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Health-related quality of life 6 months after burns among hospitalized patients: Predictive importance of mental disorders and burn severity

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ABSTRACT

Rationale: Major burns are likely to have a strong impact on health-related quality of life (HRQoL). We investigated the level of and predictors for quality of life at 6 months after acute burn.

Methods: Consecutive acute adult burn patients ($n = 107$) admitted to the Helsinki Burn Centre were examined with a structured diagnostic interview (SCID) at baseline, and 92 patients (86%) were re-examined at 6 months after injury. During follow-up 55% (51/92) suffered from at least one mental disorder. The mean %TBSA was 9. TBSA of men did not differ from that of women. Three validated instruments (RAND-36, EQ-5, 15D) were used to evaluate the quality of life at 6 months.

Results: All the measures (RAND-36, EQ-5, 15D) consistently indicated mostly normal HRQoL at 6 months after burn. In the multivariate linear regression model, %TBSA predicted HRQoL in one dimension (role limitations caused by physical health problems, $p = 0.039$) of RAND-36. In contrast, mental disorders overall and particularly major depressive disorder (MDD) during follow-up (p-values of 0.001–0.002) predicted poor HRQoL in all dimensions of RAND-36. HRQoL of women was worse than that of men.

Conclusion: Self-perceived HRQoL among acute burn patients at 6 months after injury seems to be mostly as good as in general population studies in Finland. The high standard of acute treatment and the inclusion of small burns (%TBSA < 5) in the cohort may partly explain the weak effect of burn itself on HRQoL. Mental disorders strongly predicted HRQoL at 6 months.

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1. Introduction

Health-related quality of life (HRQoL) is an increasingly important outcome measure in healthcare, as it represents patient-relevant aspects of health problems and allows comparison between different illnesses and treatments. In earlier studies, generic HRQoL has been lower in patients with severe burns than in the normal population over a 12-month period [1]. However, even survivors of massive burn can reach a satisfying quality of life in most domains [2].

In a previous prospective cohort study of acute hospitalized burn patients, we found 55% to suffer from at least one mental disorder during a 6-month follow-up [3]. This 6-month prevalence of mental disorders increased as burn severity (%TBSA) increased. The relationship was statistically significant with regard to Axis I disorders overall, and anxiety disorders and disorders due to general medical condition (GMC) specifically. Studies excluding minor burns did not show this kind of relationship, probably because the variation in severity of burns was limited [4,5].

Burn severity and mental disorders are related in a complex way; suicidal or psychotic patients can be predisposed to burns, and severe burns can predispose to mental disorders. However, both burn severity and mental disorders can influence on prognosis of recovery and rehabilitation after burn, influencing the final HRQoL achieved. The question of how mental disorders and burn severity influence HRQoL is of great significance for burn rehabilitation services; however, few studies with proper methods, specifically in assessment of mental disorders, exist on this subject.

Burn Specific Health Scale (BSHS) has a long history and has in recent years been the most frequently used specific measure for overall outcome and recovery after burns [6–8]. The abbreviated version of BSHS has been used also in Finland in evaluation of the recovery of burn survivors [9]. However, although illness-specific quality of life scales may capture specific problems related to each illness, their use renders a comparison between illnesses difficult.

In earlier studies [10–12], Medical Outcome Study 36-item Short Form (SF-36), equivalent to RAND-36 and used especially in the United States, and, EQ-5D (Euro-QoL), used mostly in Europe, have served as generic scales and have appeared to be sensitive in measuring HRQoL among burn populations. The former provides a psychometric approach leading to several domains, and the latter a one-dimensional scale from 0 to 1 for quantification of health loss.

The aim of this study was to estimate the HRQoL at 6 months after burn and to investigate which factors predicted HRQoL at this point. In particular, we examined whether the severity of burn or the presence of a psychiatric disorder (pre-burn or post-burn) determines HRQoL after the burn.

2. Method

2.1. Participants

The study was conducted between May 5, 2006 and October 31, 2007 in Helsinki Burn Centre. It is part of Helsinki University Central Hospital which has catchment area of approximately 1.4 million inhabitants. In addition to this responsibility, all of the most severe burns in Finland (population of 5.4 million) are treated in Helsinki Burn Centre. After all consecutive acute adult burn patients (at least 18 years old and Finnish-speaking) were admitted and exclusion criteria considered, the final sample comprised of 107 patients. The methodology was described in more detail repeatedly elsewhere [3,13,14]. Ethics Committee of Helsinki Central University Hospital approved by the study protocol.

2.2. Procedure

All of the eligible, consecutive acute burn patients were interviewed by an experienced psychiatrist (R.P.). Clinical Version of the Structured Clinical Interview for DSM-IV-TR (SCID-CV) [15] was used to diagnose mental disorders in three different timeframes. SCID-II [16] was used to diagnose personality disorders. The subjects filled also in structured questionnaires covering psychological symptoms. Total body surface area (%TBSA), was used as the measure of severity of burns [3,13,14].

During their lifetime preceding the burn, almost two-thirds (60%), and during the final month prior to burn, 40% of subjects had at least one mental disorder [13]. The lifetime prevalence rates of some diagnostic subgroups substance-related (47%), psychotic (10%) and personality disorders (23%) were markedly higher than in general population studies. More specific, every fourth had some depressive and 15% MDD, 8% PTSD in their lifetime pre-burn [13].

The majority of subjects (86% of the whole study cohort) participated in the follow-up examination. They were interviewed for a second time (SCID-CV) by the same psychiatrist 6 months after injury [3,14]. The subjects ($n = 15$) who dropped out of the cohort are described in detail in our previous papers [3,14]. Most of the participants of the follow-up were middle-aged men with low level of education and many had a history of psychiatric illness, psychiatric hospitalization, or suicide attempt before the injury (Table 1). The mean %TBSA was 9.7 (Table 1). Two-thirds of them had hand burns.

At the follow-up interview, SCID-CV was repeated to diagnose mental disorders (a) during the 6 months after the burn and (b) during the last month of follow-up. During the 6 months after burn more than half (55%) of the subjects had some Axis I disorder (Table 2). Substance-related disorders were most common (27%) subgroup. Of those with no pre-burn mental disorder, 37% ($n = 14$) had at least one Axis I disorder during follow-up. Comorbidity was quite common while more than one-third (37%) of the patients had also another Axis I disorder during the follow-up. These descriptive findings have been previously published [3], but are presented here because of their important role as predictors for quality of life.

2.3. Health-related quality of life

At baseline and at 6 months, the subjects answered the same single question concerning global quality of life during the preceding month on a four-point Likert scale (poor, moderate, good, or excellent). At 6 months, the patients filled in three