Retrospective Study of Phencyclidine (PCP) Incidence in Cleveland, Ohio in Driving Under the Influence of Drugs (DUID) and Homicide Cases

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Abstract

After observing this presentation, attendees will have a better understanding of the frequency and demographics of Phencyclidine (PCP) related cases seen at the Cuyahoga County Medical Examiner’s Office (CCMEO) in Cleveland, Ohio from 2006-2014. This presentation will impart the forensic community by informing forensic professionals about a subset of PCP positive DUID cases and homicide cases characterized by PCP use prior to death in the City of Cleveland. Originally developed as a surgical anesthetic in the 1950s, PCP (1-phenylcyclohexylpiperidine) was effective due to its ability to enter patients into trance-like or “dissociative” states. However, due to negative side effects, its use as an anesthetic was discontinued. Today PCP is a Schedule II drug causing behavioral responses that range from cognitive and affective changes to disinhibition, disturbed thought and overall erratic behavior. Research has linked PCP use with generally violent and aggressive behavior, including self-injury, aggressiveness towards others and lack of driving competency. While the PCP abuse-decades of the 1960’s and 1970’s have waned, Drug Abuse Warning Network (DAWN) data indicates an increase in PCP related emergency room visits by more than 400% between 2005 and 2011. Here we evaluate the incidence of PCP in Cuyahoga County in both antemortem (DUID cases) and postmortem cases seen at CCMEO.

The cases in which PCP was positively identified were assessed for cause of death, decedent demographics, location of death and polysubstance abuse. We analyzed both antemortem DUID and postmortem cases, in which a subset of homicide decedents that were PCP positive were subdivided into antemortem DUID and postmortem cases.

Out of the total PCP positive cases for the nine-year period, 68.50% were DUID cases and 31.50% were postmortem cases. Specifically the incidence of PCP positive DUID cases has increased five-fold over the last nine years with 1.67% positive PCP cases in 2006 compared to 8.34% in 2014. The median PCP blood concentration for DUID cases was 0.01-0.18 mg/L with a median value of 0.05 mg/L. Polysubstance abuse occurred in both antemortem and postmortem cases. Most abused drugs of interest were THC, ethanol and cocaine. Results correlate with previous studies associating PCP use to violent and/or reckless behavior. Hopefully, this study will shed light on PCP usage - raising awareness to the public and law enforcement - Resulting in a safer Cuyahoga County.

Conclusions

Evaluation of CCMEO cases involving PCP between 2006-2014 revealed:

1. A significant subset of PCP positive homicide decedents involve urban black males in their early twenties.
2. Rise in PCP positive DUID cases for last nine years.
3. Higher PCP blood concentrations in the homicide cases compared to the DUID cases.
4. Homicides with a median value of 0.16 mg/L.
5. DUID with a median value of 0.06 mg/L.
6. Polysubstance abuse occurred in both antemortem and postmortem cases.
7. Most abused drugs of interest were THC, ethanol and cocaine.
8. Results correlate with previous studies associating PCP use to violent and/or reckless behavior.
9. Hopefully, this study will shed light on PCP usage - raising awareness to the public and law enforcement.
10. Resulting in a safer Cuyahoga County.

References

11. Substance Abuse and Mental Health Services Administration (SAMHSA). PCP-related ED visits rose 400 percent over six years. 2013.

Methods

All cases tested positive for PCP during 2006 to 2014 were identified through a Toxicology Database (Pathways®) at the Cuyahoga County Medical Examiner’s Office, Cleveland, OH. PCP positive cases were subdivided into antemortem DUID cases and postmortem cases. All PCP positive cases accepted for this study were further analyzed to gather data on various demographics (i.e., gender, marital status, incense location), causes and manner of death, trends in incidence, PCP blood concentrations and polysubstance abuse.

Toxicological Analyses:

All cases were screened for PCP using either an ELISA (Blood) or EMIT (Urine). Positive PCP screens were confirmed by GC/MS.