



### **K2 Phencyclidine (PCP) in Fatally Injured Drivers and DUID Arrests in Harris County, Texas**

*Fessessework Guale, DVM\*, Jeffrey P. Walterscheid, PhD, Terry Danielson, PhD, Ashraf Mozayani, PhD, PharmD, and Luis A. Sanchez, MD, Harris County Medical Examiner's Office, 1885 Old Spanish Trail, Houston, TX 77054*

After attending this presentation, attendees will gain knowledge of the incidence of phencyclidine (PCP) in arrested and deceased automobile drivers in a major metropolitan area. Attendees will also be made aware as to how an appropriately broad toxicological analysis can assist in distinguishing between reckless, suicidal behavior and drug-induced intoxication.

This presentation will impact the forensic science community by educating toxicologists on the evaluation of drivers on PCP. Simple analyses for alcohol alone might not have been sufficient to interpret these cases, and observations suggest that a wider screen for drugs of abuse can provide valuable information in understanding the driver's state of mind at the time of a collision or DRE evaluation.

Phencyclidine is a dissociative anesthetic drug that induces an altered mental state at sub-anesthetic doses, where the user may experience a range of sensations from tranquility to detachment and psychosis. Since PCP is a weak base, it is well-absorbed whether it is smoked, injected, or ingested. The onset of intoxication begins within minutes of taking PCP, and can last for several hours. Residual effects may persist for days after the last dose. Its high lipid solubility allows it to accumulate in adipose and brain tissue, with a prolonged excretion interval over several weeks.

The effects of PCP severely undermine an individual's ability to drive safely, and often results in DUID arrests or fatal motor vehicle accidents. Its chemical properties allow it to be easily abused by smoking or swallowing before or during operation of a motor vehicle. An acute 5 mg dose of PCP typically causes drunken behavior with drowsiness, slurred speech, poor coordination, and altered perceptions of time and distance. Moderately larger doses of 10 mg or more produce effects more difficult to predict, such as muscle rigidity, lack of coordination, combative behavior, and auditory/visual hallucinations.

The results of PCP testing in fatally-injured drivers and DUID suspects over a 12-month period in Harris County, Texas. Attendees will learn about the pharmacology and behavioral effects of PCP, as well as modern analytical methods for determining concentrations in forensic specimens. Participants will also learn about the prevalence of PCP in arrested and deceased automobile drivers, and witness some of the characteristics of PCP-related MVA scenes.

In the deceased driver group, PCP blood levels were between 0.09 and 0.20 mg/L. No other drugs, except ethanol, (0.08 and 0.01 mg/dL in two cases) were detected. Typically, the vehicles left the roadway at a high speed, striking fixed objects without any evidence of skid marks or braking. In each of these cases, the collisions resulted in severe damage and almost appeared to be intentional. From a medical examiner viewpoint, this behavior may be interpreted as a suicide in contrast to an accidental collision.

In two of the DUID cases, PCP blood levels were determined to be 0.016 and 0.052 mg/L. In the remaining DUI cases, the presence of PCP was confirmed in urine since it was the only available specimen. Marijuana use was also detected in four of the DUID cases, which points toward the combinatorial use of marijuana and PCP, otherwise known as "fry." Two of these cases were also positive for cocaine and alprazolam.

These cases illuminate the extreme danger of driving under the influence of PCP and also provide support for increased vigilance in apprehending impaired drivers. Simple analyses for alcohol alone might not have been sufficient to interpret these cases satisfactorily. Due to the relatively long half-life of PCP in comparison to other drugs of abuse, the extended excretion interval allows sufficient time to find evidence of consumption that can be correlated to observed actions. Findings suggest that an expanded screen for common drugs of abuse can provide valuable information in the interpretation of motor vehicle fatalities and DRE evaluations.

#### **Phencyclidine, Drivers, Accidents**