

Evaluation of illicit drug consumption in drunk drivers

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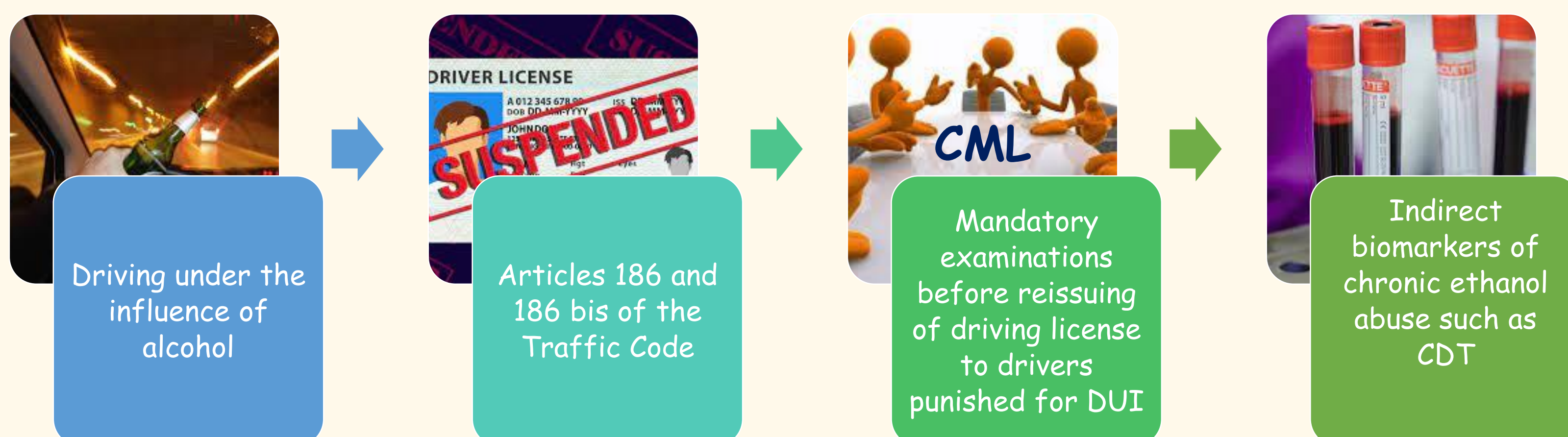
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Driving under the influence (DUI) is the offense of operating a vehicle while impaired by alcohol or drugs. According to the Italian National Institute of Statistics (ISTAT), in 2019 there were approximately 5,117 traffic crashes out of a total of 58,117 related to the use of alcohol and drugs, accounting for 8,7 % and 3,4 %, respectively¹. Impaired driving continues to be a serious traffic safety and public health issue for the entire country. DUI of alcohol is also a violation of the Italian Highway code. Drunk drivers often pay significant fines, lose their license, and face higher insurance costs.

Italian legislation requires mandatory examinations before issuing of driving license to drivers punished for DUI of alcohol and/or drugs. Generally, the assessment procedures, adopted by local medical commissions (CML), for medico-legal driving license reissuing to drunk drivers are only based on indirect biomarkers of chronic ethanol abuse such as carbohydrate-deficient transferrin (CDT).



The experimental study included 301 drunk drivers undergoing a driving license issue protocol during 2019.

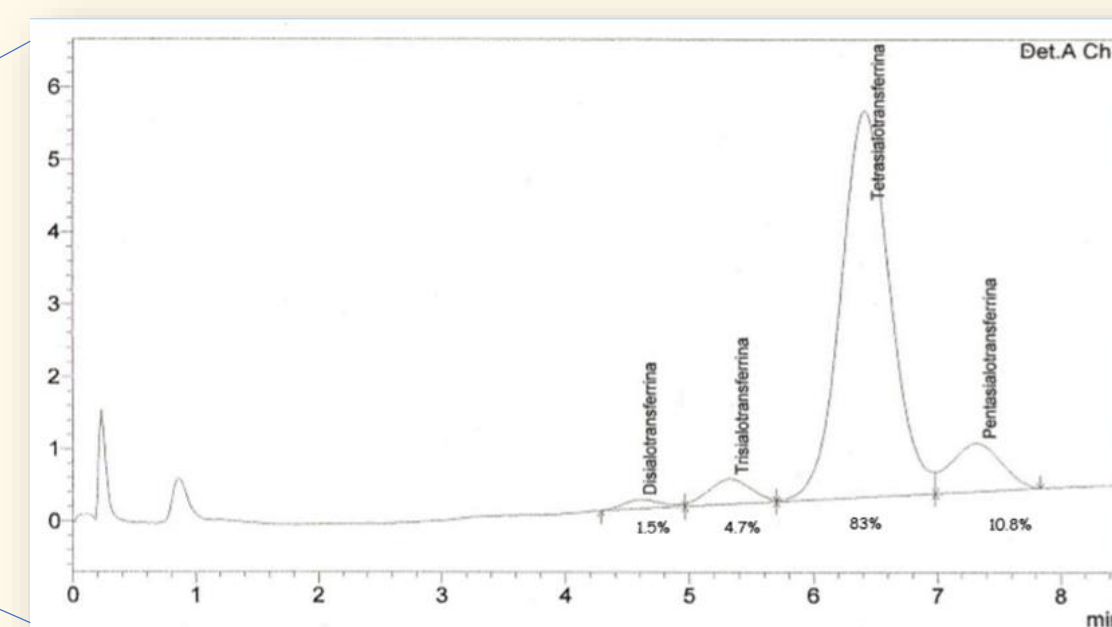
METHODS



Blood samples (n. 301) of drivers sanctioned for DUI of alcohol.



% CDT analysis by HPLC-UV



Chronic alcohol abuse: CDT value above 1.8% (cut-off).



These additional analyses were performed anonymously.

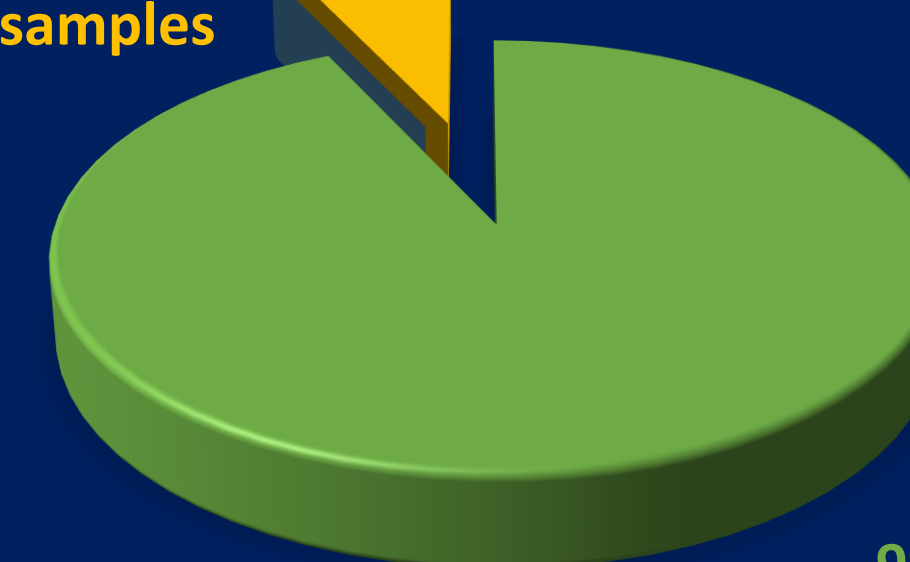


Screening of the most common illicit drugs of abuse (ILAB 650 and GC-MS).

RESULTS

% CDT ANALYSIS

Chronic alcohol abuse (CDT >1.8%)
7% of samples



■ Samples with CDT < 1.8%
■ Samples with CDT > 1.8%

CDT < 1.8%
93% of samples

SCREENING ANALYSIS

24% of samples were positive to illicit drugs (15% cannabis, 7% cocaine e 2% opiates). On the other hand, only 7% of the analysed samples had a CDT value higher than the cut-off (1.8%).

Class of substance	Number of samples (total 301) n (%)
Cocaine	22 (7%)
Cannabinoids	45 (15%)
Opiates	5 (2%)
Amphetamine and analogues	ND
Methadone	ND

The screening analysis was carried out on blood samples



detection window of few hours!!



CONCLUSION AND PERSPECTIVES

This study underlines the well-known phenomenon of the associated intake of alcohol and drugs that is not currently considered in the medico-legal procedures, adopted by CML, for license reissuing to drunk drivers.

Future study:

- screening of drugs of abuse by UHPLC-MS
- EtG hair analysis to detect chronic alcohol abuse

REFERENCES

1. INCIDENTI STRADALI Anno 2019, Automobile Club d'Italia, Istituto Nazionale di Statistica, 23 luglio 2020