K62 Case Report of AB-FUBINACA Exposure With Chemical and Toxicological Confirmation

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After attending this presentation, attendees will be able to implement lessons learned from the combined efforts of many groups in the successful identification of a group intoxication event posing a threat to public health and safety.

This presentation will impact the forensic science community by introducing a case series of individuals presenting to a hospital emergency department after exposure to the third-generation synthetic cannabinoid AB-FUBINACA with symptoms ranging in severity.

A number of young adults were attending a party at which a variety of recreational substances were being used. During the course of the event, nearly a dozen individuals fell ill and emergency services were called. A range of symptoms were reported, including sedation, seizures, and one case of ventricular fibrillation. Four patients who were experiencing adverse effects all related having taken a clear capsule containing a white powder, which was sold to them as "Molly."

During a subsequent police investigation, drug materials containing the following substances were seized: 5-MeO-DMT (known as "foxy-methoxy"), 5-MeO-MiPT, Dimethyl Tryptamine (DMT), escitalopram, alprazolam, 4-Acetyl-DMT, psilocin, 1-(benzofuran-5-yl)-N-methylpropan-2-amine (MAPB), and AB-FUBINACA. These substances range in their pharmacological properties and would cause a variety of physiological and psychological effects. Some of these substances are tryptamine derivatives, while escitalopram and alprazolam are prescription medications that may be abused. MAPB is a benzofuran drug with stimulant properties, and AB-FUBINACA is a synthetic cannabinoid agonist. All four individuals admitted to taking "Molly," which is often a street name for MDMA; however, other substances such as methylone or BZP have been sold under the same name.

Urine was collected from four individuals (all male) presenting to the emergency room after taking the described pill and falling ill. Hospital testing of the urine was limited to testing for the presence of MDMA using immunoassay. After initial negative screening results, the samples were then submitted to a reference laboratory for comprehensive toxicology testing.

An escalating approach was taken for this toxicological investigation and used a variety of methodologies. Initial testing was requested for DMT, with negative results. Testing was expanded to include a hallucinogenic screen using **Liquid Chromatography**/Time-Of-Flight/Mass Spectrometry (LC/TOF/MS) and Gas Chromatography/Mass Spectrometry (GC/MS) with spectral deconvolution software (DRS) using an expansive in-house database including a large number of novel psychoactive substances including 5-MeO-DMT, 5-MeO-MiPT, DMT, escitalopram, alprazolam, 4-Acetyl-DMT, psilocin, and MAPB. After these two screens were completed, there were no significant findings and no findings that tied the four cases together. Positive findings were consistent with either valid prescriptions or medications administered in the hospital. Finally, urine sample testing was performed for a range of 12 synthetic cannabinoid metabolites including AB-PINACA N-Pentanoic Acid, ADBICA N-Pentanoic Acid, AB-FUBINACA Butanoic Acid, ADB-PINACA, 5-Fluoro-PB-22 carboxyindole, JWH-073 N-Butanoic acid, PB-22 3-carboxyindole, BB-22 3-carboxyindole, AB-CHMINACA 3-methyl-butanoic acid, JWH-018 N-pentanoic acid, AKB48 N-pentanoic acid, and UR-144 N-pentanoic acid. Testing was conducted using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). Testing of the four urine samples identified the presence of AB-FUBINACA Butanoic acid in all samples, although in one case the concentration was only 22% of the cut-off (5.0ng/mL); however, all other acceptance criteria were met. There was no response for transitions for AB-FUBINACA Butanoic acid in any of the blank urine samples. Toxicology testing confirmed the use of AB-FUBINACA, which was consistent with the results of chemical analysis of a capsule recovered from the scene, consistent with that described by the four individuals tested. AB-PINACA N-pentanoic acid was also detected in three of the four cases, suggesting prior use of AB-PINACA .

This case highlights the joint efforts of emergency responders, poison control, medical doctors, toxicologists, investigators, and forensic chemists in order to successfully identify the new and dangerous synthetic cannabinoid agonist, AB-FUBINACA, as the responsible agent in a series of intoxications. This also highlights the threat to recreational drug users who are sold counterfeit or compromised substances, as in this case, where AB-FUBINACA was sold as "Molly."

Synthetic Cannabinoids, AB-FUBINACA, Molly

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