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169. Geographic Variability of Novel Potent Opioids and Associated Emerging Substances Detected in Emergency Department Patients

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Background: Over the past decade, there has been a pro- liferation in illicit opioids created to subvert existing legis- lation about structurally novel substances with mu opioid activity. Novel potent opioids (NPOs)—e.g., nitazenes and brorphine--rose in popularity shortly after the DEA sched- uling of all fentanyl derivatives in 2018. While these NPOs have been responsible for several clusters of overdose deaths in the US, the geographic prevalence of these compounds has yet to be described.

Methods: This is a prospective observational study derived from the Toxicology Investigators Consortium Fentalog Study Group, an ongoing multicenter project from 10 sites across the US. Consecutive patients presenting to participat- ing emergency departments between October 6, 2020-July 3, 2023 with a suspected opioid overdose who tested positive for NPOs were included. Toxicology analysis of waste serum was performed in a central lab via liquid chromatography quadrupole time-of-flight mass spectroscopy. Geographic distribution was based on the index ED visit location and analyzed using descriptive statistics.

Results: Over the study period, 1,266 patients had complete toxicology results, with 20 of these testing positive for NPOs. Atlanta, GA had the highest absolute and proportional number of NBDOs detected (five patients, 8.8%). Metonitazene was the most common NPO detected (8/20 patients). 5/5 patients from Atlanta also tested positive for flualprazolam, and 4/5 tested positive for eutylone. Protonitazene was only detected in two patients from New York, NY; both patients were also posi- tive for flubromazolam, bromazolam, and xylazine. All three patients from Newark, NJ were positive for N-piperidinyl etoni- tazene and negative for benzodiazepines. Benzodiazepines were found in 15/20 (75%) of all NPO-positive patients.

Conclusion: NPOs were most prevalent on the East Coast. Relative numbers of NPOs were low in the overall illicit opioid overdose population. Future study is needed to determine asso- ciations with adverse clinical outcomes.