

A 15-year Retrospective Analysis of Major Trauma Recidivism and Alcohol Use in Nova Scotia

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Introduction

Trauma recidivists are individuals who present on greater than one occasion for different episodes of traumatic injury. The factors associated with recidivism have not been fully investigated. The purpose of this study was to describe recidivism of patients with major trauma in Nova Scotia over a 15-year study period and its relation to alcohol use.

Methods

Retrospective analysis of all adult (age >17 years) major trauma patients in Nova Scotia between 2001-2015 using data from the Nova Scotia Trauma Registry. Alcohol-related trauma recidivists were defined as having >1 traumatic injuries with a positive blood alcohol concentration (BAC) at any injury. Patients were grouped by BAC (negative [$<2\text{mmol/L}$], low [$2\text{-}10\text{mmol/L}$], moderate [$10.1\text{-}17.3\text{mmol/L}$], high [$>17.3\text{mmol/L}$]) at time of injury (non-recidivists) or by highest BAC recorded at any injury (recidivists).

Results

A total of 9365 trauma patients were included in the analysis. Of these patients, 150 (1.6%) sustained >1 traumatic injury during the study period (6 recidivists had >2 traumas). Recidivists and non-recidivists were similar in age (recidivists: mean age 50 ± 22.5 years vs. non-recidivists: mean age 52 ± 21.5 years). A greater proportion of recidivists were male (recidivists: 83% male vs. non-recidivists: 73% male; $p=0.008$). With respect to injury severity at first injury, the mean Injury Severity Score (ISS) was higher in non-recidivists (recidivists: ISS 18.0 vs. non-recidivists: ISS 21.9; $p<0.001$). BAC testing was performed in 64% (96/150) of recidivists and 47% (4337/9215) of non-recidivists. Among recidivists, 68% (65/96) had a positive BAC on at least one injury; by comparison, 46% (2010/4337) of non-recidivists tested positive for blood alcohol at injury. Patients with a positive BAC were 2.4 times more likely to be recidivists (95% CI 1.6-3.7, $p<0.001$).

Conclusion

In our study, alcohol intoxication was an important factor in trauma recidivism. Further inquiry into the impact of alcohol use on trauma recidivism is warranted.