



The Coast of Sorrento, Italy

PIC QUESTION OF THE WEEK: 11/14/11

Q: Can you describe the content and effects of what is referred to as synthetic marijuana?

A: *Synthetic marijuana* is a term used to identify several substances used as alternatives to marijuana. Until recently, these products could be purchased at gas stations, tobacco shops, and on the internet. They are now considered illegal in the United States. The preparations are generally smoked and elicit responses similar to those of Δ^9 -tetrahydrocannabinol (THC), the primary psychoactive constituent of marijuana. On occasion, they have been used orally. One product referred to as K2 usually contains the synthetic cannabinoid JWH-018 as the active ingredient. Additional formulations such as Spice, Mr. Smiley, and Black Mamba often contain a blend of different synthetic cannabinoids including JWH-073, JWH-175, CP-47,497, or similar compounds that are then sprayed with JWH-018 during production. The initials JWH represent the developer of these compounds while CP is the abbreviation for cyclohexolphenol. Synthetic marijuana produces effects similar to those of THC because each serves as an agonist of CB₁ and CB₂ receptors in the CNS. The CB₁ receptor stimulates the euphoric and psychoactive effects of THC and synthetic compounds while CB₂ influences sensitivity to pain and possibly the regulation of mood and behavior. The most common complications reported in abusers of JWH-018 and other synthetic marijuana products involve the CNS. They include anxiety, hallucinations, numbness, paranoia, psychosis, slurred speech, seizures, and tremor. Other adverse consequences consist of dilated pupils, hypertension, palpitations, chest pain, tachycardia, and hypokalemia. These effects appear to peak and disappear within 30 minutes after ingestion. Treatment is generally supportive. Theoretically these products could result in serotonin syndrome because of their structural similarity to the neurotransmitter serotonin as well as their ability to inhibit monoamine oxidase (MAO) when administered in high doses. Long-term effects of synthetic cannabinoids have yet to be identified; however, they are probably comparable to those of THC. These compounds are not structurally similar to THC, thus they are undetectable in most urine screens. Furthermore, because of these structural differences, they were not legally considered analogues of THC and thus not automatically designated as controlled substances. The Drug Enforcement Administration (DEA) has temporarily classified five synthetic cannabinoids, including JWH-018, as Schedule I substances. The action, which went into effect on March 1, 2011, makes possession and/or distribution of these products illegal for at least 1 year until a permanent decision on their status has been made.

References:

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