K8 Driving Behavior and Impairment Symptoms in Cannabinoid Positive Subjects Arrested for Driving Under the Influence of Drugs (DUID)

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The goal of this presentation is to review driving behaviors and impairment symptoms in a series of 108 cannabinoid positive drivers suspected of driving under the influence of drugs.

This presentation will impact the forensic community and/or humanity by assisting with the toxicological interpretation of cases by comparing common signs, symptoms, observations and driving behavior in drivers suspected of driving under the influence of marijuana.

Quantitative drug toxicology is complemented by case specific observations, such as performance on field sobriety tests, signs, symptoms and other observations made by qualified law enforcement personnel. Quantitative blood drug results and supplemental information are presented in a series of 108 cannabinoid positive drivers.

Marijuana can produce a unique spectrum of effects that prevents classification into only one class. From an impaired driving standpoint however, scientific studies have shown that delta-9-tetrahydrocannabinol (THC) can impair cognitive and psychomotor functions associated with driving in a dose dependent manner. Yet, there is no widely accepted concentration of THC in blood at which a driver is deemed impaired for the purposes of driving. Quantitative blood toxicology is important in DUID cases involving cannabinoids, but must be carefully interpreted within the context of case specific information and the collection time, due to the rapid decline of THC in blood following smoking. Interpretation is further complicated by the frequency of multiple drug use among impaired drivers, particularly those using cannabinoids.

In a series of 108 drivers arrested for DWI, quantitative blood cannabinoid concentrations were reviewed, together with the reason for the stop, signs, symptoms, performance on standardized field sobriety tests, and other observations. Cases involving only cannabinoids were compared with cannabinoids in combination with other drugs. Mean, median and mode 11-nor-9-carboxy-delta-9-THC (carboxy-THC) concentrations were 39, 29 and 7 ng/mL (n=108) respectively. THC was detected in 50 of the cases and reported quantitatively in 45, with a mean, median, and mode of 5, 4 and 3 ng/mL respectively. Concentration ranges for THC and carboxy-THC were 2-18 and 2-235 ng/mL respectively. The limit of quantitation of the method was 2 ng/mL. The reason for the stop, performance on field sobriety tests and roadside observations were compared for different sub-sets of data that were organized by presence of parent drug (THC) and other drugs present. The three most common reasons for the traffic stop were speeding (n=30), crash (n=25) and weaving (n=21). The performance on standardized field sobriety tests were evaluated in terms of the number of clues, together with other observations, the most common of which were impaired balance and coordination (n=54), bloodshot eyes (n=50), watery/glassy eyes (n=32) and slurred or thick speech (n=26).

Marijuana, Impaired, Driving

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