K38 Drugs in Driving Fatalities in British Columbia, Canada

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Attendees will be briefed on the drugs commonly associated with driving fatalities in BC, Canada.

By understanding the drugs commonly associated with driving fatalities, this presentation will impact the forensic community and/or humanity by helping to design appropriate interventions for target groups.

Objective: Since January 1, 2004, the Provincial Toxicology Centre and the British Columbia Coroner's service have implemented a policy that allows for complete drug screening on all samples collected from driving fatalities. This abstract represents a preliminary review of these results (from January 1, 2004 to June 30, 2004), however, the data presented will
cover cases collected from January 1, 2004 until December 31, 2004.

Methods: Toxicology results were included in the study, retrospectively from cases where the deceased was identified as the driver involved in a fatal motor vehicle incident investigated by the BC Coroner's service. Drug screening was performed for illicit drugs including morphine and cocaine and metabolite (COC) and cannabinoids (THC) by immunoassay. Basic drugs were screened by liquid-liquid extraction followed by GCNPD and GC-MS electron impact detection. Acidic and neutral drugs were screened by liquid-liquid extraction followed by HPLC-DAD. Amphetamine type stimulants (AMP) were screened by LC-MS. Volatiles was assayed by GC-FID.

Results: During the first 6 months of the year there have been 96 driving fatality investigations, where a full drug screen was conducted. The mean age (SD) of cases was 35y (13y), the median 32y, and the range 15 - 66y (N=90). The gender was identified in only 48 of the cases; 38 males and 10 females. Approximately 33% (N=34) of the cases had a negative toxicology screen. The mean age of these cases was 35y (15y), the median was 31y, and the range was 15 - 60y (N=32). The remaining 67% of cases (N=62) had at least one drug identified. The mean age was 35y (12y), the median was 33y, and the range was 16 - 66y (N=58). Of the cases containing drugs, 36 had one drug detected, 15 had two, 7 had three, 2 had four and 2 had five. Ethyl alcohol (EA) was detected most frequently in 58% (N=36) of cases. The mean EA concentration was 0.16 ± 0.10 % (35 ± 21 mmol/L) median 0.18 (39 mmol/L). The following drugs and the mean (SD), median and range of ages is described:

	Age (y)				
Drug	**Mean**	**SD**	**Median**	**Range**	**N=**
Ethyl alcohol	33	10	33	16 - 51	36
Cannabinoids	29	12	34	16 - 62	17
Cocaine and metabolite	33	14	30	16 - 66	16
Opiates				23 - 57	7
Amphetamine Type				22 - 66	7
Other prescription drugs	37	12	40	16 - 62	28

Of the AMP group, there were 5 cases that contained methamphetamine, one with MDMA, and three with pseudephedrine. One case contained all three. In the opiate containing cases, all had levels of morphine with two of the cases having low levels of codeine, while one case identified MAM. In the cases where EA was identified the most commonly additional identified drugs were COC (N=9), followed by THC (N=5).

Conclusions: The preliminary study indicated that EA is the drug most frequently associated with driving fatalities, followed by THC and COC. There doesn't appear to be a significant difference in the ages of the cases and the different drugs detected. However, due to the relatively small number of cases in the preliminary study, any difference may not yet be apparent. Examination of the data for the year will give a more complete assessment of the demographics of the driving fatalities in BC.

Drugs, Driving, Fatalities

 ** Presenting Author*