Drug Prevalence in Road Trauma Victims in Victoria

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Background. Previous studies in Victoria have found drugs other than alcohol to be highly prevalent in drivers involved in fatal crashes [1, 2]. However there is scarce information on overall drug prevalence in the driving population where prevalence studies are not currently possible. One approach to studying drug use is to obtain information following hospital admission after crashes.

Objectives. To determine the prevalence of drugs in injured Victorians involved in a motor vehicle accident.

Methods. With Ethics Committee approval, a blood sample was obtained from all patients taken to a major trauma hospital in Melbourne following a motor vehicle collision. This was done at the same time and under the same law as the compulsory blood screening which is legal in Victoria. 358 specimens have been submitted for analysis so far. Blood stored in vacutainer tubes containing preservative were screened for drugs using enzyme-linked immunosorbent assay (ELISA) and confirmed using chromatographic techniques. Medically administered drugs were excluded from the results.

Results. Cannabis was the most commonly found drug (36%). The next most prevalent drugs were benzodiazepines (14%), amphetamines (12%) and opioids (10%). Cocaine was detected in 2% of cases.

Discussion. The prevalence of drugs from initial work suggests that the rate is much higher than previous studies involving fatal accidents [1, 2]. Further analysis is continuing to determine the contribution of drug use to culpability for the crash.

Conclusion. There is a high rate of drug use in road users involved in non-fatal crashes in Melbourne. This has implications for preventative programs.

Introduction

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There is increasing interest throughout the world concerning the incidence of drugs in driving and in their contribution to road trauma specifically. The most common drugs found in fatally injured drivers have been cannabis, benzodiazepines, amphetamine-like stimulants and opioids. A number of reports have detailed the incidence of drugs in fatally-injured drivers around the world. A number of jurisdictions have reported increases in the proportion of drivers using drugs [3-6]. Preliminary data has also suggested similar trends in Australia [7, 8].

Injured drivers also show a high prevalence of drugs. Cannabinoids were found in 13.9 % of French injured drivers, while opioids, cocaine and amphetamines were found in 10.5 %, 1.0 % and 1.4 %, respectively [9]. Impairing drugs were found in 32 % of injured drivers presented to an urban emergency center in Colorado. Cannabis was the most frequent detected drug (17 %) even over alcohol (14 %). [10]. A relatively high incidence was also found in South Australian injured drivers [11].

The purpose of this study was to determine the prevalence of drugs in injured Victorians involved in a motor vehicle crash.

**Materials and Methods**

With Ethics Committee approval, a blood sample was obtained from all patients taken to a major trauma hospital in Melbourne. This was done at the same time and under the same law which permits compulsory blood screening in Victoria. The study samples were subjected to a different analysis procedure than the compulsory procedure which is primarily intended to detect alcohol.

Blood stored in vacutainer tubes containing preservative were screened for drugs using enzyme-linked immunosorbent assay (ELISA) and confirmed using chromatographic techniques. Medically administered drugs were excluded from the results.

**Results**

**Characteristics of Drivers**

The total number of injured persons included in the study was 358.

**Prevalence of drugs**

Cannabis was the most commonly found drug (36%). The next most prevalent drugs were benzodiazepines (14%), amphetamines (12%) and opioids (10%). Cocaine was detected in 2% of cases.

While investigations and confirmations are continuing, a breakdown of all drugs identified will be released towards the end of 2002 (see www.vifp.monash.edu.au/publications for further updates).

**Discussion**

The prevalence of drugs in Australia fatal crashes is somewhat similar to previously published studies in other countries. The relative prevalence of different drugs broadly mirrors their incidences in the community. Cannabis, in line with most countries sampled, was the most frequent detected drug.

Benzodiazepines, amphetamine-like stimulants and opioids represented the next class of
frequently detected drugs. However, one notable difference is the absence of any significant presence of cocaine in Australia. This is accord with the frequency of cocaine detections in Coroners cases and government surveys generally around Australia (OH Drummer, personal communication).

The high relative incidence of cannabis represents drivers with the inactive carboxy- form of THC as well as the active form. Quantification is under way and when this is complete is likely to show a smaller proportion of drivers with a significant level of the active drug. The nest highest drug group represented was benzodiazepines which have been found to be the most prevalent impairing drug in drivers apprehended for impaired driving[12].

It will never be possible to obtain “accurate” data on the incidence of drugged driving because of the impossibility of screening the driving population. The nature of this study means that the population which was tested is biased because it includes people who were brought to hospital following a crash. Persons involved in a crash of lesser severity which did not require hospital admission would not have been tested. There is also an indeterminable effect which may be due to the location of the trauma centre in an area closer to inner city entertainment districts than other hospitals. Despite these limitations, the study is a worthwhile contribution to the epidemiology of drugged driving in Victoria.

References
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