

Screening and brief alcohol interventions in trauma centres

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Summary

A third of all trauma beds are occupied by patients injured while under the influence of alcohol, yet trauma centres currently treat the injury and ignore the underlying alcohol problem. The incorporation of brief interventions to motivate patients to reduce alcohol intake has been associated with a reduction of their drinking and a resultant decrease in health care costs. While trauma cen-

tres are ideally situated for alcohol screening, interventions, and referral, the efficacy of such a program should be confirmed and the strategies for its optimal implementation in the routine practise of care should be further evaluated.

Key words: trauma centres; alcohol interventions; screening

Alcohol and trauma

Alcohol is a major risk factor for trauma. In a sample of 2,524 individuals admitted in the Emergency Department (ED) of a large trauma centre in Seattle, 46% were under the influence of alcohol (blood alcohol concentration [BAC] ≥ 0.8 g/l) and/or screened positive for an alcohol use disorder [1]. Focusing on motor-vehicle accidents, a study conducted at the ED of the Lausanne University Hospital, found that 34 out of 118 (29%) male patients were intoxicated (BAC ≥ 0.8 g/l) when injured in a traffic accident [2].

Alcohol use disorders are by far the most common underlying health problem found in trauma victims, affecting 25–40% of the patients, com-

pared to approximately 10–20% in patients with other medical conditions [3]. A recent study explored the relationship between trauma in the context of alcohol intoxication and the probability of an associated alcohol use disorder. In a cohort of 166 individuals admitted to a French ED with acute alcohol intoxication (BAC ≥ 0.8 g/l), almost 90% were likely to meet criteria for alcohol abuse or dependence [4]. Yet, numerous trauma patients attending ED are not intoxicated but may be problem drinkers. Indeed, 26% of patients without detectable BAC on ED admission screened positive for an alcohol use disorder [5].

Alcohol screening in trauma centres

A counselling intervention would be possible only if the target population can be identified. What is the current practice regarding alcohol screening in trauma centres? In the United States, a survey demonstrated lack of standardised alcohol screening in 95% of 125 trauma centres [6]. Approximately 25% of these centres systematically measure BAC on injured patients, less than 15% formally assess patients for alcohol use disorders, and the provision of alcohol counselling as a routine component of trauma is even less frequent [7]. A telephone survey of screening procedures by ED staff in major hospitals of the French-speaking area of Switzerland found that no systematic screening

for alcohol use disorder or alcohol intoxication is performed on trauma patients (unpublished data).

Reasons for failure to screen trauma patients regarding alcohol are related to both staff and patient issues. Staff in the ED might underestimate the impact of counselling on hazardous drinkers' alcohol use; their medical practice does not expose them to those patients who successfully reduce their drinking or who stop altogether, whilst they are frequently confronted by patients who continue drinking and repeatedly attend the ED intoxicated [8]. Physicians and nurses in general do not have the time to discuss life habits with their patients and often do not feel comfortable asking

questions about alcohol use, administering standardised screening questionnaires, or measuring BAC. Patients likewise have difficulty talking about alcohol, do not feel confident enough to discuss their life habits, and sometimes feel guilty and defensive.

There are, however, some effective tools for screening alcohol use disorders in trauma patients. BAC has the advantage of being an objective measure but misses patients with alcohol use disorders with negative BAC at the time of admission to the ED. In a study assessing the prevalence of alcohol use disorders in an ED, it was noted that almost half of all patients with alcohol abuse or dependence had negative BAC results [9]. Another drawback in using BAC is that it is a technique, which is usually ordered by the police and therefore has limited acceptability, from the patient's and staff perspectives. Because the absence of alcohol in the blood does not preclude an underlying alcohol problem, and BAC measure is often viewed as threatening, the use of other screening measures such as questionnaires is recommended. The Alcohol Use Disorders Identification Test (AUDIT) is the first choice since it is aimed at an early identification of alcohol use disorders, it can be completed by the patient within 5 minutes, and it was specially designed by the World Health Organisation (WHO) to identify subjects in a large brief alcohol intervention project [10, 11]. The AUDIT was designed to be used across a broad spectrum of patients, and has been validated across sex, age groups, ethnic groups, in various medical settings, and in several languages including German, French and Italian. The AUDIT assesses three dimensions over the 12-month period preceding its administration: drinking patterns (3 items), prob-

lems suggesting alcohol abuse (4 items), and symptoms of alcohol dependence (3 items). The AUDIT has demonstrated good performance in the ED setting, and appears to be one of the more sensitive screening tools [12, 13]. Several alternative screening instruments aimed at identifying alcohol dependence rather than hazardous alcohol use are also well suited for the ED and have good psychometric performances, ie, the CAGE, Brief MAST, and TWEAK [14].

The implementation of alcohol screening in ED should find solutions to help overcome barriers to screening from patients and staff. Patient confidentiality must be preserved because individuals with alcohol problems may be placed at risk with respect to occupation, financial position, or eligibility for insurance coverage. Screening should therefore be preceded by guarantees about confidentiality, and counsellors should first ask the permission to talk about alcohol. Screening and brief intervention should not interfere with the patient care process, according to Edward Bernstein, who implemented a systematic screening and brief intervention program in the ED of Boston University Hospital. The experiences conducted in Boston and Lausanne, suggest that: i) brief intervention in ED should be performed by a health counsellor specially trained in this technique, ii) screening for alcohol use disorders should be imbedded in a screening procedure assessing various health habits influencing health, such as tobacco, diet, or seat-belt use, iii) that the counsellor should address alcohol as well as other health habits, and iv) due to the different mission of prevention and care, the health counsellor should not have any other implication in the treatment process.

Brief alcohol intervention

The term "brief intervention" refers to a time-limited, patient-centred counselling strategy that focuses on changing the patients behaviour and increasing patient compliance with therapy. Subjects are given feedback about their level of drinking, comparing their values to standards suggestive of different levels of problems with alcohol, including a comparison to norms of the individual's drinking quantity and frequency. The reported drinking at admission and its relation to injury, negative consequences of alcohol and symptoms of alcohol dependence derived are reported to patient in a neutral, informative, non-judgmental

manner. The counsellor discusses the implication of these findings with respect to general functioning and the increased risk for negative psychosocial and medical consequences, particularly subsequent trauma. Emphasis is placed on the individual's need to assume personal responsibility for making changes in their drinking habits as a means of risk reduction. The individual is given advice about the need for change and possible strategies to accomplish this. A menu of possible options is presented and the patient is asked to determine an agenda of drinking moderation.

Brief alcohol intervention efficacy

Brief alcohol intervention applies to various individuals and settings, and is conducted by health care providers including physicians, nurses, or so-

cial workers. Although this article focuses on brief alcohol intervention in ED, much research evaluating the efficacy of brief alcohol intervention was

conducted in other medical settings. Reports of 32 randomised trials enrolling 5,718 patients indicate that such interventions were more effective than no counselling, were associated with a decrease in alcohol consumption of 20–40%, and were often as effective as more intensive treatments [15]. A recent review added 15 additional studies, of which 11 (73%) found a significant effect comparable in magnitude to those found across all trials reviewed by Bien and colleagues [15, 16]. In 2002, Moyer and colleagues conducted a systematic review of the brief alcohol intervention literature, including 34 studies in non-treatment-seeking samples. Results indicated that brief alcohol intervention reduced alcohol use over 3-, 6-, and 12-months, that the effect did not persist over a year, and that the effect was larger when individuals with more severe alcohol problems were excluded [17].

While the efficacy of brief alcohol interven-

tion has been established “beyond reasonable doubt” [18], it is important to recognise that several trials found only minimal differences between experimental and control groups [19–22]. However, these trials found significant reductions in alcohol use in both the experimental and control groups. Several factors may explain this observation, in particular that the research procedure itself, which included questions about alcohol use on multiple occasions may have exerted an intervention effect. In this case, simply drawing attention to a patient’s excessive drinking may have positively influenced the patient’s drinking behaviour. Although many of the clinical trials conducted to date have supported the notion that brief alcohol intervention can be effective, numerous questions remain, including clarifying the mechanism of their efficacy, their impact beyond 12 months, and across various settings.

Referral

Admission to an ED is an opportunity to screen for alcohol use disorders, to counsel patients with at-risk drinking and to refer those with alcohol dependence for specialised treatments. However, in a study of 346 intoxicated subjects injured in motor vehicles accidents (median BAC 2.0 g/l) conducted at the Yale University School of Medicine, there was not a single referral to an appropriate substance abuse program for evaluation and treatment [23].

While brief alcohol intervention has demonstrated reductions in alcohol use and problems, their primary goal was to refer patients to specialised treatment setting. Chafetz and colleagues reported in 1962 that among 200 patients diag-

nosed with alcoholism in the ED at the Massachusetts General Hospital, less than 1% sought rehabilitative services. A procedure to establish therapeutic contact with these patients and create a user-friendly referral system was initiated and showed impressive results: compared to 5% of the control group, 65% of the patients made at least a follow-up visit to the alcohol clinic, and half of those returned for five or more visits [24]. In a large trial including patients admitted to 11 general hospitals in New York with untreated alcohol problems contributing to their medical condition, 60% of 2,424 patients receiving an intervention and referral kept their intake appointment and entered treatment [25].

Brief alcohol intervention in trauma centres

Brief alcohol intervention appears particularly appealing in the limited context of the trauma centre because it may be used within the timeframe of an overnight admission, can be based on information obtained from a systematic assessment procedure, and is consistent with a trauma centre mission of identifying problems and referring patients to the most appropriate form of subsequent care. The goal of the trauma centre staff is to capitalise on the effects of the recent injury to help patients identified as at-risk drinkers increase their motivation to change drinking behaviour. Indeed, a study involving alcohol dependent subjects admitted for a non alcohol-related medical condition indicated that hospital admission was associated with a general progression in the readiness to change [26]. Similarly, Longabaugh and colleagues reported that injury itself is a powerful motivator to reduce

drinking, and concluded that interventions to decrease drinking in injured patients should focus on increasing the patient’s awareness of the association between drinking, injuries, and other alcohol-related negative consequences [27]. Our own experience at the Lausanne University Hospital ED as well as that of Bernstein at the Boston University Hospital ED [28] recommend that brief alcohol intervention in ED should be delivered by trained health counsellors. While there is some heterogeneity about the content and duration of brief alcohol intervention, a typical 10–15 minutes intervention, which fits well with a busy ED, might include the components summarised in Table 1.

A limited number of studies have assessed the efficacy of brief alcohol intervention in trauma samples; data collected to date suggest that brief intervention were efficient in this setting [29]. In

Table 1

Using an empathic style avoiding any confrontation:
Ask permission to spend a few minutes to talk about alcohol, reassure about confidentiality and assure that any decision about treatment belongs to the patient.
Give feedback about alcohol use, i.e., compare drinking quantity and frequency to the Swiss general population norms.
Ask patient to comment about feedback, about the relationship between alcohol use and injury. Provide comment regarding the association between alcohol use and risk of injury or other medical conditions.
Ask about the "pros" and "cons" of individual's alcohol use.
Ask about importance to change and readiness to change on 0–10 scale.
Ask what objective patient feels ready to complete.
Depending on patient's own objective, affirm patient's self-efficacy to achieve his/her objective, precise timeframe and amount of drinking moderation or cessation or referral to a specialised treatment unit.

1995, Bernstein, in the ED of the Boston University Hospital, tested a program to facilitate access to the substance abuse treatment system, primary care, and preventive services for patients admitted to ED with alcohol or drug related health and social problems. Among the 2,931 patients with identified substance abuse, a total of 2,018 referrals were made to a variety of substance abuse treatment services. While 1,096 patients were enrolled, the majority were lost, leaving only 245 pa-

tients (22%) who maintained a follow-up appointment 60 days later, there was a 56% reduction in alcohol use and a 64% reduction in the frequency of drinking six or more drinks per occasion [28]. The authors attributed the low follow-up rate to the fact that a relevant proportion of patients came from poor socio-economic backgrounds, including 34% homelessness [28].

Focusing on trauma patients, the impact of brief intervention has been evaluated in another ED in Seattle. In a sample of 1,153 trauma patients with either alcohol intoxication (BAC ≥ 0.8 g/l) and/or a history of alcohol abuse or dependence, subjects were randomised to brief intervention and control [1]. Follow-up data at 12 months indicated that among 409 individuals (53% of the randomised patients) a reduction of 21.6 ± 4.2 drinks per week occurred in the brief intervention group, compared to an increase of 2.3 ± 8.3 drinks per week in the control group ($p < .01$). The authors also described lower rates of trauma recurrence in the brief intervention group (5%, or 10 individuals) than those in the control group (10%, or 21 individuals), a difference that was not statistically significant [1]. Further studies should confirm the efficacy of brief alcohol intervention and further evaluate its impact on recurrent trauma and health care costs.

Economic impact of alcohol-related trauma

Alcohol and trauma have a strong influence on health care consumption. In an 8-year study comparing injury rates and use of medical care between 3,729 problem drinkers and a matched cohort, problem drinkers averaged 1.32 injury-related health care events per year compared with 0.76 events for controls (relative risk = 1.74), with the number of injury-related hospital days being 0.32 and 0.08 per year, respectively (relative risk = 4.0). Problem drinkers also experienced significantly higher injury related medical costs [30]. A study of 2,578 trauma patients in Seattle found that patients

either intoxicated (BAC ≥ 1.0 g/l) or with alcohol use disorder (positive MAST score) were 2.5 and 2.2 times more likely (respectively) to be readmitted within the next one or two years than were patients without these markers [5]. In a sample of 118 patients with traffic accidents admitted in the ED of the Lausanne University Hospital, Yersin and colleagues demonstrated that alcohol intoxication was associated with longer hospital stays compared to trauma without alcohol use, 36 vs. 20 days, respectively [2].

Economic impact of treatment

The benefit of brief intervention has been estimated from an economic perspective. Fleming and colleagues randomised 774 at-risk drinkers in primary care into brief intervention or control groups and conducted a cost-benefit analysis over the 12-month period following brief intervention. The estimated cost was \$205 per patient and the cost-benefit ratio was 5.6 (95% CI 0.4, 11.0), with savings in ED visits, hospital use, health care costs related to motor-vehicle accidents and crime [31]. A recent publication indicated that benefit of the

brief intervention persisted after 4 years, with a cost-benefit ratio of 4.3 [32]. In a long-term follow-up study in Scandinavia, Kristenson and colleagues suggested a benefit from brief intervention versus control on absenteeism at work. In a 48-month follow-up of 585 patients randomised into brief intervention or control, a reduction of 80% of the number of days absent from work was noted in the brief intervention group compared to the control group [33].

Take home message

Trauma is frequently associated with hazardous alcohol use and a visit to an ED constitutes an opportunity for "instructive" prevention. Although many of the clinical trials conducted to date have supported the notion that brief intervention can be an effective tool for reducing the drinking levels of people at risk of, or actually experiencing alcohol-related problems, numerous questions remain, including a confirmation of the efficacy of brief alcohol intervention in ED trauma patients, its impact on the prevention of accidents and injuries, and on overall health care costs. Questions also persist regarding the best strategy for the implementation of such programs in the routine process of care. Experiences acquired in Lausanne and Boston suggest that a specially trained health counsellor, independent of the health care team, should conduct the screening

and brief intervention procedure, including alcohol and other life habits influencing health, ie, tobacco, drugs, diet, and therapeutic compliance. The Lausanne University Alcohol Treatment Centre is currently running a randomised controlled trial supported by a grant from the National Swiss Science Foundation evaluating the efficacy of brief alcohol intervention including over 1000 trauma patients attending the ED.

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