

Role of Belgium Outcome of Burn Injury Scoring System in Burns

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Abstract

Aim of this case report is to predict the outcome of patients presenting with severe burns is crucial in guiding clinical judgment. Advancements in burn management over the years have significantly decreased burn mortality. There are various scoring systems that are formularized in predicting mortality in burns. In this article we would like to describe our study in using Belgium outcome of burn injury scoring system in predicting mortality in burn patients.

Keywords: Belgium outcome of burn injury scoring system; Burns; Assessment.

INTRODUCTION

Burns injury is one of the important factors contributing to mortality in a developing country like India.¹ Prognostic scoring systems for burn patients help in assessing the severity of the condition and its likely course, there by ultimately allowing stratification of risk numerically and

scientifically which can be statistically analysed. There is no scoring system that accurately predicts mortality due to burns or helps in determining the course, treatment options and evaluating new or innovative interventions uniformly. Revised Baux score,² Abbreviated Burn Scoring Index (ABSI),³ Ryan *et al.*⁴, Belgium Outcome of Burn Injury (BOBI)⁵, Smith *et al.*⁶, McG win *et al.*⁷ are some of the scoring systems available which can be used to predict the mortality in burn patients.

MATERIALS AND METHODS

The study is done in a tertiary care hospital in South India. The subject is a 8 year old male child, with no comorbidities, with alleged history of accidental spill of hot boiled water over body leads to second degree superficial and deep burns involving both lower limb and right forearm contributes to 25% TBSA (Fig. 1). On presentation BOBI score of 1 (age-0, inhalational injury-0, %TBSA - 1) with a predicted survival of 98.5% (Table 1 and 2). He was resuscitated with Intra-venous fluids

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Fig. 1: At the Time of Admission

Table 1. Belgium outcome severity scoring

BOBI	Age: <50= 0	Sum of score
50-64= 1		0 = 0.1% mortality
65-79= 2		1 = 1.5% mortality
>80= 3		2 = 5% mortality
Burn TBSA %: <20 = 0		3 = 10% mortality
20-39 = 1		4 = 20% mortality
40-59 = 2		5 = 30% mortality
60-79 = 3		6 = 50% mortality
80-100 = 4		7 = 75% mortality
Inhalation injury: Yes=3, No=0		8 = 85% mortality
		10 = 99% mortality

Table 2. BOBI score in our patient

BOBI	Age: <50=0	Sum of Score
Burn TBSA % 20-39= 1		1=1.5% mortality
Inhalation injury: No=0		

as per Parkland formula and maintenance fluids according to body weight. Wound management was done by heparin saline irrigation, dermabrasion assisted tangential excision, Low-Level Laser Therapy, Autologous Platelet Rich Plasma, Amniotic membrane application, regenerative scaffold, Cyclic Negative Pressure Wound Therapy (Fig. 2).



Fig. 2: Healed burn wounds

RESULTS

Patient assessment with survival score helps in deciding the plan of management. The treatment plan was planned according to Severity score. No complications noted. Burn wounds healed well without any scarring. Patient discharged successfully.

DISCUSSION

Every year in India, around 10,00,000 people sustain moderate to severe burns.⁸ In developing nations like India, the burn intensive care unit beds are limited owing to the shortage of trained health professionals and the high cost needed for maintenance. In present circumstances of limited bed availability, the need for burn scoring systems and prognostic scores are crucial in triaging burnt patients in accordance with their severity, for guiding the treatment, resource management and for counselling family members. The first prognostic factors found to be effective in predicting the mortality in patients burns was the Total surface area (TBSA) and age, which was first proposed by Weidenfeld, who in 1902 correlated TBSA and age with the mortality. The effectiveness of these two parameters was affirmed later 1949 by Bull and Squire in 1949 and later by Baux in 1963 as Baux score.⁹ Abbreviated Burn Scoring Index (ABSI), Ryan et al, Belgium Outcome of Burn Injury (BOBI), Smith et al, McGwin et al., are some of the scoring systems available which can be used to predict the mortality in burn patients. In the present study, we have applied Belgium Outcome of Burn Injury (BOBI) score to predict mortality. The BOBI score uses values of age, TBSA and presence of inhalational injury. The maximum score is 10 which give a 99% risk of mortality. Incorporation of the well-known significant independent risk factors like Age, Total body surface area involved, and inhalational injury were found to have performed well in predicting burn mortality in various populations. BOBI score

was chosen as it is a simpler scale to calculate bedside with high specificity when compared to other mortality predictor scales.

CONCLUSION

The study shows that BOBI can be used as a mortality predictor of burn patient and help in triaging the patient for the best use of resources available in developing countries like India. But the outcome of the patient cannot be precisely predicted by using the BOBI score alone. The scoring system requires standardisation for population and resource variability

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