Alcohol and Drugs in Suspected Impaired Drivers in Ontario from 2001 to 2005

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Breath samples are the most frequently obtained sample for determining blood alcohol concentrations (BAC) in suspected impaired drivers in Canada; however, when a peace officer has reasonable and probable grounds to believe that due to the physical condition of a driver it is either impractical to obtain a breath sample or that the driver is incapable of providing a breath sample, then the peace officer can make a demand for blood. This study retrospectively examines drug and alcohol findings in blood samples collected from suspected drinking drivers over a five-year period.

There were 733 suspected impaired driving cases submitted to our laboratories for the purpose of blood alcohol testing during the study period. Males represented the largest percentage (n = 623, 85%) and ranged in age from 16 to 83 years old (mean = 36). Female drivers (n = 110) ranged in age from 15 to 72 years old (mean = 35). BACs, measured by headspace gas chromatography-flame ionization detection, ranged from not detected (ND) to 414 mg/dL (mean = 165) for males and ND to 425 mg/dL (mean = 160) for females. Alcohol was detected in 708 cases, with the majority of cases (n = 640, 90.3%) having a concentration of 80 mg/dL and greater at the time of sampling. The majority of drivers were involved in a motor vehicle accident (MVA; n = 658, 89.8%), with single MVAs (n = 412, 56.2%) being most common.

The language of the Criminal Code of Canada states that the purpose of a blood demand is to “enable proper analysis to be made in order to determine the concentration, if any, of alcohol in a person’s blood”, however, it is the practice of this laboratory that when an analysis yields a BAC of less than 100 mg/dL and/or there is reported history of specific or suspected drug use, then analysis for drugs are generally performed. In this study, 16 cases (2%) were analyzed for alcohol and one other specified drug, and in 26 cases (4%), more extensive analyses were performed, that is general screening for pharmaceuticals and drugs of abuse. Of the aforementioned cases, 34 had positive drug findings. The drugs detected most frequently were: $\Delta^8$-THC (n = 18; <1 - 10 ng/mL), benzoylecgonine (n = 8; 0.13 - 6.3 mg/L), and cocaine (n = 6; < 0.13 - 0.29 mg/L), morphine (n = 6; <15 - 101 ng/mL), lorazepam (n = 5; 10 - 501 ng/mL) and diphenhydramine (n = 4; < 0.13 mg/L).

The findings reported herein represent an examination of blood samples from impaired drivers in Ontario from 2001 to 2005 where a demand for blood was made by a peace officer. Of 733 drivers, 97% were alcohol positive, and of these, 90% had a BAC $\geq$ 80 mg/dL, the legal limit in Canada. Analyses for drugs other than alcohol performed in a small subset of these drivers demonstrated that THC, cocaine, and morphine were the most frequently encountered drugs. The data reported above is reflective of drug use in those drivers where such analyses were performed; however, it cannot be used to determine the frequency of drug use by all drivers in Ontario. The data demonstrates that “drug-driving” does occur and that there is a need for a systematic and comprehensive investigation of drug use in drivers in Ontario.

Keywords: Alcohol, Drugs, Driving, Impaired