K1 Alcohol and Psychotropic Drugs in Traffic Accident Fatalities in Calabria, Italy, From 2006 to 2015

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After attending this presentation, attendees will better understand the epidemiological impact of Motor Vehicle Crashes (MVCs) in southern Italy and will be aware of the characteristics of traffic accident victims and the link between fatal crashes and alcohol/psychotropic drug consumption (including the role of drug-alcohol and drug-drug combinations in the risk of accidents).

This presentation will impact the forensic science community by illustrating the role of alcohol/psychotropic substances in causing traffic accidents in order to guide driver education programs and improve public safety.

MVCs due to impaired driving are a leading cause of preventable injury and death. Alcohol is involved in approximately 1/3 of serious MVCs resulting in severe injury or death. In the United States, the 2007 National Roadside Survey found that the percentage of drivers who were using drugs (14%) was greater than the percentage who were using alcohol (12%).[1]

Alcohol and drugs are significant risk factors for traffic deaths in Italy. In 2012, 1.8% of checked drivers were found to be impaired by alcohol or drugs. The current Blood Alcohol Content (BAC) limit in Italy, which became law in 2002, is 0.5g/l. Since July 2010, there is zero tolerance for young drivers, novice drivers, and professional drivers for whom the BAC limit is equal to 0.0 g/l. In 2008, ISTAT (National Institute for Statistic) indicated that 2% of traffic fatalities were due to drunk driving. However, this figure is probably underestimated, due to the difficulty involved in collecting this information at the crash scene and also because the autopsy is not required in all cases of fatal crashes.[2]

In this paper, we analyzed the characteristics of road crash victims, paying special attention to their toxicological findings. We have explored the relationship of drunk and drugged driving and the two combined in fatal MVCs. To accomplish this, a population represented by subjects who died in road accidents in the southern Italy (Calabria) from 2006 to 2015 was analyzed.

Data were limited to fatally injured drivers that were tested with autopsy and toxicology tests, using a tiered approach. Out of the 185 fatally injured drivers with toxicological tests information, about 33.5% tested positive for drugs and/or alcohol (n=62). In this study, a three "level alcohol" scale was built based on the classification found in the article n.186 of the Italian Traffic Code: mild (0.5> BAC <0.8 g/L); moderate (0.8>BAC<1.5g/L); and, severe (BAC>1.5g/L). Thirty-nine subjects were positive having BAC values over the legal limit: mild-level-14.5%; moderate-19%; and, severe-29%. Thirteen subjects tested positive for psychotropic substances such as drugs (cocaine, THC, heroin, amphetamines, opiates, benzodiazepines, barbiturates) and their metabolites. Finally, ten victims had high levels of both alcohol and psychotropic substances.

Cases were also analyzed by age and gender to capture different age-based patterns of drug/alcohol consumption

as well as gender variations in risk taking. The proportion of men with positive toxicological analysis exceeded that of women: 90% of the victims were males and 10% were females. Furthermore, the results were highlighted to the most frequently represented age group among the road victims, dividing the sample in positive and negative toxicology tests. In conclusion, alcohol and psychotropic drugs indicate a significant risk factors for MVCs.

According to the results of the study, it is appropriate that the existing alcohol-related traffic laws in Italy become stricter.

Reference(s):

1. Lacey JH, Kelley-Baker T, Furr-Holden D et al. *2007 National Roadside Survey of Alcohol and Drug Use by Drivers: Drug Results (DOT HS 811 249)* Washington, DC: National Highway Traffic Safety Administration; 2009.
2. OECD/ITF (2015), Road Safety Annual Report 2015, OECD Publishing, Paris. *http://dx.doi.org/10.1787/irtad-2015-en*.

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