Synthetic Marijuana Use and Development of Catatonia in a 17-year-old Male

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Synthetic marijuana or “K2” is marketed as being “legal and safe,” despite the U.S. Drug Enforcement Administration’s (DEA) classification of its five most common active ingredients as Schedule I controlled substances. Manufacturers of synthetic marijuana avoid legal restrictions by substituting various chemicals in their mixtures, while the DEA continues to update its list of banned cannabinoids. Such manufacturing practices result in widely variable chemical composition of these products. Although youths experiment with synthetic marijuana because of its availability and purported safety, accounts of its deleterious health effects have started to emerge.

Case Report
A 17-year-old male with no history of psychosis was admitted to psychiatry for worsening confusion and bizarre behavior. On admission, he displayed posturing, stereotyped movements, a fixed look of distress, mutism and rigidity. Aside from mild hypertension, his vital signs were normal. Labs were unremarkable except for a urine toxicology screen that was positive for cannabinoids. Head CT was negative. Scheduled neuroleptics were initiated. Because the patient’s symptoms were consistent with excitatory catatonia, a diagnostic lorazepam challenge of 2 mg IM was administered and neuroleptics were discontinued. After the challenge, the patient’s catatonic symptoms improved, and he was able to converse. He described auditory and visual hallucinations and disorganized thought process. His catatonic symptoms recurred approximately seven hours after the lorazepam challenge, consistent with the expected therapeutic response. Because of the patient’s marked response to lorazepam and negative organic work-up, the diagnosis of psychosis with catatonic features was confirmed.

Oral lorazepam was scheduled, but the patient’s improvement plateaued, and he relapsed into a catatonic state. Electroconvulsive therapy (ECT) was indicated and pursued. By his sixth ECT treatment, the patient showed complete resolution of motor symptoms, denied hallucinations, and was tolerating a cautious titration of olanzapine. It was at this time that he disclosed he used an estimated 2 to 3 g of synthetic marijuana (K2) daily for two months prior to admission.

Discussion
This case underscores the danger of synthetic cannabinoids. Some of the synthetic cannabinoids used in K2 have a higher affinity for the receptor that binds to tetrahydrocannabinol (THC) than others. The variable contents of K2 and this higher affinity binding contribute to the sometimes amplified and unpredictable response users have to the drug, with psychosis being reported in some cases. Currently, there are limited data on the effects of synthetic marijuana on the brain. This case clearly demonstrates the urgency with which the medical and scientific community must address the many unknowns that surround synthetic cannabinoids.

REFERENCES