



K44 Using Pharmacology to Screen Your DWI-Drug Cases

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After attending this presentation, attendees will be able to describe the pharmacologic criteria necessary for a prosecutor to meet the burden of proof to establish DWI-Drugs and apply these criteria to the findings of the presence of a drug in the urine.

This presentation will impact the forensic science community by presenting pharmacologic criteria which will help prosecutors select meritorious cases and defer going forward on cases when the pharmacology clearly will not support guilt beyond a reasonable doubt. An awareness of these criteria should minimize the prosecution of unwinnable cases, save valuable court time, improve the quality of justice in the courts, and protect innocent citizens from unnecessary mental anguish and monetary expense. A prototypical case will be discussed.

In order to successfully prosecute a DWI-Drugs case, the State must show that the defendant driver was impaired, and that the impairment was proximately caused by a previously ingested drug. The drug could be an illicit drug, a prescription drug, an over-the-counter drug, or an inhalant of some type. An admission by the driver that he/she took a drug earlier, or the positive results of a urine drug test, only indicate prior exposure, but do not demonstrate that the previously ingested drug proximately caused impairment at the time of the police stop. Evidence of impairment is best established by observations of erratic behavior by fact witnesses, and testing of balance, coordination, and cognitive function by professionals qualified to administer such tests.

Example of an Unwinnable DWI-Drug Case: In a Commonwealth of Massachusetts case (Com), a young woman, E.D., was stopped for crossing a road line. Her urine screen was positive for a small amount of butalbital, a barbiturate found in common prescription anti-migraine medications.

Many drugs remain in the body long after the time interval of their pharmacologic activity has elapsed (biosphere). Thus, determining the presence of a drug in a biological fluid is not a sufficient basis to opine that an individual is impaired. Instead, one must determine the biosphere of that drug, that is, the duration of time the drug exerts its pharmacologic effect on the individual, rather than its residence time in the body. Moreover, only certain drugs show a good correlation between the magnitude of their blood level and the extent of the effect they produce on the individual. Other drugs, called hit-and-run drugs, produce an effect long after they have left the body and are no longer detectable in blood or urine. A good example of such a drug would be the glucocorticoid, prednisone, which produces major changes in the hypothalamic-pituitary-adrenal axis, which may persist for weeks or months.

The half-life of butalbital is 1.5 – 3.5 days. Based on generally accepted pharmacokinetic principles, it takes 6 – 10 half-lives to rid the body of a drug. This means that E.D. could have taken the drug more than a month earlier and still had a positive urine test on the day she was stopped, even though the pharmacologic effects on migraine relief and possible impairing effects last only a few hours, and tolerance to barbiturates is known to occur after repeated use.

The COM planned to have a Drug Recognition Expert (DRE) testify at trial that the defendant had been impaired, an opinion that could not be proven beyond a reasonable doubt, and one to which the DRE was not percipient, as she had never met or assessed the defendant. A DRE is basically a fact witness, not an expert, and according to *U.S. vs. Horn* (Motion Hearing, 2001) testifies under FRE 701 not FRE 702, and cannot offer opinion testimony on scientific or technical issues. However, on the day of the *Daubert* hearing to strike the DRE, the COM reconsidered its position, and agreed to let the defendant off with probation.

In this case, a simple pharmacokinetic analysis would have indicated the very low likelihood that the prosecution could have proved its case beyond a reasonable doubt, or that a jury would have convicted. The defendant was subjected to unnecessary anxiety and considerable expense, without an adequate basis for prosecution of this case.

Pharmacokinetics, Lay Witnesses, Expert Witnesses