cessation of marijuana use.
Case Presentation: We report a case of a 33-year- old female with long history of cannabinoid use who presented to emergency department complaining of abdominal pain, nausea and vomiting for 3 days. She reported having recurrent similar episodes for the last 4 years, usually every 3 - 4 months. An extensive gastrointestinal evaluation was done before, but failed to identify a clear cause for her symptoms. Based on the diagnostic criteria for CHS, the diagnosis of CHS was made. After discharge the patient had a symptom-free period with the cessation of marijuana use. However, she relapsed later and her symptoms returned.
Conclusions: This case illustrates the importance of having a high index of suspicion for CHS in patients with history of cannabis use, since earlier recognition of can help reduce unnecessary workups, doctor visits, and hospital admissions.

Keywords: Cannabis, Marijuana, Cyclic Vomiting, Hyperemesis

1. Introduction

Cannabis is one of the most frequently abused illicit substances in the United States. Cannabinoid hyperemesis syndrome (CHS) is characterized by chronic marijuana use, cyclic vomiting, abdominal pain, and compulsive need to take hot showers (1-3).

2. Case Presentation

A 33-year- old female with long history of cannabinoid use and no significant past medical history. She presented to emergency department complaining of abdominal pain for 3 days, the pain was periumbilical, localized and cramping in nature, it was also associated with nausea and many episodes of vomiting of clear fluids, with no diarrhea, constipation or urinary symptoms. The patient reported having recurrent similar episodes of pain, nausea and vomiting for the last 4 years, usually every 3 - 4 months. These episodes used to last for 2 - 3 days, most of the episodes were mild and terminated without medical intervention, but some of them were severe and required hospital admissions. Upon further questioning she indicated that warm baths usually provide relief of her symptoms. She admitted to smoking marijuana daily for the past 10 years. An extensive gastrointestinal evaluation was done before, but failed to identify a clear cause for her symptoms. On physical exam, vital signs were normal, her mucus membranes were dry, abdomen was soft, with mild tenderness in the periumbilical area and normal bowel sounds. Laboratory data showed a white blood cell count of 10.4 k /μL, hemoglobin of 13.2 g/dL, platelets of 277 k/μL, creatinine of 0.93 mg/dL, serum electrolytes were normal except for low potassium of 2.9 mmol/L, liver enzymes, amylase and lipase were normal. Urine drug screen was positive for cannabinoids. An abdominal ultrasound and computerized tomography (CT) scans of her abdomen and pelvis didn't show any abnormalities. During a previous admission the patient had an esophagogastroduodenoscopy (EGD) and colonoscopy and both of them were normal.

Based on the diagnostic criteria for CHS, the diagnosis of CHS was made. The patient was admitted for intravenous fluids hydration, antiemetics, and she was advised to discontinue marijuana use. After discharge she had a symptom-free period with the cessation of marijuana use. However, she relapsed later and her symptoms returned.

3. Discussion

Cannabis is the most widely used illicit drug in the United States among all age groups. In 2008, 2.2 million adolescents aged 12 to 17 used marijuana for the first time,

more than any other illicit drug (1). While 42.6% of high school senior reported using cannabis at least once in their lifetime, 5.4% use cannabis on a daily basis. CHS has been almost exclusively reported in people who began using cannabis daily in their teenage years (4).

CHS is characterized by chronic marijuana use, cyclic vomiting, abdominal pain, and compulsive need to take hot showers (2, 3). This syndrome is an episodic, recurrent disorder in which three phases have been described: a prodromal, hyper-emetic, and a recovery phase with resolution of symptoms upon cessation of marijuana use. CHS was first reported in 2004 in a clinical series of 10 patients in Australia by Allen et al. (5). Many cases were reported afterwards, however, the actual prevalence of CHS is unknown and it remains an under-recognized condition by physicians which leads to multiple unnecessary diagnostic tests as most of the patients will usually have multiple emergency room and clinic visits before the diagnosis is made.

The pathophysiology of CHS is not well understood. However, it is known that Cannabinoids exert their psychoactive and antiemetic properties via the endogenous cannabinoid receptors CB-1. It has been postulated that the chronic stimulation of CB1 may cause receptor down-regulation resulting in decreased peristalsis and leading to an associated increase in nausea and vomiting (5, 6). In addition, CB1 receptors are also located on peripheral enteric nerves, and their stimulation lead to slow gastrointestinal transit. CB1 receptors are also found in the hypothalamus close to the thermoregulatory center which could explain the role of compulsive hot bathing in relieving symptoms, this has been thought to be related to counteraction of cannabis effect at the thermoregulatory center (6-8).

A diagnostic criteria was proposed based on the largest case series by Simonetto et al. (6). CHS can be diagnosed in a patient with long-term use of cannabinoid substances and any of the following: 1) nausea and vomiting 2) abdominal pain 3) symptoms relieved by hot showers or baths 4) symptoms that resolve when cannabis is stopped 5) use of cannabinoid substance at least every week.

Management of CHS can be split into the treatment of acute hyper-emetic phase and a chronic maintenance phase (3). In the acute hyper-emetic phase, inpatient care may be needed for supportive treatment. All classes of antiemetics may be used for intractable nausea and vomiting. Volume resuscitation is given for extracellular volume depletion which may be severe enough to cause renal insufficiency as in our case. Opioids for abdominal pain should be used with caution due to the possibility of potentiating emesis as a side effect. CHS patients may show esophagitis and gastritis; therefore, acid-suppressing medications may have a role in treatment but are by no means curative. These supportive treatments constitute the core of care in the acute hyper-emetic phase, along with removal of the drug (3, 5, 6). Care during the chronic maintenance phase involves prevention of relapse and patient education of the condition to help them understand cannabinoid substance use as the cause of their symptoms. Other measures to prevent relapse include cognitive behavioral therapy and drug rehabilitation programs (7-9).

Physicians should have a high index of suspicion for CHS in patients with history of cannabis use. Earlier recognition of this syndrome can help reduce unnecessary workups, doctor visits, and hospital admissions. The prognosis is very good with resolution of symptoms in most patients upon cessation of cannabis use. More studies are needed for better understanding of the etiology, prevalence, and risk factors for developing this syndrome.

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