

Case Report

Cannabinoid Hyper-emesis Syndrome: An Enigma

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ABSTRACT

Marijuana is one of the most frequently abused illicit substances in the world especially Australia. Cannabinoid Hyperemesis Syndrome (CHS) is characterized by a triad of symptoms: Cyclic vomiting, chronic marijuana use, and compulsive bathing. It involves recurrent episodes of self-limited nausea and vomiting lasting several days and patients are asymptomatic between episodes. We believe that Cannabinoid Hyper emesis Syndrome is much more common than currently recognized. We present a unique case with an apparent positive family history of the same clinical entity.

Key words: *Cannabinoid and emetic effect, cannabis hyperemesis, vomiting and cannabis*

A young lady presented to the emergency department (ED) with recurrent vomiting and recent onset of abdominal pain. These physical symptoms precipitated her anxiety so she was referred to the psychiatric department. There was nil gastric pathology and laboratory examination including thyroid function tests was also inconclusive. She had recommenced her use of marijuana, up to half a gram a day, 4 months prior to this episode of vomiting and abdominal pain.

She revealed a 10-year history of marijuana use of varying amounts. In the past 4 years, she has had frequent presentations to the Emergency Department with recurrent vomiting, abdominal pain, and anxiety. She had been treated on Sertraline and Diazepam for panic attacks by her general practitioner (GP); however, her compliance was sporadic.

On admission to the ward for observation, she was observed to take multiple hot showers in a day to

reduce the vomiting episodes. Her symptoms resolved with abstinence from marijuana and short-term use of an anxiolytic. She described an episodic pattern of recurrent vomiting, abdominal pain, and multiple bathing consistent with CHS, and intermittent complete recovery from these symptoms on temporary abstinence from marijuana. She denied use of other illicit substances except an intermittent use of nicotine. She had been assessed by mental health service on several occasions and a tentative diagnosis of marijuana-related psychological and behavioral problems was entertained. Interestingly, she also reported a similar recurrent pattern of vomiting in her father, who had also been a chronic marijuana user.

DISCUSSION

Marijuana's medicinal use as an anti-emetic and appetite stimulant, especially in patients receiving chemotherapy, is well established.^[1] The first published cases of CHS were reported in 2004 although an earlier case was reported in 1996; however, the authors did not specify cannabis use as the cause.^[3] Cannabis has an active compound Δ -9-Tetrahydrocannabinol (THC) which acts on presynaptic brain receptors CB1 and CB2, whereas, inhibition of gastric motility by Δ 9-THC is primarily due to activation of the CB1 receptor in the vagal circuitry of the brainstem.^[1] While the mechanism of this syndrome remains unknown, there

Access this article online	
Website: www.ijpm.info	Quick Response Code 
DOI: 10.4103/0253-7176.122241	

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are hypotheses which fall into two categories 1) dose dependent build-up of Cannabinoid and related effects of Cannabinoid toxicity and, 2) the functionality of Cannabinoid receptors in the brain and, particularly, in the hypothalamus (which regulates body temperature and the digestive system).^[2]

The enteric effects of marijuana (e.g., decreased gastrointestinal motility) are thought to override the brainstem-mediated antiemetic effects to promote emesis; however, this does not fully explain antiemetic action of cannabis.^[1] It is also suggested that instead of Δ^9 -THC, other lipid-soluble components of marijuana such as non-intoxicating Cannabinoid could induce vomiting, since high doses of this compound have been reported to cause emesis in the house musk shrew.^[4] “Hot Bath” effects may occur via “disequilibrium of the thermoregulatory system of the hypothalamus”.^[4] The desire for hot showers is either to counteract the marijuana-induced decrease in core body temperature or is a direct response to CB1 receptor activation in the hypothalamus.^[4,5]

CONCLUSION

Considering the ambiguity of the role of marijuana

in producing this syndrome, further research is warranted to enhance our understanding of the role of Cannabinoids in gastric motility. Considering the mass of case reports published so far and the possibility of familial effects, we wonder if it opens a portal for a new diagnosable entity.

REFERENCES

1. Darmani NA. Cannabinoid-induced hyperemesis: A conundrum-from clinical recognition to basic science mechanisms. *Pharmaceuticals* 2010;3:2163-77.
2. Gates P. Cannabinoid Hyper emesis Syndrome. Available from: <http://ncpic.org.au> [Last accessed on 2012 Dec 30].
3. Allen JH, De Moore GM, Heddle R, Twartz JC. Cannabinoid hyper emesis: Cyclical hyper emesis in association with chronic cannabis abuse. *Gut* 2004; 53:1566-70.
4. Kwiatkowska M, Parker LA, Burton P, Mechoulam RA. Comparative analysis of the potential of cannabinoid and ondansetron to suppress cisplatin-induced emesis in the *Suncus murinus* (house musk shrew). *Psychopharmacology* 2004; 174:254-9.
5. Chang YH, Windish DM. Cannabinoid hyperemesis relieved by compulsive bathing. *Mayo Clin Proc* 2009; 84:76-8.

How to cite this article: Gupta N, Ojo O, Muruthettuwagama K. Cannabinoid hyper-emesis syndrome: An enigma. *Indian J Psychol Med* 2013;35:405-6.

Source of Support: Nil, **Conflict of Interest:** None.