

Ten-Year Trends in Reporting of Methamphetamine and Heroin Exposure as Treated by Medical Toxicologists: 2010–2019

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Background: Opioids (OPI) and sympathomimetics are two of the most common agent classes reported to the Toxicology Investigators Consortium, including drugs of abuse such as heroin (HER) and methamphetamine (METH). Previously, a 6-year analysis observed a decline in cases involving any OPI. In addition, the absolute number of cases involving METH appeared to be rising. Therefore, it is important to update and parse out the relative influence of multiple vs. single-agent exposures over a longer 10-year period.

Research Question: What changes in toxic events involving HER and METH have occurred over the 10 years of reporting to the ToxIC Registry?

Methods: This descriptive analysis included all ToxIC Registry cases January 1, 2010, through October 31, 2019 reporting exposure to at least one toxic agent. Summary descriptive statistics calculated included annual relative frequencies and chi-square for linear trend.

Results: OPI class agents reported in 13.8 to 18.7% of cases annually. Linear tests based on the percentage of total agents indicated an overall slight upward trend for any OPI ($\chi^2 = 18.949$, $p < 0.001$), but a sharper (slope $> 3\times$) increase for HER ($\chi^2 = 418.04$, $p < 0.001$). For example, in 2010 HER was reported in 1.6% cases, while in 2019 HER was reported in 8.3% of cases. The annual proportion of cases reporting METH alone ($\chi^2 = 161.73$, $p < 0.001$) or in combination with HER ($\chi^2 = 99.758$, $p < 0.001$) also increased significantly through October 2019.

Conclusion: ToxIC Registry cases involving HER and METH demonstrated significant positive increase in their relative proportion of poisonings. As the Registry continues to increase in size and accumulated data years, the ability to identify stable estimates of time trend has improved. Although the overall percent of cases reporting any OPI declined, cases reporting HER increased indicating the expanding use of HER, both with and without concurrent METH.