



K24 Impact of Drugs and Alcohol on Manner of Death by Sex and Age Among Autopsy Cases Performed at the Upper East Tennessee Forensic Center in 2007

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After attending this presentation, attendees will understand of the impact of drugs and/or alcohol on the manner of death by sex and age among autopsies performed at the Upper East Tennessee Forensic Center in 2007.

This presentation will impact the forensic community by illustrating the increased impact of drugs and alcohol on the manner of death in a select region of Tennessee.

The Upper East Tennessee Forensic Center performs autopsies on the questionable and medicolegal deaths which occur in the eight counties of the First Tennessee Development District. Toxicological evaluations of specimens collected at autopsy are used to determine if drugs and/or alcohol are involved in determining the cause and manner of death. A descriptive database was established defining all parameters and data pertinent in each case (age, sex, cause/manner of death, and toxicological results). The purpose of this research was to determine descriptive statistics on the impact of drugs and/or alcohol by manner/cause of death, age, and sex in the autopsies performed in 2007. Specimens (blood, gastric contents, urine, vitreous humor, and bile) from the autopsies were analyzed for drugs and alcohol using multiple analytical toxicological procedures (colorimetric, TLC, immunochemistry, GC, GCMS, and LCMS). Toxicological results were compiled in an electronic database to allow for analysis and interpretation. Results indicate that out of 277 total cases, 66% were male, 34% were female, 85% were positive for drugs, 27% were positive for alcohol, 23% were positive for both drugs and alcohol, and 12% had neither drugs nor alcohol. Analysis of the distribution of cases positive for drugs, alcohol, and drugs/alcohol revealed that males had a greater percentage of cases involving alcohol alone as well as cases positive for drugs/alcohol than females. Acute drug overdoses accounted for 34% of total cases with no substantial sexual differentiation. Of the 94 acute overdose cases, 4 (≈4%) were intentional (suicides) and 90 (≈96%) were accidental. Autopsies were performed on all age groups (percentage of cases/ years of age): 5% <14, 4% between 15 and 19, 8% between 20 and 24, 14% between 25 and 34, 22% between 35 and 44, 16% between 45 and 49, 13% between 50 and 54, 10% between 55 and 64, 6% between 65 and 74, and 2% ≥75 years of age. The distribution of positive drug cases closely mirrored the distribution of cases by age groups. Manner of death analysis revealed (of total cases) that 47% were accidental, 27% were natural, 15% were suicides 6% were homicides, and 5% were undetermined. No appreciable disparity in distribution of manner of death was found between the sexes. Analysis of the results of the toxicological evaluations revealed there were a large number of cases in which opiates (100), alcohol (75), benzodiazepines (110), sedatives (18), and/or stimulants (14) were identified. Review of these results leads to the conclusion that drugs and alcohol have a significant impact in the questionable and medicolegal deaths occurring in Upper East Tennessee.

Drugs, Alcohol, Death