

Role of who Guidelines in Burns Management

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Abstract

The World health Organization has given a specific set of protocols for the management of burns. In this case report we are sharing our experience in managing the burns patient involving facial burns with suspected inhalational burns according to the WHO protocol and how it affects the outcome of this particular patient.

Keywords: Burns; WHO protocol; Skin grafting.

Introduction

Thermal injuries are a major source of morbidity and mortality in the developing world. In India, there is increased incidence of household burns while cooking, factory accidents and industrial burns. Increased incidence of stressful lifestyle, depression causes suicidal self-inflicted burns. It has been estimated that 75% of all deaths following thermal injuries are related to Shock and infection. Initial resuscitation and optimal management of burns, particularly to prevent and treat infection is therefore essential to improve outcomes. In

this case report we are assessing the role of WHO protocol in burns management. In many centres, including those in the developing world, hospitals have developed local management protocols. In wide application over multiple centres we need a common protocol.¹

Materials and Methods

This case report was done in JIPMER tertiary care burns center. A 26 year old female who came with the burns due to flames while cooking with kerosene stove had burns to the face, both breasts and patchy burns over abdominal wall, upper arm, and forearm involving TBSA 20% burns assessed by rule of nine and burns was second degree partial thickness burns with suspected inhalational burns. She was received in Emergency services in Jipmer Hospital, Airway assessed intact, breathing was normal with respiratory rate 20/min with suspected inhalational burns, no circumferential burns over extremities, central Intravenous access was made for fluid replacement.

She burns for 15 seconds, burns was put down by her husband. She was given wound care after washing the burns with cool water, gentle

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scrubbing and all loose necrotic tissues removed, cleaned the wound with antiseptic solution and antibiotic cream. Daily wound care given to check for discoloration, infection. Split thickness graft was applied over face and both breast after debridement and tangential excision on day 6. Throughout period of stay and treatment patient was given adequate calorie requirement.

Result

In our study WHO protocol was successful in treatment of burns over the short period of one month follow up.



Fig. 1: Electively patient was intubated to assess the airway injury by bronchoscopy and debridement of facial burns done with Autologous platelet rich plasma injections.



Fig. 2: Auto graft done for the facial burns



Fig. 3: Tangential excision of the scabs over the breast burns.



Fig. 4: Meshed skin grafts over both breasts.



Fig. 5: Post Skin grafting dressing for face and breast regions.

Discussion

Burn injury is a major cause of trauma to the human body, with a prolonged healing period. The mortality rate of burn injury has decreased with new treatment modalities, but secondary infections and prolonged healing periods still affect the mortality rates.²⁻⁵

There are various guidelines for the management of burns including the ABC management, emergency management, treatment and rehabilitation including the ISBI, WHO, Australian guidelines, US guidelines, however, there is no single burns manual for the management of burns patients. Proforma based management helps not to miss any important findings or investigations. It also helps to maintain a checklist which can be a guide through the investigations and management. It also helps to keep track of the various treatment options and advice given at previous visits. However, it has to be used as a guide. It has to be individualised to each patient and the condition at which they present. In government hospitals where there are various residents taking care of one patient, it helps to keep track of the stage of management. The checklist for the surgeon in the peri-operative period will ensure that all the standard protocols are followed, which helps both in effective patient care and streamlining of the support staff for increasing the efficiency. Burn injuries should be managed as a Trauma case requiring primary and secondary survey.⁶⁻¹⁰

Accurate Total Body Surface Area (TBSA) estimation is essential for fluid resuscitation decision making. TBSA does not include epidermal burns. Ensure adequate analgesia to facilitate assessment and patient comfort during percentage of burns assessment. Appropriately consented photographs of the burn are very helpful for assessment and future monitoring.

Specific Features in Children with Burns

- Children have thinner skin than adults, predisposing them to a deeper burn for any given temperature
- Assessment of burn depth is difficult, especially early post injury.
- Young children are at risk of hypothermia, especially during initial cooling of the burn.

Burns are described as epidermal, dermal (superficial/mid/deep) and full thickness.

Time of injury, Mechanism of injury, including circumstance for specific pattern of burn is

important is assessing the burns patient for the customised and specific treatment.

- **Scald:** estimated temperature and nature of the liquid
- **Contact:** estimated temperature and nature of the surface
- Friction
- **Flame/explosion:** product that burned/ exploded, location (enclosed vs. open space); duration of exposure, inhalation injury
- **Electrical:** voltage, type of current (AC or DC), duration of contact
- **Chemical:** type of product
- **Cold:** direct contact with cold surface or exposure (frostbite)
- **Radiant:** sunburn
- First aid
- Time started (was it within 3 hours and maintained)
- Agents used
- If clothes and jewellery were removed
- Decontamination method (for chemical exposure)
- Consider co-existing non-burn injuries
- Consider non-accidental injury or vulnerable child
- Tetanus status.

Like all traumas paediatric burn assessments require a primary and secondary survey with the initial aim of identifying and managing immediate life threats: do not get distracted by the burn injury. Consider early intubation if the following signs are present Signs of airway burn/inhalation injury: stridor, hoarseness, black sputum, respiratory distress, singed nasal hairs or facial swelling. Sign of oropharyngeal burn: soot in mouth, intraoral oedema and erythema.¹⁰⁻¹² Significant neck burn. If suspicion of airway burns or carbon monoxide intoxication apply high flow oxygen. Protect the cervical spine with immobilisation if there is associated trauma. Full thickness and/ or circumferential chest burns may require escharotomy to permit chest expansion. If early shock is present, consider causes other than the burn IV fluid resuscitation as required IV or IO access (preferably 2 points of access). For circumferential burns check peripheral perfusion and need for escharotomy. If altered conscious state, consider airway support. Assess neurovascular status if limb involved. It is difficult to accurately estimate the true depth and extent of the wound in the first 48-72 hours. Do not include area with epidermal burn (erythema only).¹²⁻¹⁴

Conclusion

In our study we have observed that WHO protocol in Burns management has a role in treatment of burns. But since it is a study involving a small group of people and for a short period of time, a definitive conclusion cannot be made. Large randomized control trials are required to confirm the efficacy of this Protocol. It will help not only in the management of patients but also help in more easy access to information in case the patient needs to be referred to another centre. It also helps in maintaining a data bank for future analysis and publications.

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