SOFT 2022
Abstract Submission Form

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*****Do not exceed 600 words including tables and charts.*****

TITLE: *Benzo-Dope: An Increasingly Prevalent Drug Combination of Significant Toxicological Relevance*

AUTHOR(S) AND AFFILIATION(S):

Alex J. Krotulski[1,*], Donna M. Papsun[2], Sara E. Walton[1], Barry K. Logan[1,2]
[1]Center for Forensic Science Research and Education, Fredric Rieders Family Foundation, Willow Grove, PA, [2]NMS Labs, Horsham, PA

ABSTRACT: *Structure the abstract using the following headers.*

Background/Introduction: Drug overdose deaths continue to increase year after year in the United States as the Centers for Disease Control and Prevention reported more than 100,000 overdose deaths in 2021. These deaths are largely fueled by opioids and stimulants; however, the drug overdose crisis has entered a new wave marked by poly-drug formulations and usage. The prevalence of fentanyl continues to increase across the United States since its introduction into the drug supply in the late 2000s. Today, most regions of the country see fentanyl more commonly than heroin and other opioids. As fentanyl has gained a strong hold on the opioid supply, manufacturers of the drug products continue to seek a product with the "next best high". This has led to the recent emergence of several fentanyl drug combinations, including SCRA-dope (fentanyl with synthetic cannabinoids), tranq-dope (fentanyl with xylazine), and benzo-dope (fentanyl with benzodiazepines). Benzo-dope poses significant health risks to people who use drugs due to the combined pharmacological effects of the two CNS depressants.

Objectives: The primary objectives of this presentation are 1) to showcase the increasing prevalence of benzodiazepine and opioid drug combinations and 2) to demonstrate why comprehensive toxicology testing for benzodiazepines should be undertaken in medicolegal death investigations involving fentanyl.

Methods: Biological samples from forensic toxicology investigations were submitted for analysis from agencies across the United States. Following routine toxicology testing, sample extracts were re-analyzed using a comprehensive non-targeted acquisition strategy on a SCIEX TripleTOF® 5600+ quadrupole time-of-flight mass spectrometer (LC-QTOF-MS). Resulting datafiles were processed using a targeted library database containing more than 950 traditional drugs, NPS, metabolites, and other relevant analytes. In total, 27 NPS benzodiazepines and 26 traditional benzodiazepines were included in the scope.

Results: Since mid-2019, a large increase in positivity for NPS benzodiazepines has been observed. Etizolam (n=1,597) and flualprazolam (n=833) were most commonly detected alongside fentanyl (n=3,587 total samples), followed by clonazolam (n=262), flubromazolam (n=169), flubromazepam (n=128), and bromazolam (n=118). Over this same period of time, no significant changes in the positivity of fentanyl with diazepam or alprazolam were observed, demonstrating that benzo-dope is largely comprised of new benzodiazepines. From Q1 2021 to Q1 2022, the proportion of detections for NPS benzodiazepines with fentanyl increased for etizolam (79% to 88%), flualprazolam (64% to 88%), flubromazolam (36% to 46%), flubromazepam (0% to 87%), and bromazolam (33% to 75%); the only drug to decrease slightly was clonazolam (46% to 39%). When examining NPS benzodiazepines as a subclass, this group of drugs was found in 69% of fentanyl positive cases since mid-2019 (and 82% in Q1 2022 alone).

Conclusion/Discussion: Benzo-dope is an emergent and sustained drug supply phenomenon that has led to a large increase in combinations of opioids and benzodiazepines in forensic samples. While the data presented result from forensic toxicology cases, it should be noted that benzo-dope drug materials have contained combinations of NPS benzodiazepines and opioids in individual dosage units. Benzodiazepines are known to cause additive CNS depressant effects when ingested in combination with opioids. Given the risk of death when taken in combination with opioids, benzodiazepines (specifically new or emerging benzodiazepines) should be tested for in medicolegal death investigation cases, and toxicologists should consider their significance along with case history, autopsy findings, and drug material testing results, if available.