

156. Fentanyl and fentanyl analogues in emergency department patients with suspected heroin overdose in the pre-COVID-19 era

Alex F. Manini¹, Alex Krotulski², Lisa R. Allen, Jeffery Brent³, Valeria Samame, Kavey Vidal, Paul Wax, Barry Logan⁴

¹Icahn School of Medicine at Mount Sinai, ²Center for Forensic Science Research & Education, ³University of Colorado, School of Medicine, ⁴NMS Labs

Background and Objectives: There were > 81,000 drug overdose deaths in the USA last year, the highest ever recorded in a one-year period. Global drug commerce introduced synthetic opioid fentanyl analogues (fentalogs) into the drug supply even before the COVID era. We aimed to describe prevalence and treatment requirements for ED patients with confirmed fentalog OD.

Methods: This was an observational cohort in the pre-COVID five-year period (2015-20) at two urban teaching hospitals. Adult (>18 years) ED patients with suspected or reported heroin OD were included if waste serum was available; exclusion criteria were prisoners, non-opioid OD, and alternate diagnoses. De-identified data was abstracted from the medical record. Toxicological confirmation was performed with instrumental analysis via liquid chromatography/quadrupole time-of-flight mass spectrometry in a panel of > 800 drugs including novel substances. Treatment requirements were defined as (a) naloxone administration (total dose, infusion, repeat bolus), and (b) ED disposition (ICU, medicine, discharge).

Results: Of 94 patients meeting study criteria, there were 14 fentalogs (14.9%, CI 8.4–23.7), 57 fentanyl (60.6%, CI 50–70.6), 60 either fentanyl or fentalogs (63.8%, CI 53.2–73.5), 50 heroin (53.2%, CI 42.6–63.6), 1 neither fentalog nor heroin (15.9%, CI 9.2–25), and 4 no opioid (4.3%, CI 1.1–10.5). Co-exposure to stimulants occurred in 31 (32.9%, CI 23.6–43.4). Excluding methadone co-exposures (N = 28), mean naloxone total dose (mg) was similar between groups (1.75 fentalog, 1.39 fentanyl, 2.02 heroin, p = NS); naloxone continuous infusion rates were similar (11.1% fentalog, 5.5% fentanyl, 6.1% heroin, p = NS), while repeat naloxone boluses were significantly lower in the fentanyl group (44.4% fentalog, 21.1% fentanyl, 42.9% heroin, p < 0.05). Rates of ICU admission were similar (14.3% fentalog, 12.9% fentanyl, 18.8% heroin, p = NS), but rates of hospitalization were significantly higher for heroin (28.5% fentalog, 38.9% fentanyl, 45.8% heroin, p < 0.05).

Conclusion: Two-thirds of ED patients with suspected heroin OD in the pre-COVID era actually had confirmed fentanyl/fentalog OD. In addition, co-exposure to stimulants occurred in one-third. Clinicians caring for victims of acute drug OD should recognize the high prevalence and treatment needs of fentanyl OD, and post COVID-era studies are now ongoing.