Presented at the North American Congress of Clinical Toxicology 2023 – Montreal, Canada

Published in Clinical Toxicology 2023;61:27-28.

55. Trends in the Intent and Drug Classes Used in Opioid Overdose Cases Treated by Medical Toxicologists

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Background: The current epidemic of opioid-related deaths in the United States is largely characterized by data from medical examiners and coroners. Although some studies provide detailed data on patients with non-fatal opioid toxicity, these lack detailed patient-level data on why individual patients were opioid-exposed. This study assessed the reasons for deliberate opioid exposures resulting in serious toxicity from the Toxicology Investigators Consortium (ToxIC) Core Registry.

Methods: The ToxIC Core Registry collects pre-specified data on consecutive patients cared for by participating medical toxicologists. Cases due to intentional pharmaceutical or non-pharmaceutical opioid exposures in patients aged11 between 2014and 2021 were included. Pharmaceutical opioids were defined as Food and Drug Administration-approved medications. All other opioids were defined as non-pharmaceuticals. Sedative-hypnotics, non-opioid analgesics, and antidepressants were used as comparators. Because all cases in the Core Registry required medical toxicology consultations, they were deemed to be serious. Subjects were summarized by frequency count and percentages for the categorical variables. Linear regression analyses were performed to evaluate the time trend in proportion of subjects with opioid suicide attempts and misuse. The ToxIC Core Registry was reviewed by a central Institutional Review Board (IRB) and by the IRBs of participating institutions.

Results: Of 62,833 total ToxIC cases between 2014 and 2021,8460 involved opioids, and 8011 (94.7%) of these met inclusion criteria. 5450 (64.4%) had an intentional opioid exposure. Age, race, and ethnicity did not correlate with the reasons for intentional opioid exposures. There were significantly more females in the self-harm group, but almost two-thirds of the opioid misuse cases were males. (P<0.0001). 1545 (28.3%) of intentional opioid exposures were self-harm attempts, of which 1268 (82.1%)expressed suicidal ideation. Opioid toxicity from misuse occurred in 3083 (56.6%) of intentional exposures. The remaining 822(15.1%) intentional exposure cases were either from therapeutic use or indeterminant reasons. The proportion of total intentional opioid cases decreased significantly from 2014–2021 (P¼0.02).Total opioid self-harm cases decreased during this period (P¼0.002), but the change in misuse cases was not significant. Pharmaceutical opioid suicide attempts and misuse cases peaked between 2015 and 2017 and fell dramatically thereafter (P¼0.009). In contrast, an increase was observed for non-pharmaceutical opioid suicide attempts or misuse (P¼0.02). Exposures to sedatives showed a gradual downward trend after 2016 that was driven by a decrease in benzodiazepine cases for both self-harm and misuse. There was no corresponding decrease in the percent of cases involving non-opioid analgesics, non-benzodiazepine sedative-hypnotics, or antidepressants.

Conclusion: Over a quarter of intentional opioid overdoses in the ToxIC Core Registry were due to self-harm attempts, suggesting that intentional overdose should be considered in the inter-pretation of opioid overdose statistics. Cases of pharmaceutical opioid exposures for misuse and self-harm fell precipitously following the 2016 release of guidelines from the Center for Disease Control. In contrast, there was an increase in non-pharmaceutical opioid exposures for misuse and self-harm during the same period. There was a gradual decrease in benzodiazepine exposures during the study period, while exposures to non-opioid analgesics and antidepressants did not change.