104. Trends in the Occurrence of Opiate Exposure as Reported to the ToxIC Registry, 2010–2015

Sharan Campleman1, Anne Riederer2, Paul Wax1,3, Jeff Brent4, On Behalf of the Toxicology Investigators Consortium (ToxIC)

1American College of Medical Toxicology, Phoenix, CA, USA 2University of Colorado, School of Medicine, Aurora, CO, USA 3University of Texas, Southwestern Medical School, Dallas, TX, USA 4University of Colorado, Denver, Aurora, CO, USA

Background: Opioids contribute a major proportion of all agents in the Toxicology Investigators Consortium case registry. In 2015, opioids accounted for nearly 9% of all agent fields; however, the relative contribution of both the overall opioid class and individual agents has varied over time. The relative class contribution, which includes all natural, semisynthetic, and synthetically derived opioid agonists/antagonists, appears to have declined.

Research Question: What changes in toxic events involving individual opioids have occurred over the initial 6 years of reporting to the ToxIC Registry?

Methods: This descriptive analysis included all ToxIC Registry cases reported from January 1, 2010 through December 15, 2015. Analysis based cases with at least one agent (N = 37,558, 87.1% cases). Summary statistics included testing of the difference of proportion statistics (prtest) and modeled proportions for trend (ptrend) using Bcase/total cases^ metric (STATA/SE, Statacorp LP).

Results: An average of 915 cases involved exposure to >1 opioid annually over the 6 years (range 541–1137), representing 12.5% to 21.1% (5-year average 14.6%). Linear tests for trend showed a consistent downward absolute value (4.2% AAPC). A positive versus negative trend was observed for single (+3.3% AAPC, 3.848 chi-squared p = 0.05) versus multiple agent poisonings (−3.2% AAPC, 15.95 p < 0.0001).

Heroin, methadone, oxycodone and tramadol were common in all years (four of top five opioids in single and multiple). Relative rank differences appeared including for heroin 31.6% single (rank #1) and 14.6% of multiple (rank #3) poisonings. Agent-specific trends varied in direction, magnitude, and significance. In single-agent events, positive trends were observed for buprenorphine, morphine, heroin, and opioid-unspecified, while negative trends appeared for methadone and fentanyl. Multiple agent poisonings had significant increases (p < 0.0001) for heroin, hydrocodone, and oxycodone.

Discussion: During this period, cases involving >1 opioid demonstrated variation in their relative contribution to the ToxIC registry by specific drug and single/multiple exposure. It is important to parse out the relative influence of polydrug exposures, as well as other factors that influence reporting over time.

Conclusion: As the Registry continues to increase in size and accumulated years, the ability to identify stable estimates of trend will continue to improve.