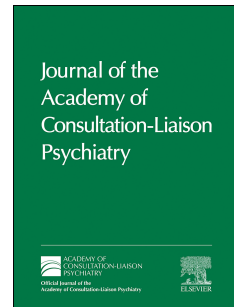


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A “trip” to the ICU: intravenous injection of psilocybin

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Title: A “trip” to the ICU: intravenous injection of psilocybin

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INTRODUCTION

Psychoactive fungi, colloquially known as “magic mushrooms,” are known for their hallucinogenic properties mediated by psilocybin, a tryptamine-like alkaloid metabolized to the active constituent psilocin, a 5-HT_{2A} receptor agonist.¹ While usually taken orally, there are anecdotal reports on the internet of the recreational injection of psilocybin, though the professional literature on this practice is scant.^{2,3} Here, we describe a case of a 30-year-old man who injected psilocybin intravenously resulting in an extended stay in the intensive care unit (ICU) due multiple-system organ failure.

CASE

Mr. X was a 30-year-old man with bipolar disorder type I and a history of intravenous drug use admitted to the hospital after being brought to the emergency department (ED) by family concerned that he was confused.

History gathered from his family was remarkable for recent non-adherence with his prescribed psychotropics (risperidone and valproate) and subsequent cycling between depressive and manic states. He had reportedly been researching ways to self-treat his opioid dependence and depression.

In his reading he encountered reports of therapeutic effects of micro-dosing LSD and hallucinogenic psilocybin mushrooms prompting him to inject what he had named “mushroom tea” – psilocybin mushrooms boiled down in water. He then “filtered” this substance by drawing it through a cotton swab before directly injecting the solution intravenously. Over the next several days, he developed lethargy, jaundice, diarrhea, nausea, and hematemesis before he was found by family and taken to the ED.

Initial exam was remarkable for O₂ saturation on room air of 92%, heart rate of 100, and blood pressure of 75/47. He was noted to be ill-appearing with dry mucous membranes, mild cyanosis of the lips and nail beds, and jaundiced skin. His abdomen was diffusely tender to palpation without rebound or guarding. He was grossly confused and unable to meaningfully participate in an interview.

Laboratory studies revealed thrombocytopenia, hyponatremia, hyperkalemia, hypochloremia, hypocalcemia, acute renal insufficiency, and acute liver injury. Cardiac workup revealed elevated cardiac enzymes and his electrocardiogram was remarkable for sinus tachycardia and early repolarization. Mr. X was then transferred to the ICU for evidence of multi-organ failure and he was started on intravenous fluids, multiple vasopressors, broad spectrum antibiotics, and anti-fungal medications. His hospital course was further complicated by septic shock and acute respiratory failure requiring intubation on hospital day two and disseminated intravascular coagulation requiring plasmapheresis. Cultures confirmed bacteremia (ultimately cultured as *Brevibacillus*) and fungemia (ultimately cultured as *Psilocybe cubensis* – i.e. the species of mushroom he had injected was now growing in his blood). He was treated for a total of 22 days in the hospital with eight of them in the ICU. At the time of writing, he is currently still being treated with a long-term regimen of daptomycin, meropenem, and voriconazole.

DISCUSSION

While it is evident that our patient was harmed through his use of psilocybin, current investigations of its therapeutic potential as an adjunct to psychotherapy in treating a variety of psychiatric conditions – including obsessive compulsive disorder, substance abuse disorder, anxiety, and depression – have been documented.^{4,5} The case reported above underscores the need for ongoing public education regarding the dangers attendant to the use of this, and other drugs, in ways other than they are prescribed. It is unclear whether active intravascular infection with a psychoactive fungus such as *Psilocybe cubensis* may prompt persistent psychoactive effects as seen with ingestion of the same species which could further contribute to changes in perception and cognition.

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