

Synthetic Cannabinoids 5F-ADB and ADB-FUBINACA in Postmortem Samples of Inmates in Alabama

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Background/Introduction: The US Department of Justice estimates that 70% of inmates have used drugs regularly or have committed a drug-related offense. Of particular concern are novel psychoactive substances that may escape routine jail or prison drug monitoring. As more of these compounds have been placed on the Schedule I list, newer compounds have been appearing in case samples, such as 5F-ADB and ADB-FUBINACA. 5F-ADB and ADB-FUBINACA are members of the newest generation of synthetic cannabinoids.

Objective: To investigate postmortem and overdose data pertaining to inmate deaths in Alabama. We present three cases involving synthetic cannabinoids 5F-ADB and ADB-FUBINACA detected in postmortem samples of individuals who died while incarcerated.

Methods: Full toxicological analysis is conducted on inmate deaths. This includes ethanol by HS/GC/MS, common drugs of abuse using either the Randox or Tecan immunoassay systems, liquid-liquid extraction for basic and weak acid/neutral drugs followed by GC/MS, and quantification as needed by either liquid-liquid or solid phase extraction followed by either GC/MS or LC/MS/MS. If the case history indicated possible synthetic cannabinoid use, that analysis was performed but it is not part of routine testing.

Results: Prevalence of the most common drugs found in inmate cases was determined. Interestingly, a rash of synthetic cannabinoid overdoses was identified in December, 2016 that coincided with the arrest of a prison guard for drug distribution. Synthetic cannabinoids were among the drugs found in the guard's possession. We highlight three cases below:

Case # 1: A 51 year old white male was found dead sitting in a chair in the shower room of the prison, covered in bruises. After interviewing other inmates, it was determined that the decedent had fallen and hit the back of his head before becoming unresponsive. He was transported to the hospital where x-rays determined he had three skull fractures, and he was placed on life support. Five days later, he was declared brain dead and life support was removed. According to medical records, he had a history of falls. Analysis for synthetic cannabinoids was requested as the decedent had a history of drug use. Toxicological findings were positive for ADB-FUBINACA and 5F-ADB. Cause of death was blunt force trauma and the manner of death was accident.

Case # 2: A 46 year old black male was found unresponsive in his cell, lying on the bed. It was stated that he may have been smoking synthetic cannabinoids. The only toxicological finding was the presence of ADB-FUBINACA. The cause of death was listed as synthetic cannabinoid toxicity and the manner of death as accident.

Case # 3: A 27 year old white male was observed to be jumping on his bed at approximately 1am. At 2am, he was observed by another inmate to come out of his cell, stop and look up at a fan, then collapse face first onto the floor. Other inmates stated that the decedent was smoking FLAKKA that night. Toxicological findings were only positive for 5F-ADB. The cause of death is listed as synthetic cannabinoid toxicity and the manner of death as accident.

Conclusion/Discussions: In addition to maintaining communication between investigators, medical examiners, and toxicologists, it may be useful to include synthetic cannabinoids as part of routine screening for the inmate population. As these cases demonstrate, unusual behavior cannot necessarily be attributed to deaths associated from synthetic cannabinoid use. In such situations, toxicologists can play a key role in assisting law enforcement to identify potential drug distribution rings within the jail and prison systems.

Keywords: 5F-ADB, ADB-FUBINACA, Inmates