

Research Commentary by Dr Peter Gates

An Internet survey of marijuana and hot shower use in adults with cyclic vomiting syndrome (CVS) ? A comment on Venkatesan and colleagues (2014)

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A curious newly proposed condition, cannabinoid hyperemesis, has been of recent interest to clinicians across the globe. The first published case came in 2004, published by Allen and colleagues, describing recurrent nausea and vomiting associated with abdominal pain that is somewhat relieved by taking a hot shower or bath or abstaining from cannabis use. Since this time, many more case reports have been published, as well as a handful of reviews of case reports, with very little advancement in the details or mechanics of the condition.

Existing theories include: 1) a dose dependent build-up of cannabinoids 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). Importantly, however; organic disease has not been ruled out as a possible cause. Prior to the case reports of cannabinoid hyperemesis, clinicians were aware of cyclic vomiting syndrome (CVS), a chronic disorder much like cannabinoid hyperemesis, characterized by recurrent episodes of nausea and vomiting that could be alleviated in some instances by hot shower or bath (but did not involve cannabis use). Importantly, as noted by Chuong and colleagues (2012), up to 38% of patients with CVS self-report to be regular cannabis users. As such, CVS fits the profile as one such organic disease. Thus, to investigate the role of CVS in cannabinoid hyperemesis, Venkatesan and colleagues (2014) instigated an internet survey of cannabis use among 514 CVS patients (with 437 providing information on cannabis use) from members of the Cyclic Vomiting Syndrome Association of the Medical College of Wisconsin.

Patients were a mean of 34 (SD=12) years of age, mostly female (63%), Caucasian (92%) and from the US (82%). The mean duration of symptoms was over 10 years. Notably, the vast majority (81%) reported ever using cannabis. Those reporting ever using cannabis were more likely to be male, have comorbid mental health concerns (such as anxiety) and more likely to take hot showers (although 48% of non-users also reported taking hot showers compared to 72% of users). When investigating motivations to use cannabis, most patients reported using to reduce stress (90%), improve appetite (89%), and improve nausea (80%). As such, it is feasible that individuals diagnosed with cannabinoid hyperemesis may in fact exhibit symptoms of vomiting and nausea, as well as hot showering, which could reflect CVS rather than be causal from cannabis use.

Given the increasing number of sufferers from cannabinoid hyperemesis and CVS (which likely go underreported from misdiagnosis or lack of awareness) and a lack of explained distinction between the two

proposed syndromes, this is an area warranting future research. Such research will need to examine any interactions between shared genetic and environmental factors that may dispose CVS patients to cannabis use and, moreover, examine the underlying mechanisms explaining any causal role between chronic cannabis use and nausea and vomiting.

References:

Allen, J.H., De Moore, G.M., Heddle, R., & Twartz, J.C. (2004). Cannabinoid hyperemesis: Cyclical hyperemesis in association with chronic cannabis abuse. *Gut* 53, 1566-1570.

Choung R.S., Locke, G.R., Lee, R.M., Schleck, C.D., Zinsmeister, A.R., & Talley, N.J. (2012). Cyclic vomiting syndrome and functional vomiting in adults: association with cannabinoid use in males. *Neurogastroenterology and Motility* 24,(20?26):e21.

Venkatesan, T., Sengupta, J., Lodhi, A., Schroeder, A., Adams, K., Hogan, W.J., Wang, Y., Andrews, C., & Storr, M. (2014) An internet survey of marijuana and hot shower use in adults with cyclic vomiting syndrome (CVS). *Experimental Brain Research* 232, 2563-70.