



Case report

A fatal poisoning with 5-methoxy-*N,N*-diisopropyltryptamine, Foxy

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Abstract

A fatal overdose involving case by 5-methoxy-*N,N*-diisopropyltryptamine (5-MeO-DIPT) is reported. 5-MeO-DIPT and its two metabolites, 5-hydroxy-*N,N*-diisopropyltryptamine (5-OH-DIPT) and 5-methoxy-*N*-isopropyltryptamine (5-MeO-NIPT), were identified by LC–MS. The level of 5-MeO-DIPT, 5-OH-DIPT and 5-MeO-NIPT in blood and urine was 0.412, 0.327 and 0.020 µg/ml, and 1.67, 27.0 and 0.32 µg/ml, respectively. These blood and urine levels were higher than published data for such poisoning. © 2005 Elsevier Ireland Ltd. All rights reserved.

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1. Introduction

Foxy is a slang name for 5-methoxy-*N,N*-diisopropyltryptamine (5-MeO-DIPT). It has hallucinogenic properties, similar to other tryptamine compounds. The users of 5-MeO-DIPT experienced euphoria, dilated pupils, empathy, visual and auditory distortions, feelings of love and emotional distress as well as nausea, vomiting and diarrhea [1,2]. 5-MeO-DIPT was mainly metabolized 5-hydroxy-*N,N*-diisopropyltryptamine (5-OH-DIPT) and 5-methoxy-*N*-isopropyltryptamine (5-MeO-NIPT) in human [3].

We shall discuss about the findings at autopsy and the toxicological report following a fatal overdose.

2. Case history

The decedent (male A) was a 29-year-old male. The male A was a sexual partner of male B, who, in search of his sexual pleasure, injected an aqueous solution of 5-MeO-DIPT into the anus of male A using a dropper in a hotel room at approximately 21:00 h. Following the injection, male A developed abnormal symptoms including very intense agitation and was rushed to hospital. However, he died at about 00:30 h on the following day. Blood and urine specimens were submitted for toxicological examination.

Autopsy findings revealed periarteritis nodosa, involving the heart and liver, a myocardial ischemic lesion, leukocytosis, advanced pulmonary congestion and pulmonary alveolar haemorrhage and periprostatic bleeding.

3. Analysis

3.1. Materials

5-MeO-DIPT was synthesized according to the method of Shulgin and Shulgin [4]. 5-Hydroxy-*N,N*-diisopropyltrypt-

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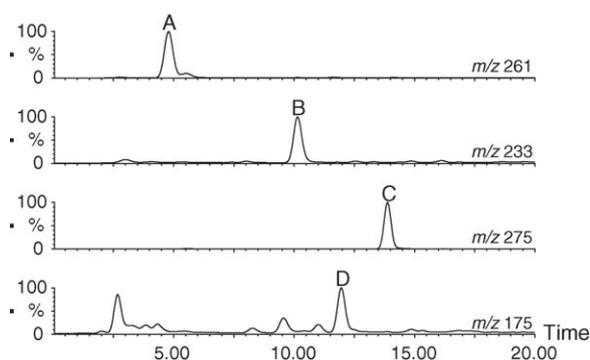


Fig. 1. Extracted ion chromatogram obtained for 5-Hydroxy-*N,N*-diisopropyltryptamine (5-OH-DIPT), 5-methoxy-*N*-isopropyltryptamine (5-MeO-NIPT) and 5-methoxy-*N,N*-diisopropyltryptamine (5-MeO-DIPT) obtained from an extract of a urine specimen by LC/MS. Peak A: 5-OH-DIPT, Peak B: 5-MeO-NIPT, Peak C: 5-MeO-DIPT, Peak D: 5-methyltryptamine (I.S.). The retention time of 5-OH-DIPT, 5-MeO-NIPT, 5-MeO-DIPT and I.S. was 4.79, 10.14, 13.89 and 11.96 min, respectively.

tamine and 5-methoxy-*N*-isopropyltryptamine were synthesized according to the method of Kamata et al. [3]. All other chemicals and reagents used were of the highest commercially available quality.

3.2. Extraction

A 1 ml portion of urine and blood specimens were adjusted to pH 8 with 2.8% ammonium hydroxide and mixed vigorously with two volumes of a chloroform–isopropyl alcohol mixture (3:1, v/v). After centrifugation, the organic layers were recovered. The extraction was repeated twice, and the organic extracts were combined, and evaporated to dryness under a gentle stream of nitrogen gas at 40 °C. The residues were dissolved in 100 μ l distilled water, and the internal standard (5-methyltryptamine; I.S.) solution was added. The solutions were then filtered through a 0.2 μ m membrane filter. Five microliters were automatically injected into the LC–MS system [4].

3.3. Instrumentation

The LC–MS systems was a Quattro (Micromass, Manchester, UK) equipped with an Alliance 2690 pump and an electrospray ionization (ESI) interface (Waters, Milford, USA). The column used was a semi-micro L-column ODS (1.5 mm i.d. \times 150 mm) (Chemicals Evaluation and Research Institute, Tokyo, Japan). The mobile phase consisted of a linear gradient of methanol and 10 mM ammonium formate (pH 3.5, adjusted with formic acid) (methanol 25–40% in 5 min). Electrospray ionization (ESI) (positive mode) was selected, and the operating conditions for the analysis were as follows: flow rate, 0.1 ml/min; capillary voltage, 2.0 kV; cone voltage, 25 V; ion-source temperature, 300 °C. Argon was used as the collision gas at a collision energy of 15 eV. The following ions were used as quantifier and qualifier ions: *m/z* 275 for 5-MeO-DIPT, *m/z* 233 for 5-MeO-NIPT, *m/z* 261 for 5-HO-DIPT and *m/z* 175 for the I.S., respectively. The retention time of 5-OH-DIPT, 5-MeO-NIPT, 5-MeO-DIPT and I.S. was 4.79, 10.14, 13.89 and 11.96 min, respectively (Fig. 1) [3].

4. Results and discussion

The recovery from blood of the three compounds, 5-OH-DIPT, 5-MeO-DIPT and 5-MeO-NIPT, was >80%, >55% and >70%, respectively. Good inter and intra-assay precision was also observed (coefficient of variation <10%). The limit of quantification of 5-MeO-DIPT, 5-OH-DIPT and 5-MeO-NIPT was 0.01 μ g/ml.

Meatherall and Sharma [5] have described a case of 21-year-old a Caucasian male who ingested a pill called Foxy containing an unknown amount of drug. A urine sample was collected approximately 4 h after drug ingestion. The urine concentration of 1.7 μ g/ml was determined using GC–MS. In addition, Wilson et al. [7] have described the blood and urine analysis in cases of 5-MeO-DIPT toxicity. 5-MeO-DIPT and its five metabolites were identified in urine by GC–MS. The concentrations of 5-MeO-DIPT in the serum and urine of a 23-year-old Caucasian male who ingested a

Table 1

Our data and published data on 5-methoxy-*N,N*-diisopropyltryptamine (5-MeO-DIPT) and its two metabolites

No.	Sample	5-MeO-DIPT (μ g/ml)	5-OH-DIPT (μ g/ml)	5-MeO-NIPT (μ g/ml)	References
1	Urine	1.7	ND	ND	[5] ^a
2	Urine	0.229	ND	ND	[6] ^a
3	Serum	0.14	None	None	[7] ^a
	Urine	1.6	1.6	0.1	
4	Serum	0.412	0.327	0.020	Present study ^b
	Urine	1.67	27.0	0.32	

5-OH-DIPT, 5-hydroxy-*N,N*-diisopropyltryptamine; 5-MeO-NIPT, 5-methoxy-*N*-isopropyltryptamine; ND, not done; none, not detected.

^a Poisoning case.

^b Fatal case.

capsule containing 5-MeO-DIPT were 0.14 and 1.6 $\mu\text{g/ml}$, respectively. The urinary concentration of this metabolite was 0.17 $\mu\text{g/ml}$. Also, the urine contained three other related compounds. In both cases, the victims of the poisoning survived. However, in the case described here, the victim died. The serum and urine levels of 5-MeO-DIPT and its two metabolites in the present case were higher than the levels in published reports [5,6] (Table 1). In addition, no ethanol, therapeutic and abused drugs were detected in serum and urine specimens in this case. Based on the autopsy and toxicological findings, the cause of death was acute cardiac failure due to neurotoxicity resulting from an overdose of 5-MeO-DIPT.

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