K6 Cocaine Impaired Driving: Evaluation of Toxicology, Driving Behavior, and Impairment Symptoms in Arrested Drivers

Rachael Malfer, Anna Leggett, BS, Sharla McCloskey, BS, and Sarah Kerrigan, PhD, Forensic Science Program, College of Criminal Justice, Sam Houston State University, Chemistry and Forensic Science Building, 1003 Bowers Boulevard, Huntsville, TX 77341*

The goal of this presentation is to evaluate common observations, driving behavior, and impairment symptoms in actual drivers that have used cocaine and are apprehended for driving while intoxicated (DWI).

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 cocaine.

Driving behavior, reason for the traffic stop, documented signs and symptoms and quantitative blood toxicology are compared in a series of 48 persons suspected of driving under the influence of cocaine.

Cocaine is a central nervous system stimulant, which at high doses can produce characteristic physiological and behavioral effects that are inconsistent with safe driving. However, many scientific studies are limited by the low dose of drug that is administered to human subjects,

doses that typically much lower than those used by illicit drug users. Multiple drug use, tolerance, dependence, and withdrawal effects of the drug make interpretation of these cases challenging. In many instances, toxicologists take a case-by-case approach to impairment by drugs other than alcohol. This process involves a careful review of toxicology test results, driving and observations that were made by law enforcement personnel.

In this series of 48 drivers, only 10 cases involved cocaine alone. The remaining 38 cases involved multiple drug use, most frequently ethanol, marijuana, benzodiazepines, and methadone. Mean, median and mode cocaine concentrations were 0.09 ± 0.12 (SD), 0.05 and 0.02 mg/L respectively. Mean, median and mode benzoylecgonine (BE) concentrations were 0.81 ± 0.94 (SD), 0.43 and 0.14 mg/L respectively. The total range of concentrations for cocaine and BE for all the cases (n=48) were 0.01-0.53 and 0.03-4.10 mg/L respectively. Comparison of quantitative drug results for cocaine only and cocaine in combination with other drugs indicated no significant differences. The most common reason for the traffic stop was a crash. Other common reasons for the stop were notification by dispatch (following a report of impaired driver from the public) and impaired speed control. The performance on standardized field sobriety tests (SFSTs), which can provide important information on mental and physical function, were evaluated for all the cases. SFSTs were not performed in every case due to injuries sustained in a crash, uncooperative subjects, or subjects that were too impaired to

safely perform the tests. Documented signs, symptoms, and observations made by the arresting officer were compared. The most common observation for both cocaine only and cocaine in combination with other drugs was impaired psychomotor function.

Cocaine, Impaired, Driving

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