Alcohol-related injuries requiring surgery

Swain and colleagues’ recent study published in the April assessing the establishment of safe zones at major rugby events in Wellington and the introduction of an alcohol intoxication pathway, highlighted the impact alcohol can potentially have on healthcare workload and costs if not managed effectively. It is clear, however, that alcohol’s impact on healthcare is not just limited to large sporting events.

The Law Commission 2009 paper ‘Alcohol in Our Lives’ noted that, “[i]f there is no decrease in alcohol consumption we can expect to see hospital admissions continuing to increase.” This is concerning as it increases the cost and resource burden on the health system.

The Alcohol Advisory Council of New Zealand estimated that alcohol accounted for 3.9% of all deaths in 2000, with trauma related to alcohol consumption (51%) being the biggest contributor to this figure. Previous studies examining the extent of alcohol related trauma leading to hospital admissions in New Zealand have tended to focus on maxillofacial injuries and orthopaedic patients.

In order to characterise alcohol related trauma requiring surgery in Dunedin Public Hospital, we conducted a retrospective cross sectional analysis of all alcohol-related trauma cases requiring surgery between 1 November 2007 and 30 April 2008, irrespective of surgical sub-speciality. The list of all acute surgical procedures (procedures that are unplanned and urgently required) performed was obtained from the Department of Surgery.

Admissions that were due to trauma were identified by ACC documentation. Any diagnosis recorded in the notes that seemed to have arisen from underlying pathology not related to trauma, as in the case of slipped upper femoral epiphysis, was excluded. Documentation (via patient report or physician assessment) of alcohol consumption relating to the injury was recorded.

Over the 6-month period examined, there were a total of 1344 admissions that required acute surgical intervention. Of these admissions, 689 cases had associated ACC documentation. Two cases of slipped upper femoral epiphysis were excluded. From the 687 case notes of the study population, 592 were available and analysed (86%).

The Orthopaedic Department had the highest proportion of trauma (91%), followed by Maxillofacial (86%), whereas there was no trauma-related surgery in Obstetrics and Gynaecology.

Length of Stay (LOS) as inpatient varied from Neurosurgery (14.3 days) to Urology (1.5 days), with median LOS of 4.9 days. Of the 592 cases analysed, there were 55 (9.5%) clearly documented cases of alcohol-related trauma.

Univariate comparisons showed significant differences between the alcohol-related and non-alcohol-related trauma groups. The alcohol-related trauma group consisted of more males (p = 0.003), non-Europeans (p = 0.017), and unemployed individuals (p <
0.001) than the non-alcohol group. Multivariate analysis showed that older age (odds ratio, OR) = 1.72, \( p = 0.046 \) and male gender (OR=1.89, \( p = 0.020 \) were significant predictors of alcohol-related injuries requiring surgery.

Unemployment was the strongest predictor of alcohol-related trauma requiring surgery compared to those who were employed (OR=5.91, \( p < 0.001 \), after adjusting for age, gender and ethnicity. In comparison with the unemployed, students were less likely to present with alcohol-related trauma (OR=0.111, \( p < 0.001 \)).

Of the 16 referral letters transferring care to a surgical speciality, six (38%) failed to mention alcohol-related injury. Emergency Department notes documented 28 cases (50%) of alcohol-related injury, but only 11% focused on background consumption of alcohol (outside the injury).

When focusing on house surgeons, there was a high rate of reporting of alcohol-related trauma (63%) and background alcohol consumption (63%). However, in discharge summaries, there was a marked drop in reporting of alcohol-related trauma (32%), and only 4% of background alcohol consumption was documented. Seventy-three percent of anaesthetists did not mention alcohol use in the preoperative anaesthetic notes although alcohol-related injury was stated elsewhere within these patients’ notes.

In summary, alcohol-related trauma places even greater pressure on an already strained health system, diverting theatre resources away from elective surgeries. The minimisation of such trauma is clearly important.

Whilst younger males have been well known to be likely to abuse alcohol, this study found unemployed individuals significantly more prone to alcohol-related injury. A link between alcohol and employment status has been previously found.\(^{12,13}\) However, there is a clear need for further research into the relationship between unemployment and alcohol use.

Documentation of alcohol-related trauma was also found to be poor. Poor documentation of alcohol use in New Zealand was first raised by Hamilton and Menkes, who suggested more emphasis needed to be given during medical school about obtaining accurate information about alcohol use.\(^8\)

After nearly 20 years, however, there has been little progress. Improvement in the accuracy of documentation is vital in addressing the health burden of alcohol use.

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