Case Report

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2 Cases of Acute Confusional State with Autonomic Symptoms after Designer Tryptamine Abuse

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Abstract

We herein report 2 cases of acute tryptamine abuse. Both cases developed confusional state within 1 hour of 4-acetoxy-N-methyl-N-isopropyl-tryptamine ingestion. On admission, they presented confusion with marked mydriasis. In addition, one case showed hypertension, low grade fever, and hyperhidrosis, and the other showed the contraction of pilomotor muscles. Confusion and other autonomic symptoms improved gradually with intravenous drip infusion of saline. Tryptamine abuse should be considered as differential diagnosis in cases of acute confusional state with various autonomic symptoms.

Keywords: 4-acetoxy-N-methyl-N-isopropyl-tryptamine; Confusional state; Autonomic symptoms

Introduction

Designer tryptamine such as 5-methoxy-N, N-diisopropyltryptamine (5-MeO-DIPT) and 5-methoxy-N-methyl-N-isopropyltryptamine (5-MeO-IPT) have been restricted legally in Japan. However, these tryptamine analogs are popular among recreational drug users because of their hallucinogens. Previous reports described neuropsychiatric symptoms by these drugs are limited [1-4]. We report 2 cases of acute confusional state and multiple autonomic symptoms after oral ingestion of 4-acetoxy-N-methyl-N-isopropyl-tryptamine (4-AcO-MIPT).

Case Presentation

Case 1

A 27-year-old Japanese man was brought to the emergency room because he was excited after 30 minutes from ingestion of 10 mg of 4-AcO-MIPT (**Figure 1**). On examination, he was not oriented with a Glasgow Coma Scale score of 12 (E4V3M5). He smiled and shouted with looking around restlessly and could not communicate properly with medical staffs. Blood pressure was 156/112 mmHg, heart rate was 140/minutes, and body temperature was 37.5 °C He presented severe hyperhidrosis. Pupils were 8 mm in diameter equally without response to light. No nystagmus, weakness, asterixis, pathological reflex, and neck stiffness were observed. Routine laboratory examination was normal except for the positive reaction of amphetamine. Brain CT showed normal.

Figure 1 4-AcO-MIPT which our 2 cases ingested.

We injected 15 mg of diazepam to resolve the agitative state. He was able to answer some questions about 2 hours after receiving an intravenous drip infusion of saline. He became alert after 6 hours after admission. He remembered neither nausea nor visual hallucinations, but the brightness and sweating after taking 4-AcO-MIPT. He was discharged the next day without neurological deficit other than a partial anterograde amnesia.

Case 2

A 27-year-old Japanese woman, who was a wife of case 1, was brought to the emergency room as she developed nausea following disorganized behavior after 30 minutes from the ingestion of 5 mg of 4-AcO-MIPT. On examination, she was not oriented with a Glasgow Coma Scale score of 14 (E4V4M6). She sat on the stretcher without expression. She was able to answer some questions and apologized repeatedly. Blood pressure was 120/76 mmHg, heart rate was 152/minutes, and

body temperature was 36.0 °C. She presented the contraction of pilomotor muscles. Pupils were 7 mm in diameter equally with slight response to light. No nystagmus, weakness, asterixis, pathological reflex, and neck stiffness were observed. Routine laboratory examination and screening of illegal drugs were normal. Brain CT showed normal.

We injected 10 mg of diazepam because she suddenly stood up on the stretcher with screaming. She became alert about 2 hours after receiving an intravenous drip infusion of saline. She remembered neither visual hallucinations nor sweating, but the brightness and nausea after taking 4-AcO-MIPT. She was discharged the next day without neurological deficit other than a partial anterograde amnesia.

Discussion

Several drugs are regulated legally as 'designated drugs' in Japan and more than 10 kinds of tryptamine analogs were listed for restriction. 4-AcO-MIPT has also been restricted legally since 2015. The synthetic 4-substituted tryptamines including 4-AcO-MIPT seem to have similar actions; however, scientific information of these drugs is limited. The hallucinogenic effects of 4-hydroxydimethyltryptamine (4-OH-DMT, Psilocin), which is a representative 4-substituted tryptamine, arise within 2 hours and disappear within 4 to 8 hours [5]. 4-OH-DMT is an agonist for 5-HT_{2A} and other serotonin receptors, which leads to sympathetic stimulations with hallucinogenic effects [6,7].

As far as our literature searches, only one case of 4-AcO-MIPT abuse has been published in Japanese [2]. Ando and his colleagues reported a 28-year-old Japanese man presented consciousness disturbance, disinhibitory behavior, visual hallucination, nausea, hyperhidrosis, and mild mydriasis after 4-AcO-MIPT ingestion. Our 2 cases also presented consciousness disturbance and disinhibitory behavior with various autonomic symptoms.

The offending drug in our cases was informed as 4-AcO-MIPT on admission however, it is difficult to identify the offending drug from patients' information alone. Gas chromatography-mass spectrometry and liquid chromatography- mass spectrometry was useful to identify the offending drug [1]. However, these laboratory equipment's were not popular. It is important to regard tryptamine analogs as one of the causes of acute confusional state with autonomic symptoms.

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