

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

journal homepage: [www.elsevier.com/locate/burns](http://www.elsevier.com/locate/burns)

CrossMark

# In view of standardization: Comparison and analysis of initial management of severely burned patients in Germany, Austria and Switzerland

Matthias Münzberg<sup>a,1</sup>, Benjamin Ziegler<sup>b,1</sup>, Sebastian Fischer<sup>b</sup>,  
Christoph Georg Wöfl<sup>a</sup>, Paul Alfred Grützner<sup>a</sup>, Thomas Kremer<sup>b</sup>,  
Ulrich Kneser<sup>b</sup>, Christoph Hirche<sup>b,\*</sup>

<sup>a</sup>Department for Trauma- and Orthopaedic Surgery, BG Trauma Center Ludwigshafen/Rhine, Ludwig-Guttman-Str. 13, D-67071 Ludwigshafen, Germany

<sup>b</sup>Department of Hand, Plastic and Reconstructive Surgery—Burn Center, BG Trauma Center Ludwigshafen/Rhine, Department of Hand and Plastic Surgery, University Heidelberg, Ludwig-Guttman-Str. 13, D-67071 Ludwigshafen, Germany

## ARTICLE INFO

### Article history:

Accepted 22 August 2014

### Keywords:

Burn

Trauma management

Structured patient care

Standard operating procedures

## ABSTRACT

**Introduction:** Initial treatment of severely injured patients in German speaking trauma centers follows precise sequences. Several guidelines and training courses ensure a constant quality in providing evidence-based treatment for these patients.

Similar standards, algorithms and guidelines for the treatment of severely burned patients are lacking. This raises the question about the current standard of care for burn victims in German speaking burn centers. In order to achieve standardization, as a first step this study surveys principles of burn room organization and management in these burn centers.

**Material and methods:** A questionnaire including 40 questions regarding burn room organization, personnel structure and qualification, infrastructural conditions and quality management was developed and sent to 21 level one burn centers in Germany, Austria and Switzerland.

**Results:** The rate of returned questionnaires was 81%. The analysis revealed varying personnel and infrastructural conditions in participating burn centers. Indications for admission to the burn room and admission procedures itself are different throughout surveyed hospitals. Individual standard operating procedure (SOP) for burn trauma admissions was available in most burn centers and nearly all participants register their burn trauma cases using an in-house burn register.

**Conclusion:** The survey suggests a lack of standardization in personnel structure, infrastructure and treatment approach for the initial clinical care of severely burned patients in burn centers across the German speaking countries. Further evaluation of existing protocols and international standards in burn care is inevitable to develop standardized guidelines for burn care and to improve quality of care.

© 2014 Elsevier Ltd and ISBI. All rights reserved.

\* Corresponding author at: Research group “Trauma meets Burns”, Department of Hand, Plastic and Reconstructive Surgery, Burn Center, BG-Trauma Center Ludwigshafen/Rhine, University of Heidelberg, Department of Hand and Plastic Surgery, Ludwig-Guttman-Str. 13, D-67071 Ludwigshafen, Germany. Tel.: +49 621 6810 2944.

E-mail address: [christoph.hirche@bgu-ludwigshafen.de](mailto:christoph.hirche@bgu-ludwigshafen.de) (C. Hirche).

<sup>1</sup> Equally contributing authors.

<http://dx.doi.org/10.1016/j.burns.2014.08.021>

0305-4179/© 2014 Elsevier Ltd and ISBI. All rights reserved.

---

## 1. Introduction

In emergency departments clinical management of severely injured patients who are suffering from life-threatening injuries is still a challenging task today. Diagnostic procedures and therapeutic interventions are critical in terms of time. To face these needs, several guidelines and standardized priority-orientated algorithms in the trauma bay are available. Guidelines regarding the preclinical treatment as well as the trauma bay phase are published as “Whitebook Medical Care of the Severely Injured” [1] and as “Guideline on Treatment of Patients with Severe and Multiple Injuries” [2]. These guidelines provide recommendations with the highest level of evidence available.

Several evidence-based educational tools are accessible for health care providers. The worldwide most prevalent training course for the treatment of severely injured patients during the trauma bay phase is Advanced Trauma Life Support® (ATLS®) [3]. Special attention is paid on a structured survey of the patient following the ABCDE scheme. All major information on patient status and injuries are repeated loud on handover of the patient by the admitting emergency physician, during the trauma bay phase and as well on the handover to the ICU respectively the operating team. A loss of information can be minimized and a continuous focus on life-threatening problems is maintained after implementation of this approach. The training is well established throughout the world by now, and mandatory requirement for trauma care in trauma centers in some European countries [4]. An additional training course for health care practitioners is Prehospital Trauma Life Support® (PHTLS®). This training transfers the principles of ATLS® to the preclinical care of severely injured patients offering a quick and structured survey of the patient, priority-orientated treatment and prompt transport to an adequate trauma hospital [5].

Although the case load is low, the complex pathophysiology of burned patients and the consecutive burn disease also demand a high degree of expertise in primary hospital care of these patients. Due to the specific needs of severely burned patients in terms of fluid resuscitation, airway management and prevention of hypothermia [6] clinical management of these patients has to focus further, aspects in contrast to the treatment of severely injured patients. Nevertheless other primary life-threatening systemic conditions have to be, ruled out in burn trauma patients as well.

Because of these reasons it is questionable to which extend the ATLS® approach is also suitable for severely burned patients or whether burn-specific programs like Advanced Burn Life Support (ABLS®) are additionally necessary.

A comparable standardized approach for the management of severely burned patients is lacking in the German speaking countries showing the need for further research to evaluate the current status in initial clinical care of burned patients. This may allow development of standardized treatment algorithms for severe burn trauma during the preclinical phase and in the burn room, a trauma room specific for treatment of severely burned patients which is equipped with a powerful room temperature regulation unit and conditions to perform minor surgical procedures, e.g. escharotomy. In

view of standardization, an evaluation of the current status in burn treatment was carried out in this study to survey principles of burn room organization and management in burn trauma centers in Germany, Austria and Switzerland.

---

## 2. Material and methods

A questionnaire was developed and sent to all 21 level one burn trauma centers in Germany, Austria and Switzerland. The questionnaire surveyed structural data of the burn center including personnel structure, qualification level and organizational measures of the burn unit. Additional statistical data were collected. Criteria for admission to the burn room, its leading structure and available staff and in particular the presence and supervision of an attending physician were evaluated. Furthermore, the performance of a team-time-out, the option of ethical rounds, designation and identification of the trauma room team leader and the treatment of patients with concomitant injuries were focused. In addition, the use and reference of standard operating procedures (SOP) were evaluated. Last, the questionnaire surveyed if the center refers to an internal register for documentation and analysis of care of severely burned patients

The questionnaire contained 33 multiple-choice questions and seven open questions. Partially multiple answers were allowed. The referred topics are listed in detail in Table 1.

The included burn trauma centers were initially contacted by mail with the option to mail back the completed form. Afterwards, the centers were contacted by phone to discuss and reveal remaining uncertainties. In addition, the form was available for web-based download and to be send back via email.

---

## 3. Results

The return rate of questionnaires was 81% (17 out of 21). Fifteen centers from Germany, one from Austria and one from Switzerland successfully participated in the survey. All returned questionnaires were answered completely and could be included in the study. The reasons for declining participation of the survey were a missing response to the inquiry in two cases and refusal of providing the asked information for reasons of data protection by two burn centers.

Criteria for admission of patients to the burn room varied in the evaluated centers. Five centers (30%) admit all patients with thermal injuries to the burn room while other centers admit only patients with an average minimal affected total body surface area (TBSA) of 10% (range 5–15%). Additional criteria were the presence of concomitant injuries ( $n = 12$ ; 71%), medical sedation applied preclinically ( $n = 11$ ; 65%), assumption of an inhalation trauma ( $n = 12$ ; 71%), other known severe illnesses ( $n = 9$ ; 53%) and cardiopulmonary instability ( $n = 12$ ; 71%). Reasons for admission to the burn room are displayed in Fig. 1.

Patients with concomitant injuries were admitted to the regular trauma room in 14 (82%) and to the burn room in three (18%) centers. Admission requests were accepted by the plastic surgery department in seven (41%) burn centers, by the

Download English Version:

<https://daneshyari.com/en/article/3104211>

Download Persian Version:

<https://daneshyari.com/article/3104211>

[Daneshyari.com](https://daneshyari.com)