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## Compulsive showering and marijuana use – the cannabis hyperemesis syndrome

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Data Collection B  
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**Patient:** **Male, 26**  
**Final Diagnosis:** **Marihuana addiction**  
**Symptoms:** **Compulsive showering • nausea • vomiting**  
**Medication:** —  
**Clinical Procedure:** —  
**Specialty:** **Toxicology**

**Objective:** **Unexpected drug reaction**





**Background:** The use or misuse of Cannabis is well recognized in the Caribbean region. Recently, the cannabinoid hyperemesis syndrome has been described. The triad is characterized by chronic marijuana use, cyclical vomiting, and compulsive bathing. With the extensive use to marijuana as a recreational drug and also the increased use as prescription medication, a patient presenting with this symptomatology needs to be assessed appropriately and this syndrome needs to be one of the differential diagnoses.

**Case Report:** To our knowledge, we report the first such case in the Caribbean region. Here, we report on the case of a 26-year-old Caucasian male with a 3-week history of nausea and week of epigastric pain and vomiting. The patient was known to use marijuana daily for 2 years and had similar complaints for the last 6 months.

**Conclusions:** Because this popular recreational drug is now being used with increased frequency as a prescribed medication, it is crucial that clinicians be aware of this condition, which can present as a diagnostic dilemma.

**Key words:** **cannabis • hyperemesis • cyclical vomiting**

**Full-text PDF:** <http://www.amjcaserep.com/download/index/idArt/884001>

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## Background

Cannabis (or more affectionately referred to on the street as marijuana or ganja) is one of the most frequently used illicit drugs both internationally [1] and in the Caribbean islands [2,3]. Cannabis has several well known effects on the gastrointestinal system. More recently, and less well recognized, is the cannabinoid hyperemesis syndrome (CHS), which is typified by the tetrad of cyclical vomiting, abdominal pain, compulsive hot showering, and chronic marijuana use [4–6]. The rarity of the condition can lead to a diagnostic dilemma resulting in extensive and expensive investigations with a delay in treatment. We report the first case of CHS in the Caribbean and highlight the need for being aware of this differential in chronic marijuana smokers, particularly for those who have access to high-potency, genetically engineered marijuana.

## Case Report

A 26-year-old Caucasian male presented to our center with a 1-week history of severe colicky epigastric pain heralded by significant nausea for 3 weeks. He had approximately 20 episodes of bilious vomiting daily with numerous bouts of retching. He admitted to smoking 4 “joints” or marijuana cigars every day for the last 2 years, and denied alcohol and tobacco use. He had 4 similar episodes over the last 6 months. During these admissions, he was rehydrated and abdominal imaging revealed no abnormalities. His ongoing nausea was relieved by taking hot showers, of which he took up to 15 times per day, sometimes for more than an hour.

His vital signs were within normal limits and he was found to have mild epigastric tenderness with no peritonism. He was admitted for intravenous fluid rehydration and antiemetics.

Blood investigation revealed no abnormalities with his complete blood count and renal and hepatic function. An abdominal computerized tomography (CT) scan revealed no abnormalities. An esophagogastroduodenoscopy and biopsy revealed mild gastritis negative for *Helicobacter pylori*. His symptoms initially remained refractory to morphine and antiemetics.

Over the ensuing 48 hours, his symptoms improved and he was slowly weaned off medication. He had no access to marijuana.

The diagnosis of CHS was made and he was counseled on abstinence from marijuana. Though he refused to enter a substance abuse program, he remained cannabis-free and on follow-up at 1, 3 and 6 months revealed no recurrence in symptomatology.

## Discussion

Marijuana (ganja or weed, as it is commonly known in the Caribbean) is a popular recreational drug. Marijuana is also one of the most frequently used illicit substances in the United States [7]. Despite being an illicit drug in most countries, the beneficial medicinal effects of marijuana have been well documented; specifically as an antiemetic and appetite stimulant for chemotherapy patients [8]. This effect is brought about by tetrahydrocannabinol (THC), which is the major psychoactive ingredient in marijuana, and its action on endogenous cannabinoid receptors CB1 and CB2. CB1 receptors are expressed primarily in the brain and are thought to be responsible for most of the known effects of marijuana use, such as euphoria and appetite stimulation. However, with chronic use and toxicity, patients may experience paradoxical effect due to continuous THC stimulation of cannabinoid receptors, manifested as cyclical hyperemesis. This observation of symptomatology led to the description of cannabinoid hyperemesis syndrome, which is characterized by cyclic vomiting and nausea, chronic marijuana use, and compulsive bathing, first described by Allen et al in GUT 2004 from a case series of 19 patients in Australia [9]. This confirmed an earlier report by Moore et al in 1996 describing a chronic cannabis abuser with psychogenic vomiting, which was complicated by pneumomediastinum [10]. The proposed toxicity noticed with chronic use is attributed to marijuana's long half-life, fat solubility, delayed gastric emptying, and thermoregulatory and autonomic disequilibrium via the limbic system [9]. This hyperemetic response to marijuana has been previously documented to impair peristalsis in a dose-dependent manner [11,12], delay gastric emptying [12], and a demonstrated response to acute toxicity of intravenous injection of crude marijuana extract [13].

Patients have also exhibited odd behaviour such as compulsive bathing in hot water and autonomic symptoms of sweating, flushing, thirst, abdominal pain, and alterations in body temperature. This behavior is caused by the effect of marijuana on the limbic system of the brain, particularly the hippocampal-hypothalamic-pituitary level [11,14,15]. Compulsive hot water bathing is present in most cases and patients seem to gain relief of symptoms. There are 2 theories for this relief: 1) Chronic CB1 receptor stimulation near the thermoregulatory center of the hypothalamus might be reversed by warm bathing [8] and 2) Redistribution of blood flow from the gut to the skin with warm bathing relieving the CB1 mediated vasodilation of the gut associated with chronic use, the so called “cutaneous steal syndrome” [16]. With the more recent publications on this topic [4,16–18] it has become prudent that physicians have a diagnostic criteria along with a high index of suspicion in treating this syndrome. The diagnostic criteria described by Sontineni et al

in 2009 include: 1) history of regular cannabis use for years, 2) severe nausea and vomiting, 3) vomiting that recurs in a cyclic pattern over months, and 4) resolution of symptoms after stopping cannabis use [19]. In addition, there are supportive features in the syndrome such as compulsive hot baths and colicky abdominal pain. This classification was also modified in 2012 after a case series of 98 patients at the Mayo Clinic [4].

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## Conclusions

Marijuana use is common in the Caribbean region. This is mainly due to its easy accessibility and low cost. Cannabinoid hyperemesis syndrome, although recently described, may be prominent in chronic marijuana users. As a result, physicians need to be aware of its symptomatology and make the diagnosis based on a detailed history and avoiding expensive, invasive surgical treatment, which can be useless and occasionally harmful to the patient.