High correlation between carbohydrate deficient transferrin (CDT) and alcohol-related road traffic accidents

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Introduction and Aim: It is commonly agreed that high blood alcohol concentrations (BACs) significantly increase the likelihood of occurrence of road traffic accidents. However, only limited literature on the correlation between chronic alcohol abuse and such risk can be found. The aim of the present study was to investigate a possible association between BAC in injured drivers and one of the most reliable biomarkers of chronic alcohol abuse, such as carbohydrate deficient transferrin (CDT).

Materials &Methods: The analyses of BAC and CDT were performed following routinely used methods [1,2]. For BAC, the Italian legal limit of 0.50g/L was used as cut-off, whereas a cut-off of 2.0% was used for CDT, according to the standardization proposed by the IFCC. A total of 929 drivers, tested for BAC at the time of hospital admission after the accident, were classified in two groups: $InjDr_1$ (BAC≤0.50g/L) and $InjDr_2$ (BAC>0.50g/L); all drivers were also tested for CDT.

Results & Discussion: $InjDr_1$ included 674 individuals, only 2.5% showing a CDT above the cut-off, whereas $InjDr_2$ group consisted of 255 subjects, 28.6% testing

positive for CDT (i.e., >2.0%, Odds Ratio 15.5). When subdividing the whole InjDr group into classes of CDT, it was possible to appreciate a steady increase in the percentage of BAC-positive drivers along with the increase of %CDT. On the other side, average BAC was found to parallel each class of CDT.

Conclusions: The reported data suggest that CDT could be used to predict the risk of being involved in an alcohol-related car accident.

References
[1]   G. Lippi *et al.* Biochem. Medica. 27:398-403; 2017
[2]   F. Bortolotti *et al.* Clin. Chem. 51:2368-2371; 2005