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ACCEPTED MANUSCRIPT

"Positive" urine testing for Cannabis is associated with increased risk of traffic crashes.

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Highlights

- the aim is verifying the association of chronic use of Cannabis with traffic crash
- % of positive urines for THC-COOH (LC-MS/MS) in traffic accidents was = 8.2
- % of positives for THC-COOH (LC-MS/MS) in a control group was = 0.8%
- both the "chi square" test and the Odds' ratio were highly significant (P<<<0.01)
- the usefulness of urine tests for Cannabis in driving licence issuing is confirmed

Abstract

Although recent Cannabis use is widely reported to be associated with drug-related traffic accidents, the evidence that Cannabis users show an increased risk of being involved in road crashes is still not unequivocally proved. The purpose of the present work is to provide an objective assessment of this hypothesis, by comparing the frequency of occurrence of positive urine analyses in drivers involved in traffic accidents (n=1,406) with that observed in a control population undergoing mandatory urine drug testing (n=1,953). Urine analyses for drugs of abuse were performed by screening immunometric techniques followed by confirmation with UHPLC-QQQ MS, adopting a cut-off concentration for THC-COOH of 15 ng/mL. A case was classified as "positive" when a driver admitted to hospital for road traffic injuries showed urine concentrations of THC-COOH higher than the cut-off. All samples showing positive results for

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