

Evaluation of Burns Patient in a Tertiary Care Hospital

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ABSTRACT

This article describes the evaluation and management of a child with severe burns in a tertiary care centre with a dedicated tertiary level burns unit. An 8-year-old child with 25% Second degree scald burns was evaluated and treated with ATLS, WHO Guidelines and assessed with Abbreviated Burn Severity Index (ABSI) score. We have used routine blood investigations, microbiological investigations. The child was treated with intravenous fluids and antibiotics. In addition, regenerative treatment modalities were used to improve wound healing.

Keywords: Evaluation; Burns Patient; Investigation; Management.

INTRODUCTION

Severe burns are those that involve >20% in adults or much lesser in children and elderly. It also includes burns associated with trauma, inhalation injury and genital or face involvement irrespective of percentage of area of burns. Advances in resuscitation, operative care and grafting techniques, infection prevention and treatment, and mitigation of hyper metabolism

have all improved survival and recovery. In spite of these advances, questions and controversies regarding best practices are still prevalent, and numerous burn centres and laboratories across the world continue to research various aspects of burn care, from the resuscitative phase to the reconstructive and recovery phase.^{1,2} The advances in burn care have improved burn survival from a near 100% mortality seen with a burn size of 30% in the early 1900s to survival estimates of over 50% in young, healthy patients with burn sizes up to 95%. None the less, the acute phase of resuscitation still generates significant controversy and is not a standardized process. This article describes the evaluation and management of a child with severe burns in a tertiary care centre with a dedicated tertiary level burns unit.

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MATERIALS & METHODS

This study was conducted in the Department of Plastic Surgery at a tertiary care centre in South India after getting the departmental ethical

committee approval. Informed written consent was taken from the patient's parents. An eight-year-old child had an alleged history of accidental spill of hot boiling water over him while he was clothed in cotton clothes, 5 minutes after which cold water was poured on the burnt area. He was taken to a near by government hospital where he was given oral medication and ointment for the burns and referred to our hospital. On arrival at our centre primary survey was done, followed by which he was assessed by the emergency team based on WHO burns protocol and ATLS guidelines for management of burns. He was shifted to the burns unit for further management. No history of any other trauma or complications, such as fever or dizziness, was present. On examination, his pulse rate was 106/ minute, blood pressure was 110/60 mm of Hg, Respiratory Rate was 28/ minute, and the temperature was 98.2 degrees Fahrenheit. Systemic examination was normal.

He was further evaluated based on WHO Burns protocol. Local examination showed second degree of superficial and deep burns involving both lower limbs & right forearm ~25% TBSA based on Lund and Browder chart (Fig. 1 & 2) ABSI (Abbreviated Burn Severity Index) score (Fig. 3) was calculated.



Fig. 1: At time of presentation

Routine investigations such as hemogram, renal function tests and liver function tests were within normal limits. Burn site exudate culture shows growth of *Acinetobacter baumannii*, *Pseudomonas aeruginosa* sensitive to amikacin. The electrolyte values, haematocrit and Serum creatinine were used to adjust intravenous fluid therapy. WBC count and the exudate culture helps in detecting the presence of infection even before clinical symptoms manifested. Serum Total protein and Serum Albumin was used to assess nutrition and modify dietary intake. The burns were treated with various modalities such as Autologous Platelet Rich Plasma, hetero-grafting with collagen scaffold, topical heparin saline irrigation.

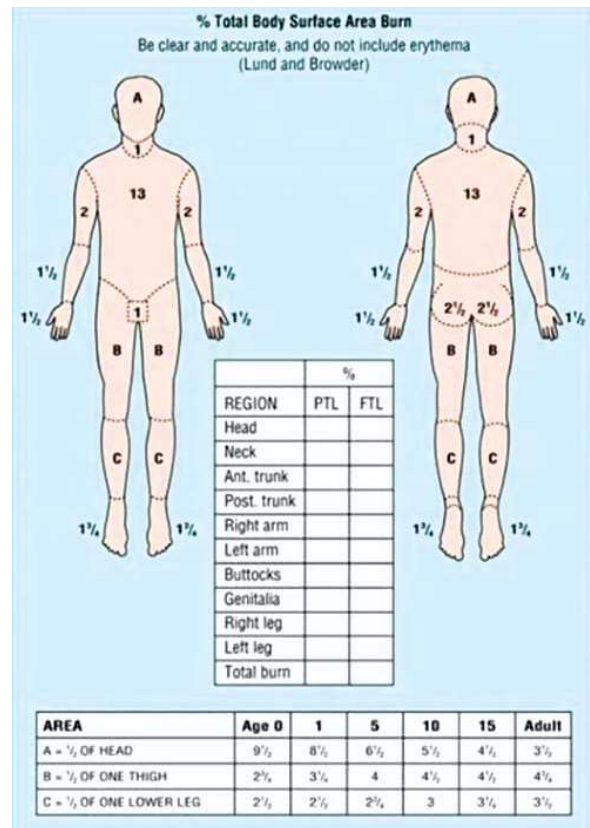


Fig. 2: Lund and Browder chart

RESULTS

Patient was treated successfully in the manner described above and his wounds healed well.

DISCUSSION

Severe burns are to be treated at tertiary care setup for the best outcomes as more resources and also advanced treatment modalities are available. The presence of a specialised burns unit ensures lesser infection rates and better patient care. In our patient the use of Lund and Browder chart ensured higher accuracy of estimation of percentage of total body surface area burnt.³⁻⁵ Wallace Rule of 9 is known to have inaccuracies, especially in assessment of paediatric burns. The correct estimation of percentage of total body surface area burnt helped in appropriate fluid management.^{6,7} In addition to examination, the basic blood investigations help us come to an early diagnosis of electrolyte abnormalities, nutrition deficit, pre renal and renal acute kidney injury all of which are known complications of burns. The exudate culture and sensitivity helps in targeted anti-bacterial treatment.^{8,9,10} All of these help in improving the chance of survival and reducing the

Parameter	Finding	Points
Sex	Female	1
	Male	0
Age (years)	0-20	1
	21-40	2
	41-60	3
	61-80	4
	81-100	5
Inhalation injury	Yes	1
	No	0
Presence of full-thickness burn	Yes	1
	No	0
BSA burn (%)	1-10	1
	11-20	2
	21-30	3
	31-40	4
	41-50	5
	51-60	6
	61-70	7
	71-80	8
	81-90	9
	91-100	10

ABSI score and prediction.		
ABSI	Treat to Life	Probability of survival (%)
2-3	Very low	≥ 99
4-5	Moderate	98
6-7	Moderately severe	80-90
8-9	Serious	50-70
10-11	Severe	20-40
≥ 12	Maximum	≤ 10

Fig. 3: Abbreviated burn injury severity Index score



Fig. 4: Healed burn wounds at discharge

rate of complications.

CONCLUSION

Care of the patient with a large body surface area burn is complex, lengthy, and fraught with potential complications. These complications can be anticipated and minimized in burn centres accustomed to the complexities of major burn care; ultimately yielding improved survival and functional outcomes. The patient in this article, survived to discharge with only a few treatable complications, and is currently home and has resumed daily activities. The burn scars are being managed at home with coconut oil massage, compression garments and physiotherapy. This positive outcome is the norm in burn centers, and an excellent example of why patients with major burn injuries should be cared for in these specialized centres.

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