K29 DUID Case Studies — DRE Evaluations With Blood / Oral Fluid Drug Quarts

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After attending this presentation, attendees will: 1) appreciate the important factors used to evaluate a potential drug impaired driving case, including the role of a DRE officer, 2) learn about the pharmacology of specific benzodiazepines and opiates and their effects on driving, 3) consider oral fluid as a possible alternative matrix to blood or urine in DUI investigations based upon the strengths and weaknesses discussed.

This presentation will impact the forensic community and/or humanity by building a database of drug quantitations in blood to relate to driving impairment.

Drug impaired driving continues to be a societal problem and growing concern as the number of physician written prescriptions and illicit drug use increase. Polydrug use further complicates the issue by making interpretation more difficult, frequently as the result of insufficient information to support an opinion. Unlike alcohol, drug concentrations are not correlative to behavioral effects, particularly in DUI cases. Furthermore, limited literature information is available correlating drug concentrations with standardized field sobriety tests and poor driving performance. The following cases are presented to support the need for more case specific data correlating drug concentrations to driving performance.

The first case involves a 43-year-old male charged with DWI (2nd offense) after a witness reported observing the suspect driving erratically on a major highway. The suspect failed the standardized field sobriety tests (SFSTs) administered by the arresting officer. The suspect claimed to suffer from chronic back pain, and several medications were seized from him including Oxycontin® (40 mg), diazepam (10 mg), Skelaxin® (metaxalone 800 mg), Lyrica® (pregabalin 75 mg), as well as other drugs that were not readily identified. The breath alcohol test was negative, so a DRE was summoned. Upon completion of the DRE evaluation, the officer opineed that the suspect was under the influence of a CNS depressant and narcotic analgesic. Blood and urine samples were tested. The laboratory quantitatively determined diazepam (410 ng/mL), nordiazepam (481 ng/mL), oxazepam (48 ng/mL), and trace amounts of temazepam, as well as oxycodone (114 ng/mL). The laboratory did not test for metaxalone or pregabalin. The urine sample was presumptively positive for benzodiazepines, opiates, cannabinoids, and cocaine.

The second case involves a 38-year-old male nurse charged with DUI after a witness complained of his erratic driving to state police. The arresting trooper was also able to observe the driver's dangerous behavior while driving and pulled him over soon after. Upon initial contact, the driver was observed to be wearing his coat inside out and upside down. A recently filled prescription for lorazepam (0.5 mg) fell out of the suspect's pocket. The suspect failed initial SFSTs and the breath alcohol was negative, so a DRE was called. The DRE opined that the suspect was under the influence of a CNS depressant and cannabis. The suspect admitted to taking lorazepam on an "as needed" basis, but did not take it regularly. Physician affidavits were obtained verifying that the suspect was under their medical care and prescribed Ativan® and Seroquel®. The laboratory's findings reflected a blood quantitation of lorazepam (79 ng/mL). The laboratory did not test for the Seroquel®. The presumptive positive cannabinoids drug screen was subsequently confirmed negative for both THC and THC-COOH.

The last case involves a subject, who voluntarily participated in an ongoing study evaluating the applicability of oral fluids to DRE certifications/DUI investigations. Oral fluid testing is not new to forensic toxicology; however, the use of oral fluids in DUI cases is being developed. Oral fluids offer many potential advantages over conventional blood and urine matrix testing, particularly the ease of sample collection. Blood, urine, and oral fluid samples are collected from the volunteer who is under the influence of CNS depressants and narcotic analgesics. The results of each matrix are compared to one another and against the DRE's opinion.

All three cases reflect the laboratories' limitations in terms of the types of drugs tested and matrices used. Forensic Toxicology is an ever- expanding field that must consider ways to optimize and standardize testing through collaborative research and sharing of data.

DRE, Impaired Driving, Forensic Toxicology

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