After Two Years of *per se* Legislation in Switzerland: Prevalence of Drugs Among Drivers in Geneva

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Switzerland has introduced in 2005 a so called “per se” traffic safety law with a zero tolerance for major illicit drugs (THC, cocaine, morphine, and amphetamines). This law states that “a driver is considered unable to drive each time it is proved that his blood contains” one of the above-mentioned substances. The Swiss Society of Legal Medicine has proposed cut-offs at 1.5 ng/mL for THC and 15 ng/mL for the other substances in whole blood, in order to have equity all over Switzerland. Although the previous law included enough rules to punish intoxicated drivers, this new regulation encouraged police forces to ask for more toxicological analyses. At the same time, the blood alcohol concentration limit has been reduced from 0.8 to 0.5 g/Kg. However, only cases above 0.8 g/Kg are considered as a major traffic offense.

In DUI cases urine is analyzed by immunological and chromatographic methods in order to assess the substances consumed by the driver. Identified substances are then quantitated in blood in order to determine if the driver was under the influence at the time he/she was driving. The analyses focus on drugs-of-abuse.

The total number of DUI cases analyzed by our Institute increased from 450 in 2003-2004 to 997 in 2005-2006. DUI cases included only drivers suspected to be under the influence of other drugs than alcohol. In those cases a urine sample is taken in addition to blood sample. The average age of drivers was stable at 34 ± 14 and blood alcohol concentration (BAC) remained exactly the same at 1.28 ± 0.61 g/Kg. During the first period (2003-2004), 55% of the drivers (62% during the second period) had BAC above 0.8 g/kg whereas 9% (5%) were between 0.5 and 0.8 g/kg. 69% (57%) of the drivers were positive for drug(s) other than alcohol. Cannabis was the most detected substance in urine with 53% (38%) of the cases being positive. Cocaine was present in 22% (17%), benzodiazepines in 14% (13%), opiates in 8% (12%), methadone in 7% (6%) and amphetamines in 2% (4%). Other detected substances included barbiturates, methaqualone, dextropropoxyphene, tricyclic antidepressants, and other psychoactive drugs.

Among the drivers positive for cannabis in urine, 69% where found positive also in blood during the first period (75% during the second period). For cocaine, 64% were positive (57%), for amphetamines 75% (50%), and for morphine 31% (49%). When drugs-of-abuse where positive, other drugs were not determined in blood. The total number of BAC determinations increased by 23% whereas the percentage of positive cases (82%) remained stable. Cases with low BAC (between 0.5 and 0.8 g/Kg) also remained stable, because the breathalyzer result is evidential if the driver accepts the value.

The comparison of the data obtained along those two periods, before and after the new law came into force, shows that the number of cases increased as the police could more easily prosecute intoxicated drivers and because their attention was focused on this issue. The higher number of cases did not provide more positive results. The reduction of the BAC limit did not provide more cases because the driver who accepts the breathalyzer result is not submitted to any blood sampling.

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