PRACTICE GUIDELINES FOR BURN CARE

Committee on Clinical Practice Guidelines (CPGs)
International Society for Burn Injuries (ISBI)

MISSION AND VISION STATEMENTS

The mission of the ISBI Practice Guidelines Committee is to create a set of CPGs **to improve the care** of burn patients and **reduce costs** by outlining **recommendations** for management of specific medical problems encountered in burn care, recommendations which are supported by objective and comprehensive **reviews of the literature** as well as by **expert opinion.**

Our vision is that these CPGs for burn care in low resource settings will recognize the current best and **most cost-effective methods of treatment**.

OBJECTIVES OF CPGs

- Standardization of care
- Quality improvement
- Reduction of risk
- Optimization of cost-benefit ratios

CPGs focus on **important clinical options** and **critical decision** points.

These lead to courses of action which **influence outcomes**.

HISTORY OF CPGs FOR BURN CARE

Publication in 2001 *Journal of Burn Care*

Subsequent topics updated by American Burn Association

New project initiated by ISBI President Rajeev Ahuja in 2014

ISBI CPGs intended for **health care professionals** providing acute care and rehabilitation for burn patients.

Although ISBI CPGs are pertinent to **resource-limited settings**, they are applicable in **high-income countries** as well.

METHODS

Steering Subcommittee

- reviews of literature
- research sources of expert opinion
- editorial functions
- ensure uniformity of quality

Advisory Subcommittee

responsible for content review for value, feasibility, and preferences

STEERING SUBCOMMITTEE MEMBERSHIP

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PROCESS FOR EVIDENCE RETRIEVAL

MEDLINE (PUBMED) search

English language

Human studies only

Published in last 10 years

Article types included Clinical Trial, Comparative Study, Controlled Clinical Trial, Multicenter Study, Observational Study, Randomized Controlled Trial, Review, Systematic Reviews, and Meta-Analysis

STRUCTURE OF RECOMMENDATIONS

Recommendation

Supporting evidence
Balance of benefits and harms
Values and preferences
Costs

- Direct medical costs
- Analysis of resource utilization
- Feasibility

FIRST SET OF PUBLISHED TOPICS

Antibiotic stewardship

Burn shock: resuscitation and monitoring

Escharotomy and fasciotomy

Ethical issues, including end-of-life care

Initial assessment and stabilization

Infection prevention

Nutrition

Organization and delivery of burn care

Positioning

Pruritus management

Quality assessment and improvement programs

Smoke inhalation injury: diagnosis and treatment

Splinting

Scar management, non-surgical

Surgical management of wounds

Wound care, including grafts and donors

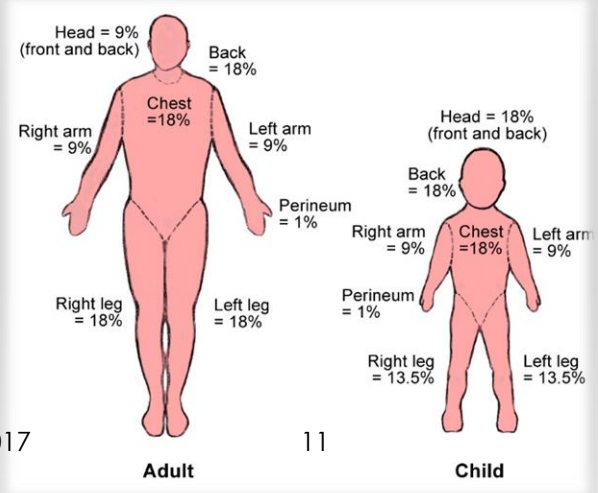
INITIAL ASSESSMENT AND STABILIZATION

Thermally injured patients should be evaluated using a systematic approach that seeks to ***identify the greatest threat(s) to life first.***

Evaluation of burn injury should estimate ***total body surface area*** *(TBSA) utilizing a standardized method and delineate characteristics that require immediate attention from a designated burn center.*

Appropriate resuscitation should be ***initiated promptly*** *and tailored based on patient parameters to avoid over- and under-resuscitation.*

Tetanus *immunization status should be evaluated and addressed if indicated.*



BURN SHOCK RESUSCITATION

Adult patients with burns greater than **15% t**otal burn surface area (TBSA), and pediatric patients with burns greater than **10%** TBSA, should be formally resuscitated with salt-containing fluids; requirements should be based on body weight and percentage burn.

When IV fluid administration is practical, between **2 to 4 mL/kg** body weight/burn surface area (% total body surface area, TBSA) should be administered within the first 24 hours after injury, with **alertness to over-resuscitation.**

If only **oral fluid** administration is practical, drinking liquids (typical of the local diet) equivalent to 15% of the body weight each 24 hours is recommended for two days. Five-gram tablets of **table salt** (or the equivalent) must be ingested for **each liter of oral fluids.**

When practical, **monitoring** the adequacy of resuscitation can be conducted by titrating salt-containing fluids. For adults, titrate provided fluids to average patients' urine outputs of **0.3 to 0.5 mL/kg/hour**; in children titrate to **1 mL/kg/hour**. For the **first three hours** of resuscitation, values may still approach anuria, irrespective of the rate of fluid administration.

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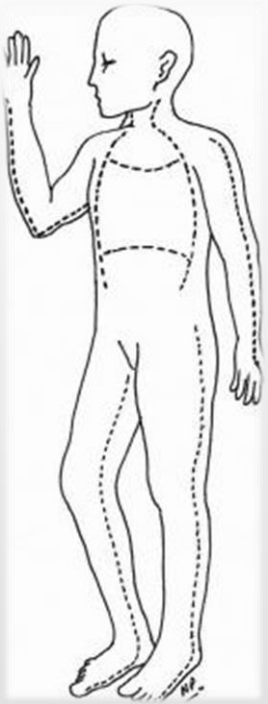
ESCHAROTOMY AND FASCIOTOMY



*Escharotomy should be performed when **circumferential or near circumferential eschar** of the extremities compromises the underlying tissues or the circulation distal to it. Escharotomy should be performed when eschar on the **trunk or neck** compromises aeration and breathing.*

***Abdominal escharotomy** should be performed when circumferential or near-circumferential eschar is associated with evidence of intra-abdominal hypertension (IAH) or signs of abdominal compartment syndrome (ACS).*

*Escharotomy should be performed in the longitudinal axes of the affected part near the neurovascular bundles. **The extent of the incision** in the eschar should range from normal skin to normal skin. If this is not possible, the range should extend from joint above to joint below. The depth **of the incision is limited by reaching healthy tissue at the floor.***

*Apart from high-voltage electrical injuries, **fasciotomy** is extremely rarely indicated as a primary procedure in burns. Fasciotomy is more commonly performed once the diagnosis of compartment syndrome has been confirmed, particularly in cases of very deep burns, whatever their etiologies.*

PREVENTION OF INFECTIONS AND ANTIBIOTIC STEWARDSHIP

*A **clean hospital environment** should be maintained.*

***Hand hygiene** guidelines should be taught, implemented and monitored.*

***Avoid the use of prophylactic systemic antibiotics** for acute burns.*

*Develop, implement and monitor a **local antibiotic stewardship program.***

SURGICAL MANAGEMENT OF THE BURN WOUND

*An appropriately **trained, prepared and equipped** burn team is essential any center treating serious burn injuries with excisional surgery.*

*An appropriate **surgical plan** should be made for each major burn patient. The plan is determined by: the extent, site and depth of the burn injury; the general physical state of the patient; and the resources of the team treating the patient. Early excision and wound closure is the standard of care where resources permit, but a conservative approach to wound debridement is indicated where logistics and resources are outweighed by patient numbers or available skill sets.*

***Early surgery for small to moderate-sized deep burns** is cost-effective, speeds recovery and might improve outcome.*

***In high-voltage electrical injuries, urgent surgery** may be life-saving, and is necessary to give the highest chance for limb salvage.*

***Tangential excision** is the standard method of burn wound excision**. Fascial excision** may be indicated in very deep burns and high voltage electrical injuries. In a resource-limited setting, **conservative wound management**, sequential removal of separated slough and split skin grafting may be the most realistic approach, provided wound care is sufficient to prevent infectio.*

*Burn wound excision and grafting can be undertaken without undue **blood loss**.*

*After excision or debridement of the burn wound it is essential that the **wound is covered** with autograft skin or an appropriate skin substitute.*

INHALATION INJURY

*Initial assessment of the burn patient should include evaluation of the **airway and breathing.***

*Diagnosis of inhalation injury is suspected by a **history** of exposure within a closed space to products of incomplete combustion, in the **physical examination** by diminished consciousness, and by the presence of soot in the oral cavity and by facial burns. Normal oxygenation or chest radiographs do not exclude the diagnosis. However, signs such as hoarseness, carbonaceous sputum, wheeze and dyspnoea are strongly suggestive of inhalation injury.*

*Treatment for suspected or confirmed carbon monoxide poisoning is administration of **high-flow supplemental oxygen for at least 6 hours.***

*Treatment of upper airway burns secondary to smoke inhalation includes observation and monitoring. Patients with upper airway burns should be nursed in the **semi-upright position** with moderate elevation of the head and trunk. **Endotracheal intubation or tracheostomy** is indicated if airway patency is threatened.*

*In those patients requiring ventilatory support, transpulmonary inflating **pressures and tidal volumes should be adjusted to as low as possible**. **Prophylactic antibiotics and corticosteroids are not indicated** for the treatment of smoke inhalation injury.*

DISSEMINATION

distributed as paper copy in the **journal *Burns***

Posting of document on **ISBI web site with open access**

Perceived as living document with planned reconsideration of new evidence and commitment to **periodic revisions**

Tina Palmieri (Sacramento, CA) is next Chairperson of ISBI Practice Guidelines Committee

TOPICS GUIDELINES PART II

1. Blood Transfusion
2. Metabolic modulation
3. Chemical burns
4. Electrical burns
5. Respiratory care
6. Pain control
7. Subtopics for infection
    a. Bloodstream infection, sepsis
    b. Pneumonia
    c. Urinary tract infection
    d. Wound: Claudia Malic
8. Deep venous thrombosis:
9. Psychiatric disorder
10. Skin sloughing disorders
11. Topical agents in burn care
12. Outpatient burn care
13. First Aid:
14. Monitoring
15. Management of indwelling catheters:
16. Mobility, strength, physical function

TOPICS TO BE DEVELOPED IN FUTURE

Blood transfusions

Chemical burns

Edema prevention during resuscitation, including use of albumin

Electrical injuries

Erythema multiforme major diseases (Stevens - Johnson syndrome, Toxic Epidermal Necrolysis Syndrome)

First aid, emergency medical services, and pre-hospital care

Metabolic modulation, including beta-blockers and oxandralone

Necrotizing skin and soft tissue infections

Nutritional immunomodulation, including glutamine and omega-3 fatty acids

Out-patient, ambulatory and domiciliary care

Pain management

Psychosocial assessment and treatment, peer support, and social reintegration

Venous thrombo-embolic prophylaxis


thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
tapadh leat
спасибо
bedankt
dziękuję
obrigado
merci
go raibh maith agat
mochchakkeram
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grazie
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dankie
dhanyavad
nanni
nandri
Баярлалаа
рахмат
спасибо
faafetai lava
vinaka
спасибі
blagodaram
mersi
barka
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spas
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misaotra
matondo
paldies
grazzi
mahalo
хвала
asante
manana
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VALIDITY—BASED ON ACCURACY AND PRECISION

ACCURACY

The degree to which the recommendation correctly describes the best assessment or intervention.

PRECISION

The extent to which the recommendation describes the assessment or intervention exactly.