

The Synthetic Cannabinoid Withdrawal Syndrome

By now, most of us are familiar with the relatively new psychoactive drug known as “K2” or “Spice”. It is a synthetic cannabinoid that has been on the market in the US as early as 2005 and sold as incense blends or herbal preparations with one or more synthetic compound additives. Users commonly present to the emergency department with **anxiety, psychosis, tachycardia, nausea and vomiting, but have had even more serious outcomes such as seizures, renal failure and myocardial infarctions**. Due to the ever-changing chemical compounds and multiple recipes of the synthetic drug, there has yet to be a standardized test for the drug either in urine or in blood. And the lack of any actual THC component has allowed this synthetic drug to evade a typical urine drug screen. Although chemically different, these synthetic cannabinoids have strong affinity for the same receptors as regular cannabis, specifically CB1 and CB2, which allows the drug to produce similar effects without the patient’s risk of being caught by drug screening. What is less familiar to providers is the associated withdrawal syndrome. We will discuss two cases of synthetic cannabinoid withdrawal syndromes and their outcomes.

Case 1:

A 22 yo woman with no PMH presents to the ED with progressive myalgias for several hours. She admitted to smoking 3g of an incense known as “Mr. Nice Guy Original Flavor with Relaxanol” daily for 1 year until 6 days ago when she abruptly quit. Since then, she has experienced chills, sweats, drug cravings, headaches, anxiety, insomnia and weight loss. Her initial vitals were BP 110/78, HR 100, RR 28, O2 sat 98% and afebrile. Her physical exam revealed an anxious female with carpopedal spasm. Labs showed only a mild leukocytosis and metabolic acidosis. She was treated with bolus fluids and lorazepam and her vitals and appearance improved. She was discharged from the ED with a short course of benzos and was found to be doing well one week post discharge.

Case 2:

A 20 yo man presented to the ED with chest pain, palpitations, dyspnea, diaphoresis, tremors, and a headache. He reported using 3g of daily “Mr. Nice Guy” for a year and a half until a month ago when he decreased to 1g daily. Last use was 6 days ago. Two days ago, he attempted to alleviate his symptoms with marijuana with no success. The only thing that helped was when he took one of his friend’s quetiapine the day before presentation. His initial vitals were BP 106/58, HR 120, RR 18 and afebrile. Physical exam revealed an anxious, tremulous male and labs revealed only a CPK elevated to 753. Benzos were given in the ED but were unsuccessful in relieving the patient’s symptoms. During admission, hydroxyzine and diphenhydramine were also given with no relief of symptoms. Finally, quetiapine was given with significant relief. The patient was ultimately discharged home with quetiapine and did not require increasing doses.

Discussion:

The significant toxicity of synthetic cannabinoids is thought to be due to the elevated receptor affinity for cannabinoid receptors, with some reports stating the potency is up to 100 times greater than that of THC. This would explain why the withdrawal syndrome of synthetic cannabinoids is similar to but much stronger than that of cannabis, which can be described as **anxiety, myalgias, chills and anorexia**. However, both withdrawal syndromes are similarly treated with symptomatic control, including **fluids, benzos, antipyretics and antiemetics**. The withdrawal syndrome of synthetic cannabinoids is an important new syndrome to keep in mind when evaluating patients with these complaints in the ED, especially when there is an unclear history and when lab work is not revealing.

Reference

Nacca, Nicholas et al. "The synthetic cannabinoid withdrawal syndrome." *J Addict Med*. 2013 Jul-Aug; 7(4): 296–298. PMC. Web. 30 May 2015.