G3 Postmortem Detection of 25I-NBOMe in Fluids and Tissues of a Young Man Who Fell Seven Stories to His Death

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After attending this presentation, attendees will be enlightened regarding the toxic and behavioral effects of an emerging class of "2C" designer drugs, which are N-benzyl phenylethylamine derivatives. Of particular interest in this case is the derivative 2-(4-iodo-2,5-dimethoxyphenyl)-N-((2-methoxyphenyl) methyl)ethanamine, also known as 25I-NBOMe.

This presentation will impact the forensic science community by providing practical information relevant to the postmortem evaluation of deaths associated with behavioral or hyperstimulation-type symptoms, particularly in cases where the initial postmortem toxicologic analysis is negative. This presentation will also present a novel drug of abuse that induces these types of symptoms.

In the last few years, these "2C" designer drugs have become easily obtainable over the internet, particularly 25I-NBOMe. These drugs are potent serotonin 5-HT2A receptor agonists. The drugs are known for their perception-distorting and hallucinogenic properties. Street names for these drugs include 25I, INB-MeO, N-bomb, Smiles, Solaris, and Cimbi-5.

This study presents a case of a 19-year-old man who suffered multiple blunt traumatic injuries after he fell from the seventh floor of his apartment building. Prior to his death, he had ingested blotter paper containing "acid." His friends reported that after he ingested the drug, his behavior became bizarre, with paranoia being a predominant feature. Initial toxicological screens and analysis performed on body fluids and tissues by Gas Chromatography/Mass Spectrometry (GC/MS) and immunoassay were negative. Based on case history, a targeted analysis for Lysergic Acid Diethylamide (LSD) by immunoassay and Liquid Chromatography with Tandem Mass Spectrometry (LC/MS/MS) was also performed by a reference laboratory. No volatiles, drugs, or LSD were detected. Subsequently, the blotter paper from the stomach contents was analyzed by GC/MS; however, only bile salts were detected.

Based on negative findings and case history, law enforcement was contacted and the lead detective was able to obtain another piece of non-ingested blotter paper from the same source. Analysis of the non-ingested blotter paper by GC/MS identified the presence of 25I-NBOMe. A targeted analysis of 25I-NBOMe was then performed by a reference laboratory in Virginia.

At the reference laboratory, postmortem specimens were analyzed by High Performance Liquid Chromatography with Tandem Mass Spectrometry (HPLC/MS/MS). Toxicology findings for fluids based upon blood or urine calibrators were as follows: peripheral blood, 405pg/mL; heart blood, 410pg/mL; urine, 2.86ng/mL; and vitreous humor, 99pg/mL. Findings based upon the method of standard additions were: gastric contents, 7.1ug; bile, 14.3ng/mL; brain, 2.54ng/mL; and liver, 7.2ng/mL.

This study presents the circumstances of death, autopsy findings, and methods and results of toxicological analysis from a fatality associated with ingestion of the novel designer drug 25I-NBOMe. When confronted with negative postmortem toxicology results in fatalities associated with bizarre behavior or symptoms attributable to hyperstimulation of the sympathetic nervous system, the forensic science community should have a high index of suspicion for intoxication with these types of drugs. Collaboration with law enforcement can be of great utility in these instances. Based on research of literature, this is the first presented postmortem case of 25I-NBOMe intoxication documented by toxicological analysis of tissues and body fluids.

25I-NBOMe, 5-HT2A Receptor, Postmortem

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