CORRESPONDENCE

Severe Burn Injuries — Acute and Long-Term Treatment

by Dr. med. Timo A. Spanholtz, Dr. med. Panagiotis Theodorou, Dr. med. Peymaneh Amini, Prof. Dr. med. Dr. habil. Gerald Spilker in volume 38/2009

Scheme Not Possible

It is unfortunate that an article was published that seeks to apply the same scheme to the treatment of a pathology in adults and children. In view of the well known particularities of infants and toddlers, this is not actually possible. Simultaneously, the recommendation was to treat children younger than 10 years who present with a burn injury in a burn care center. This is not consistent with either the cited reported guideline recommendations or the real treatment options. Referring every child with typical degree II inhalation scald of 10% of body surface to a burn care center is neither necessary nor feasible. I also doubt whether even highly specialized plastic surgeons can detect the degree of a burn injury during initial treatment, especially in the critical range between degrees IIa and IIb. In my experience, a definite classification is possible only after several changes of dressing. Assessment on location, combined with rescue maneuvers, cooling treatment, possible poor visibility owing to contamination or remnants of clothing cannot be compared with the facilities available in an emergency ward.

As with the recommendation about children mentioned above, the cited reference by Cone has been interpreted in a highly idiosyncratic manner. Cone reports that the extent of the burn is overestimated in 75% of cases, but no mention is made of the degree.

In summary, review articles should either point out very clearly the differences between children and adults or restrict themselves to one group only.

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Treatment After Discharge

Our thanks go to the authors for reviewing burn injuries as these are often neglected or even ignored. The treatment objective especially in people with severe burns is not only the optimal reconstruction of the destroyed integrity of the skin, but also of form, function, and

esthetic appearance. Because of self reinforcing scar formation, the treatment is by no means concluded when a patient is discharged from the inpatient setting. Special compression treatment and scar treatment are required as explained. Prescriptions for services often trigger prolonged discussions with the insurers and require their agreement. Scar developments such as hypertrophy, unstable, or functionally impairing scars sometimes occur only after a lengthy latency period. It is essential to recognize these in good time and to initiate the necessary treatment measures. This requires a high degree of specialist expertise that general practitioners—who, as the article mentions, are integral to the interdisciplinary treatment approach—are usually unfamiliar with; something that many affected patients have reported. Such patients should therefore present at regular intervals to burn care clinics in specialized units, so that aftercare can be delivered in a collaborative manner..

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Prosthetic Care

The authors of this article—which is of utmost relevance for general as well as specialist medical practice—rightly mention the indications of surgery and plastic surgery. However, since there are limitations to what plastic surgery can achieve, and since reconstruction after the total destruction or loss of one or both auricles, nose, and eye sockets is possible by means of prosthetic surgical treatment (1–3), this approach should be borne in mind for initial treatment as well as for long term treatment. Plastic reconstruction of an auricle, for example, can be difficult if scars from the burn injury are present, as is the case for the burn injuries patients on the cover and Figure 4 of the publication. Only a bone-anchored prosthesis may spare the patient from developing severe psychological stress. An indication for epithetic treatment always exists where plastic-reconstructive measures are not promising or have not obtained a successful result, or where the optimal esthetic result is the prime consideration.

In patients with severe burns and hearing loss, available treatment options include tympanoplasty, a hearing aid or bone-anchored hearing aid, or a middle ear implant.

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Benefits of Cooling Are Not Known

The benefits of cold water therapy in stopping a burn injury from penetrating deeper into the tissues has been shown in some animal models, but only if the proportion of body surface that was burnt was 1–5% and the treatment was initiated immediately. Waiting for only a few minutes after the trauma has been sustained immediately negates any beneficial effect. If the treatment is administered for too long or the temperature is too cold then the tissue necrosis will be more extensive. The authors recommend cooling the burnt skin surface for (20 to) 30 minutes; a time period that we think is very clearly too long. In our view, cold water therapy is a lay or first-aid measure. The first step to be taken by the ambulance services or the emergency physician should be to immediately cease the cooling or heat treatment. The German Society for Burn Treatment (www.verbrennungsmedizin.de) recommends cooling therapy with tap water only for small burns; we think it is contraindicated in patients with large surface burns. The recommendations from the Deutscher Feuerwehrverband (the German Fire Services Association) express similar sentiments (2).

The statement that no guidelines are available for the nutrition of burned patients is incorrect. The European Society for Parenteral and Enteral Nutrition's 2006 guidelines include such aspects and recommendations (3).

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In Reply:

We wholeheartedly agree with Professor Menke's recommendation to follow up such patients in a specialized burn care clinic. This allows reacting promptly to complications and initiating appropriate measures in a highly targeted manner. The article aimed to raise awareness of this option among doctors involved in treating patients with burn injuries and thus improve the care for such patients.

Epithetic treatment, as mentioned by Professor Federspil, is an important component of esthetic late treatment of patients with burn injuries. However, at the time such treatment is being considered, scars should be fully formed or fully treated by using all available options, so as to design the prosthesis optimally.

We thank Dr Trupkovich for his correspondence, in which he focuses on cold water treatment. Even if animal models can be translated into clinical practice to a limited degree only, they provide helpful and correct pointers. Early administration of heat in persons with severe burns injuries makes sense—as mentioned in the article—to avoid hypothermia, but can often only be given after analgesia and/or sedation or intubation since patients may experience heat as extremely painful. The preparation of (several) venous accesses, if required during transport, is absolutely essential in our opinion and should be done by default. The cited article regarding nutrition provides helpful—albeit rather general—guidelines for patients in intensive care units. Our article mentions the lack of detailed, burns specific data for nutritional therapy in several places.

We dealt mainly with burns in adult patients and intentionally avoided focusing on the complex subgroup of children with burn injuries. However, in our opinion, all severely burnt children should be treated in specialist pediatric burns hospitals or burn care units. To admit a child with a burn injury to a normal pediatric ward or pediatric surgical ward will result in a suboptimal scenario for both patient and doctor.

The guidelines for admission to a hospital for burn injuries are clearly defined by the societies. Smaller burn injuries, however, may still be treated by colleagues of numerous specialties. Years of experience in treating patients with severe burns have made us aware of often the degree and extent of burn injuries are misinterpreted. In general, the following rule applies: assessing a burn is best done by colleagues who have frequent exposure to this task and therefore have accumulated experience in the area. In Germany, this includes primarily the large burn care centers, which are run by plastic surgeons (www.verbrennungsmedizin.de).

On behalf of my co-authors, I thank our readers for their constructive comments, and I hope that this article may serve to improve our understanding of this highly specialized pathology (“burn disease”).

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