

## Plant Food and Incense: The New Substances of Abuse

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### Introduction

The Internet provides a means of reaching and providing information to a wide population. The authors have noted the availability of substances of abuse packaged conveniently as products for other purposes such as ‘plant foods’, ‘incense’ and ‘bath salts’ which are consumed by abusers for the “highs” they provide.<sup>1</sup> Novel synthetic designer drugs that act as stimulants such as gamma hydroxyl butyric acid (GHB) or “Georgia Home Boy” tablets are available for purchase over the Internet. It has been noted that the various substances produced are changed “in response to market trends and legislative controls”.<sup>2</sup> The European Monitoring Center for Drugs and Drug Addiction revealed that in 2010, there were 40 completely new substances taken by United Kingdom (UK) recreational drug users.<sup>3</sup>

‘Plant Food’ includes psychoactive herbs like the salvia divinorum plant which is used in South American countries in religious rituals to experience dissociative effects and visions. Although information on the side-effects is limited, there are a few reports in the literature which describe serious consequences of salvia abuse. The first case reported in 2005 involved an adolescent who experienced an acute mental state change with paranoia for 3 days.<sup>4</sup> Other symptoms noted were déjà vu experiences, thought block, blunting of affect and slow speech. In the second case, the patient experienced an acute psychosis and paranoia after smoking salvia.<sup>5</sup> The symptoms persisted and required treatment with an antipsychotic but when the patient had stabilised and the antipsychotic was taken off, the patient’s symptoms recurred. The authors highlighted that the patient carried a genetic risk for schizophrenia. A third report was of a patient who experienced bizarre feelings of depersonalisation.<sup>6</sup>

### Cases

The first author assessed a patient who purchased salvia in packets of various strengths through the Internet. He described terrifying visual and auditory hallucinations in the acute phase of intoxication. Although brief, lasting up to about 14 minutes, the symptoms shared 2 similarities with the previous cases reported in the literature: the abruptness of the symptoms and the terrifying nature of the

experiences. The actual psychoactive compound in salvia has been identified as salvinorin A, a potent and selective kappa—opioid receptor agonist and a more potent D2 receptor agonist.<sup>7</sup> It is this latter action that is the likely cause of its psychoactive effects. Unlike other hallucinogens such as lysergide (LSD), it has no effects at the serotonin 5-HT2A receptor.<sup>8</sup> Interestingly laboratory experiments with salvinorin A in rats have resulted in depressive-like effects.<sup>9</sup>

The difficulties with these new substances are in sometimes establishing the exact psychoactive compound, as the experience with a second case reveals. This was a patient who purchased over the Internet, a substance named ‘Buzz’ and labelled as ‘Incense’ with the warning that it was not for human consumption. The patient experienced a prolonged period of hallucinations and a confusional state lasting almost a week. He exhibited bizarre behaviour and subsequently had retrograde amnesia for the whole episode. The product packaging has content labelling of various plants used in herbal medicines. A quick search of the literature did not reveal the possibility that those listed herbs could have precipitated the psychiatric symptoms. This raises the possibility that other substances may have been incorporated into the incense which was smoked in a rolled cigarette paper.

### Discussion

In presenting these 2 cases, we hope to urgently highlight the new “need trend” amongst addicts in Singapore and the measures they are now taking to achieve “legal highs”. It is very likely that the problem may be greater than what we realise. The reality is that there is very little epidemiological data on the use of these newer recreational substances. A recent survey of salvia use in the United States (US) amongst individuals aged 12 years and older revealed that the lifetime prevalence had increased 83% from 0.7% in 2006 to 1.3% in 2008.<sup>10</sup> It is likely that the abuse of these new substances is increasing globally.

Secondly, abusers are at high risk for side-effects and adverse effects because some of the compounds are newly synthesised and their psychoactivity unknown; the purity and

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safety of these preparations are also not guaranteed. As with many substances of abuse, manufacturing is unregulated and additives and other compounds may adulterate the product.

A third concern is the need to raise awareness amongst clinicians particularly those in emergency rooms and primary care services. Clinicians need to be familiar with the new trends and substances that are being abused.<sup>11</sup> Active enquiry about Internet purchases and use need to be made, although there is no assurance that a patient will actually report truthfully.

Finally, there is a need for the authorities, especially those in drug enforcement to monitor these emerging trends closely. The problem may be more pervasive than we realise as only a few cases with complications are surfacing. It may be more challenging to contain and curb this trend. If at all possible, studies in the area of recreational drug use would help in determining changing patterns of abuse and prevalence to allow for prevention work.

### Conclusion

The challenges in dealing with new drug abuse trends are enormous, and span issues from social and scientific to clinical and legal matters. Social processes play a significant part in drug use and we are likely seeing changes related to globalisation of our population and social transformations. Scientific research may not be ahead of these new trends but we need to step-up developments to detect these novel compounds, and determine their effects on human health. Clinicians need medical information that can help them manage patients who present with unusual toxicity. We need to be able to disseminate information quickly enough to raise awareness of the constantly evolving trends in psychoactive drug abuse. We also need to ponder whether any legislative solutions are at all possible for what is becoming a seemingly ubiquitous problem.

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