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28. Features of Synthetic Cannabinoid Exposures: Report from the ToxIC Registry

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Background: Synthetic cannabinoid (SC) exposures often prompt ED visits and toxicology consultation. This is presumably due to clinical J. Med. Toxicol. effects uncommon to traditional marijuana (*Cannabis sativa*) including seizures, agitated delirium, and myocardial ischemia. Objective: We sought to examine the features of SC exposures reported to the ToxIC registry, including demographics, street names, routes of exposure, and clinical effects.

Methods: All cases entered into ToxIC from 2011 to October 2014 selected as “Bath Salt, Synthetic Cannabinoid, other Designer Drug, or Agent referred to by a Street Name” were then sorted to identify SC cases. Non-SC and unknown exposures were excluded. Data were reviewed for the features below.

Results: One hundred eight cases total, average age 27.1 years (SD 11.6; range, 14–59), 86 % male. Most common street name mentions: “K2” (n=36), “spice” (n=17), “black mamba” (n=12), and “crazy monkey” (n=6). When route listed (55 cases) the majority were inhalation (92 %, 2 % oral). Most common clinical effects reported were agitation (n=36, 33.3 %), coma/CNS depression (n=14, 13 %), delirium/psychosis (n=8, 7.4 %), acute kidney injury (n=6, 5.5 %), respiratory depression (n=6, 5.5 %), and seizure (n=5, 4.6 %).

Discussion: Synthetic cannabinoid receptor agonists are relatively new compounds that have significant recreational abuse popularity. In this cohort, young males with inhalation exposure were by far the most common. Although these exposures were not confirmed by laboratory analysis, the nature of this database (cases seen and entered by a medical toxicologist directly caring for the patient) increases the likelihood of accurate reporting. These compounds have widely varied content, leading to unpredictable clinical effects atypical of *C. sativa*, including those listed above.

Conclusion: In this study, young males were the most likely to use SCs which are sold under a variety of street names, and inhalation was the most common route by far. Clinical features differ from those seen with marijuana and may be life-threatening. Clinicians caring for these patients should be alert to this broader spectrum of effect.