

## Case Reports

# Ingestion of Hawaiian Baby Woodrose Seeds to Obtain a Legal High

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### Introduction

The use of plant material to experience a hallucinogenic effect has been popular for centuries. This practice has become prevalent among adolescents but has only recently been noted in the professional literature. It is known as a legal high and the products are often marketed as such. They can be purchased via the Internet or in local shops in most countries in the world, including the United States. The following case presents an acute ingestion of Hawaiian Baby Woodrose (HBW) seeds.

### Case Report

Mr. F, a 23-year-old Caucasian man, presented to the emergency department with an alteration in mental status in the context of an acute ingestion. Family notified emergency medical services; paramedics found him unclothed and ambulating in the street. He was combative when approached, making it necessary for police to use an electroshock weapon to bring him to the hospital for evaluation and treatment. Given his agitation, Mr. F was placed in restraints and administered intravenous haloperidol and lorazepam.

He was tachycardic (heart rate = 154 bpm) and hypertensive (blood pressure = 152/96 mm Hg). His other vital signs were unremarkable. The findings of physical examination were significant for normal-sized, minimally reactive pupils, 2 contusions on his back, and cool extremities bilaterally; pertinent negative findings included a lack of clonus, 2+ reflexes, and normal muscle tone. Laboratory tests during admission revealed leukocytosis, an anion gap metabolic acidosis secondary to an

elevated lactic acid level (18.1 mmol/L), and an elevated creatine kinase level (2330 U/L). He had developed acute kidney injury evidenced by a creatinine level of 1.70 mg/dL; this was thought to be secondary to an electroshock-induced or drug-induced rhabdomyolysis. The results for urine drug screen were positive for cannabinoids; they were negative for amphetamines and cocaine. An electrocardiogram confirmed the sinus tachycardia but was otherwise unremarkable. The findings of the head computed tomography scan were normal.

Mr. F was initially unable to contribute any history. Collateral information obtained from family revealed that he had a history of experimenting with natural supplements and had recently ingested 30 HBW seeds. He was not prescribed any medications. Poison control was contacted to discuss HBW's toxicity profile; a psychiatry consultation was requested to evaluate for the possibility of a suicide attempt.

Over 24 hours, his acute kidney injury and rhabdomyolysis resolved with hydration, and his mental status returned to baseline. Mr. F confirmed that he had ingested the HBW seeds. He had purchased them online after researching substances with hallucinogenic properties, but admitted that he had had minimal information regarding expected effects before ingestion. Other than reporting visual hallucinations and feelings of dissociation, he was unable to remember the details surrounding his admission. Mr. F denied that he took the seeds in a suicide

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attempt and family agreed with this assessment. He was discharged home with outpatient psychiatric follow-up.

### Discussion

HBW (*Argyreia nervosa*) is a perennial climbing vine native to the Indian subcontinent and belongs to the family Convolvulaceae.<sup>1</sup> The seeds contain lysergic acid amide, which is structurally related to lysergic acid diethylamide; HBW seeds have the highest percentage of ergoline constituents among all Convolvulaceae members.<sup>2</sup> However, when compared with lysergic acid diethylamide, HBW has a lesser degree of hallucinogenic effect and a greater degree of autonomic reactivity.<sup>3</sup> A study compared the pharmacologic profiles and found that lysergic acid amide exhibited lower binding affinities than lysergic acid diethylamide for all tested receptor subtypes, despite their similar chemical structure.<sup>4</sup> Lysergic acid amide was noted to prefer serotonergic, dopaminergic, and adrenergic receptors, but not muscarinic or histaminergic receptors, which led to the conclusion that the pharmacologic effects of lysergic acid amide are mediated by the former 3 systems.

Consumers of the seeds reported nausea, anxiety, suicidal ideation, a sense of derealization, distortions

in time, memory loss, and hallucinations. Tachycardia, hypertension, pupil dilation, flushing, and polyuria were noted.<sup>1–3,5</sup> He experienced agitation, visual hallucinations, and feelings of dissociation; his examination findings of hypertension, tachycardia, and leukocytosis were also typical of other cases. Given the ingestion of a known hallucinogen, its similarity to previous reports of HBW intoxication, hallucinations, hypertension, and agitation, it is reasonable to conclude that the clinical picture was most consistent with the effects of HBW seeds and not due to cannabis. A diagnosis of serotonin syndrome was considered, but felt unlikely as he had not ingested other substances with serotonergic actions.

Consultation psychiatrists should become familiar with less frequent substances of abuse, as ingestions may result in medical and legal consequences. Counseling patients on the risks of natural supplements is an important part of the psychiatric evaluation; patients should be referred for appropriate follow-up to address substance use and possible co-occurring medical or psychiatric conditions.

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