K33 Methamphetamine Impaired Driving in Arizona

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After attending this presentation, attendees will learn of the harmful combination of the methamphetamine lifestyle and driving.

This presentation will impact the forensic community and/or humanity by exposing common driving errors, individual behavior and observations, drug recognition expert (DRE) evaluations, and quantitation of amphetamine and methamphetamine in DUID cases. Specific case studies will be presented.

Although ethanol impairment continues to dominate in the workload, CNS stimulants, primarily methamphetamine has become the second most common drug(s) found in both blood and urine of drivers cited in driving under the influence of drugs (DUID). Urine is collected in misdemeanor DUID cases and blood is collected in more serious felonies and fatalities when impairment is suspected. Vehicular behavior and/or the reason for stop prior to evaluation can be more difficult to obtain. Furthermore, evaluation of an individual by a DRE can be limited due to refusal, uncooperative, combative, or injured person. Sometimes vehicular behavior is the best indicator of impairment; sometimes it is the only indicator. Obtaining accident reports, field officer's notes and DRE evaluations and collation of the information can be a very useful tool when an opinion on impairment is asked of the toxicologist.

Amphetamine, methamphetamine were analyzed quantitatively as TFA derivatives with d5 amphetamine/d9 methamphetamine as internal standards. A review of 31 cases in 2004 where methamphetamine was the only significant finding, the average amphetamine concentration was 49ng/mL (median 33, range 10-160) and methamphetamine was 470ng/mL (median 330, range 63-1700). A breakdown of the blood methamphetamine levels; twelve (38%) were<200 ng/mL (considered "therapeutic"), and four (13%) were>1000 ng/mL. Acetone was qualitatively identified in the blood in three (10%) of the samples. When analyzing samples for blood ETOH, acetone and the absence of ethanol in DUI cases was a good indicator of CNS stimulant use.

Amphetamine/Methamphetamine (A/M) ratios ranged from 2-38%, with only four cases (13%) having (A/M) ratio <5%, indicative of an acute dose. Laboratory data suggests that the majority of these individuals are likely impaired due to the "down-side" or withdrawal effects of methamphetamine.

Methamphetamine users are mostly white males. A high percentage (approx 50%) of users are unemployed, have a suspended or no driver's license, no insurance, etc. The most common drugs found with samples containing methamphetamine are in decreasing order THC, benzodiazepines, and cocaine/BE. While DUI Ethanol arrests occur 80% of the time between the hours of 8:00 pm to 4:00 am, methamphetamine users are apprehended around the clock. Driving infractions included speeding, erratic driving, cross-center line collisions, red light, rear-end collisions, asleep at the wheel, and stolen vehicle and/or plates. Observations by officers (not necessarily DREs) include blood-shot watery eyes; slurred, mumbled, or incoherent speech; restlessness and body tremors. Evaluations performed by DREs demonstrated the best indicators of stimulant use were; the lack of horizontal gaze nystagmus (HGN), body tremors, pulse (n=14) mean 99 (60-136), and pupil measurement in dark room (n=5) mean 7.6 mm. Data from 2005 is currently being collected and will be presented, along with case studies.

Methamphetamine, Driving, Impairment

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