

Role of Belgian Outcome in Injury (BOBI) Score in Predicting Mortality in Burns

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Abstract

Severe burn injury and its clinical outcome a major concern in prediction of mortality of patients. Multiple models have been formulated to overcome the concern related to this. Advancements in burn management over the years have significantly decreased burn mortality. But, implementing these advancements have become a huge concern in developing countries. Therefore, for routine evaluation and management to tackle mortality issue this scoring should be implemented at the earliest. 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 Belgian outcome in burn injury scoring system in predicting mortality in burns patients.

Keywords: belgian outcome in burn injury (bobi); score; burn.

INTRODUCTION

Burn injuries are a global public health problem, responsible for an estimated 250,000 deaths per year.^{1,2} As a result, burn injury is one of the world's health issues contributing to the burden of disease and reported at about 180,000 deaths per year. Considering this problem, a management strategy predicting the prognosis of the condition of burn

patients is needed. Studies have indicated a strong link between burn size and mortality. Predicting the mortality in burns patient on presentation to hospital helps in determining the prognosis of the patient and effective handling of resources. Burns mortality depends on types of burn injury, total body surface area involved (TBSA) as well as certain demographic factors like age, gender, comorbidities. On assessing the clinical details and presumable outcome, risk stratification can be done from before, patient mortality can be reduced and infrastructure can be improvised accordingly. There are few scoring systems available for predicting the mortality in burn patients, but all of them are performed to a limited extent. In our study, we are assessing BOBI scoring system to predict mortality in burns

Every year, more than 200,000 deaths occur because of diverse types of burns, and the majority of these deaths occur in low-income and developing.

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METHODS AND MATERIALS

This study was conducted in tertiary care centre in department of plastic surgery, JIPMER after getting the department ethical committee approval. Informed consent was obtained from patients. The subject was a 2 year old child who allegedly falls on hot water while playing at home and incurred burn injury on the right side of anterior chest all, right arm, forearm. On examination she had 2nd degree burns with total of 15 % surface area involvement (Figure 1). On presentation, Belgian outcome in burn injury score was calculated based on 3 parameters (Table 1) - age (0 point), TBSA (0 point), inhalation injury (0 point), with a predicted mortality of zero percent. Patient burn wound bed preparation done with Autologous platelet rich plasma (APRP), collagen scaffold dressing. Patient underwent Wound debridement, tangential

excision followed by split skin grafting and discharged successfully at 4 weeks.



Fig. 1: 20% burns over chest, abdomen and right arm

Table 1: Belgian outcome of burn injury score

	0	1	2	3	4						
Age (years)	<50	50-64	65-79	>80							
TBSA (%)	(20)	20-39	40-59	60-79	>80						
Inhalation injury	No			Yes							
Total Score											
	0	1	2	3	4	5	6	7	8	9	10
Mortality Prediction	0.1	15	5	10	20	30	50	75	85	95	99

BOBI scoring system for predicting mortality in burn patients

RESULTS

BOBI score came to a total of 0 point. On using mortality prediction risk of belgian outcome in burn injury (BOBI) scoring result came to be of 0.1% with very less threat to life. Intra-operative and post-operative periods were uneventful for the patient. The raw area took up the split thickness skin graft well and burn wounds healed well and patient discharged successfully (Figure 2). There were no complications.



Fig. 2: Burn wounds healed well at the time of discharge

DISCUSSION

Several prognostic indices for burn injuries have been created over time. But, none of them could accurately formulate to tackle the major concern faced by burn patients. Even though advancements in burn injury management have significantly reduced the burn mortality, due to limited resources burn mortality is still high in developing countries. Every year in India, around 10,00,000 people sustain moderate to severe burns.^{3,4} 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.⁵ Abbreviated Burn Scoring Index (ABSI), Ryan et al, Belgian Outcome in 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. However, this was highly limited in application as several factors

modify survival probability. 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. In our study, the patient's BOBI score was 0 with a mortality risk of 0.1%. In our case study, Belgian outcome in burn injury (BOBI) was a good indicator of mortality prediction as the patient was vitally and nutritionally stable at the time of discharge. Hence, Belgian outcome in burn injury (BOBI) scoring is a reliable predictor of mortality in the patient with burns evaluated in our case study.

CONCLUSION

The study shows that Belgian outcome in burn injury (BOBI) score can be used as a mortality predictor of burn patient and help in treating the patients for the best use of resources available in developing countries like India. It consists of

three parameters which was easy to calculate and reproducible by any triage system.

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