K38 Examination of Toxicology Results in Homicide Victims in New Mexico: 2006-2011

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After attending this presentation, attendees will understand the drug use patterns among homicide victims in New Mexico, as well as the contrast between drugs detected in overdose deaths and those present in homicide victims.

This presentation will impact the forensic science community by exploring the association between alcohol and stimulant drug use and homicidal deaths.

Drug and alcohol abuse are epidemic in the United States. Reviews of the drugs detected in cases of accidental drug toxicity deaths in New Mexico demonstrate very high rates of opiates (heroin and prescription narcotics) and alcohol use leading to death. This research hypothesized that while psychostimulant drugs are only infrequently detected in accidental drug toxicity deaths, the toxicology findings of homicide victims would reflect a different pattern of drug use in the state.

A six-year (2006-2011) retrospective review of toxicology results in homicide victims in New Mexico was undertaken. Exclusion criteria were: (1) age less than 5 years; (2) in-custody deaths; (3) skeletonized remains; (4) no tissue or blood available for toxicology testing; (5) cases where neglect was implicated in causing or contributing to death; and, (6) death from remote injuries. Toxicology results were reviewed and the presence of ethanol, opiates, methamphetamines, cocaine, cannabinoids, and "other drugs" was recorded. Demographic data including age, sex, race, and county of death were recorded. Data was evaluated with SAS® statistical software.

During the study period, 983 deaths were certified as homicides. Of those, 67 were excluded by criteria. Of the remaining 916, 18.5% were female and 81.5% were male. Four were 6-11 years old, 47 were 12-17 years old, and 865 were older than 18 years. Neither drugs nor alcohol were detected in the 6-11 years age group. In the 12-17 years age group, there were 38 positive toxicology results (20 for ethanol, 11 for cannabinoids, 4 for cocaine, 2 for "other," 1 for opiates, and 0 for methamphetamine). In the adult (18 years and older) group, there were 1,014 positive toxicology results (488 for ethanol, 134 for cocaine, 126 for cannabinoids, 106 for methamphetamine, 100 for "other," and 60 for opiates). Of adult homicide victims, approximately 12.3% had methamphetamine and 15.5% had cocaine, with 14 cases positive for both methamphetamine and cocaine.

Drugs and alcohol were commonly identified on toxicology testing of homicide victims. Several studies have established the strong association between psychoactive drugs and homicide. These studies have also demonstrated ethanol as the most common substance detected in homicide victims. In this study, ethanol was detected in over half of the cases and opiates were only infrequently detected, which is in sharp contrast to the accidental drug-overdose deaths investigated in New Mexico where opiates were detected most often. Following ethanol, the most commonly detected drugs in homicide victims in the state were stimulants (methamphetamine and cocaine) and cannabinoids. This study's findings support its hypothesis and contribute to the body of literature demonstrating the association between drug use and homicide, particularly among psychostimulant drug users.

Homicide, Toxicology, Stimulants

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