

Synthetic Marijuana 'Spice' Linked to Stroke

Dan Rankin

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Ischemic stroke may be added to the list of health risks already associated with the recreational street drug spice, a team of neurologists from the University of South Florida (USF), in Tampa, suggests.

In a new report, the authors discuss the cases of 2 young and previously healthy siblings aged 26 and 19 years who experienced acute ischemic stroke shortly after smoking the Schedule I synthetic marijuana known as spice. Imaging results suggested the strokes may have been embolic.

The lead author of the article, Melissa J. Freeman, MD, said that all the tests they ran on the siblings to determine whether they were genetically predisposed to developing blood clots came back negative.

"We're proposing that perhaps it's a cardioembolic etiology, because smoking the synthetic marijuana spice has been associated in the medical literature with myocardial infarction and seizures," Dr. Freeman, a USF vascular neurology fellow, told *Medscape Medical News*. "If people are having heart attacks from it, perhaps there is a cardiac reason for the strokes."

The study [was published](#) in the December 10 issue of *Neurology*.

Spice-Associated Effects

The authors cite tachycardia, vomiting, agitation, confusion, and hallucinations as common side effects of smoking spice, adding that national news media outlets have also reported on spice-associated deaths within the past several months.

Patient A, a 26-year-old man, was brought to the emergency department with sudden-onset dysarthria, expressive aphasia, and weakness in his right face and arm.

He was found to have a clot in the left middle cerebral artery (MCA), which was confirmed by computed tomographic angiography, and was treated with tissue plasminogen-activator (tPA). He improved clinically and did not return for his follow-up visit, they write.

Patient B, a 19-year-old woman, was recognized by staff members as the sibling who had visited her brother on his previous admission. Magnetic resonance imaging showed a large MCA

distribution infarction, with punctate infarcts in the right cerebral hemisphere, "suggestive of a proximal embolic event," the authors note. "She did not arrive within the window for tPA."

She stabilized neurologically, but at the last office visit, she still had right hemiparesis and expressive aphasia, they note.

Although both patients tested positive for regular cannabis and had in the past smoked conventional marijuana, each reported that they had smoked spice shortly prior to onset of the stroke and that they had obtained the drug from the same supplier.

The active ingredient in the spice smoked by the siblings in this report was JWH-018, a chemical compound first developed in the mid-1990s. But different compounds are constantly being developed by spice manufacturers, Dr. Freeman said. That makes them harder to regulate and more dangerous for users, she said.

"The chemicals might be slightly different on a molecular level and therefore wouldn't be part of the group that is considered illegal," said Dr. Freeman. "There is so much that is unknown, which is part of the problem. If it were one specific compound, it would be a lot easier to research."

Limitations to the findings listed by the authors in the article include possible unidentified contaminants in the product the siblings consumed and the fact that an unknown genetic mechanism could have caused the stroke, given the relationship of the patients.

Anything Pot Can Do...

In [an editorial](#) accompanying the publication, John C. M. Brust, MD, from the New York Neurological Institute and Columbia University College of Physicians and Surgeon, New York City, points out that many synthetic cannabinoids have several times the potency or efficacy of tetrahydrocannabinol (THC), the active ingredient in natural marijuana.

Citing 59 reported cases of marijuana-related strokes in the medical literature, Dr. Brust concluded by saying, "If marijuana can cause ischemic stroke, and if anything pot can do spice can do better, neurologists will likely encounter increasing numbers of spice-associated strokes in the years ahead."

In the meantime, Dr. Freeman encouraged doctors who see stroke patients who are not within the age range of people normally considered at risk for stroke to ask whether they have smoked spice recently.

"I think it should be reported, because we won't be able to figure anything more out unless we have more information," she said. "I think it's very important that they screen high school- and college-aged students. The prevalence of younger people smoking the substance is so much higher than I thought it would be."

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