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Alcohol Consumption After Severe Burn: A Prospective Study

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Background: *The number of patients with alcohol-related burns admitted to burn units has increased. It has been reported previously that alcohol-related burns are an indicator of alcohol dependence, but there are few studies addressing alcohol use several years after burn injury.* **Objective:** *To investigate alcohol consumption 2–7 years after burn injury and to examine possible contributing factors.* **Methods:** *Consecutive adult patients with burns (n = 67) were included during hospitalization, and an interview was performed at 2–7 (mean = 4.6) years after burn. Data assessed at baseline were injury characteristics, sociodemographic variables, coping, and psychiatric disorders. At follow-up, the Alcohol Use Disorders Identification Test was used to identify at-risk drinking.* **Results:** *Overall, 22% of the burns were alcohol-related; however, this was not associated with at-risk drinking at follow-up. Of the former patients with burns, 17 (25%) were identified as having an at-risk drinking pattern at follow-up. One item in the Coping With Burns Questionnaire used in acute care, "I use alcohol, tobacco or other drugs to be able to handle my problems", was the only factor found to predict an at-risk drinking pattern several years after injury.* **Conclusion:** *There were more at-risk drinkers in this burn population as compared with in the general population. The results indicate that an avoidant coping pattern, including the use of alcohol to handle problems, can be considered a potentially modifiable factor.*
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INTRODUCTION

A severe burn is a life-threatening state that challenges all of the main integrating systems in the body, and it is associated with long and painful in-hospital treatment. Recovery after burn appears to be less dependent on the severity of the burn and more dependent on preinjury and postinjury factors, such as pre-existing co-morbidities, coping skills, and psychologic health.[1,2]

A high frequency of alcohol-related burns is well documented,[3–5] and the rate appears to be rising as alcohol consumption increases globally.[5] Furthermore, studies have shown that individuals intoxicated with alcohol at the time of injury have a higher risk of infection and mortality compared with burn victims who are not intoxicated.[3,6–9] For example, it was reported in a meta-analysis that approximately 40% of those who die of burn injury are intoxicated at the time of injury.[3]

It is common for those with alcohol-related burns to have an underlying alcohol use disorder. For instance, Holmes et al. found that 54% of those with an alcohol-related burn had underlying alcohol dependence.[5] Palmu et al. reported a 35.5% lifetime prevalence of alcohol dependence and an 11.2% prevalence of alcohol abuse in patients with burns, and during acute care, the rates were

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28% and 3.7%, respectively.[10] However, these rates had decreased to 14.1% and 0%, respectively, 6 months after injury.[10] In a sample partly overlapping the sample in the present study, Dyster-Aas et al. reported that 32% of the patients with burns had a lifetime alcohol use disorder.[11] Moreover, Smitten et al. reported that 8% of the patients with burns had a postburn, new-onset alcohol use disorder that developed mainly in the period immediately following the burn.[12] In adolescents who have been burned during childhood, alcohol dependence has been identified in 8% several years thereafter,[13] and Meyer et al. reported a lifetime prevalence rate of 8%.[14] In addition, it has been reported that more than 33% were at-risk drinkers at the time of injury, even though alcohol dependence was identified in only 11.6% of patients with burns.[15] Nevertheless, being an at-risk drinker is a risk factor for later alcohol dependence.[16]

There are no studies to date describing postinjury alcohol consumption among adult patients with burns several years after injury. Thus, the aim of the present study was to investigate alcohol consumption 2–7 years after burn injury and to explore possible contributing factors.

METHODS

Participants and Procedures

This is part of a prospective longitudinal study concerning physical and psychologic outcomes after burn trauma conducted at the Uppsala Burn Center, 1 of 2 national burn centers in Sweden. Consecutive patients with burns admitted to the Burn Center between March 2000 and March 2007 were included if they (1) were 18 years or older, (2) were Swedish speaking, (3) had no documented learning disabilities or dementia, and (4) had $\geq 5\%$ of total body surface area (TBSA) burned or had a length of stay at the Burn Center of more than a day.

Of the 112 patients who fulfilled the inclusion criteria, 6 were omitted because of administrative reasons and 17 patients declined participation, leaving 89 participants (79%). Assessments were conducted during the initial treatment for the burn. In addition, patients were contacted at 2–7 years after the burn and were visited for follow-up interviews. At the time of follow-up, 4 patients had died, 2 had emigrated, and 1 had stopped participating earlier during data collection. Of the remaining 82 patients, 5 were impossible to locate, 9 declined participation, and 1 was excluded for other reasons, leaving 67 of the 112 previous patients (60%) for the final assessment. In comparison with those 67 former patients, the 22 dropouts from the follow-up were less likely to have been working or studying at the time of the burn ($\chi^2 = 3.9$, $p = 0.04$). The study was performed according to the Helsinki Declaration and was approved by the Uppsala University Ethics Committee.

Measurements and Assessments

Sociodemographic and Burn-Related Variables

Data extracted from the medical records included sex, age at injury, cause of injury, injury severity, whether the burn was alcohol-related, living alone or co-habiting, years of education, and work status at injury. Data registered at follow-up were time since injury, length of sick leave because of burn injury, and work status.

Alcohol Use at Follow-up

The Alcohol Use Disorders Identification Test (AUDIT) was used to assess hazardous and harmful use of alcohol 2–7 years after burn.[17] The AUDIT was originally designed as a screening tool for primary care settings but has also been used in trauma interventions[18] and for screening in burn care.[15] The 10-item self-report questionnaire covers the domains of alcohol consumption, drinking behavior, and alcohol-related problems. Each question is scored on a scale from 0–4 points, for a maximum total score of 40. A higher score is an indicator of hazardous or harmful use or dependence. Hazardous use is a term for a drinking pattern that increases the risk of harmful consequences for the user. A common categorization based on the World Health Organization guidelines is used in this study, with recommendations for a lower cutoff score for women.[16] Thus, hazardous or risky use is defined as 6 points or more for women and 8 points or more for men, and the term at-risk drinking is used in this study to identify participants with these scores.

Psychiatric Disorders

The Structured Clinical Interviews for Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Axis I Disorders (SCID-I)[19] and Axis II Disorders (SCID-II) were used to assess for psychiatric disorders.[20]