Original Research Article

Evaluation of various factors among patient to assess mortality reported with burn

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Abstract

Background: Burn injury is a common type of traumatic injury, causing considerable morbidity and mortality. The present study was conducted to evaluate various factors among patient to assess mortality reported with burn. **Material and methods:** This prospective study was carried out to evaluate various factors among patient mortality reported with burn. The 300 patients were selected for the study. Complete details of the patients, Complete history regarding circumstances of the injury ad examination and clinical assessment was. The data was obtained by questionnaire-interview. Statistical analysis of various epidemiological parameters was done with SPSS software. **Results:** In the present study total patients included were 300 in which 80 were males and 220 were females. The mortality rate of females (43.33%) with burns was more than males (43.33%). Mortality was more in the age group 41-50yrs age group (39.66%). Accidents were the main cause of burns and mortality (41%). In 48% patients flames caused burns and mortality. That increase of Total Body Surface Area burn significantly increase the case fatality rate, thus highest case fatality rate seen in 76%-100% TBSA (32.33%). **Conclusion:** The present study concluded that Female sex, accidental, extensive burn, middle age, were the factors associated with increased mortality.

Keywords: mortality, burn injury, hospitalization.

Introduction

Burn injury is a common type of traumatic injury, causing considerable morbidity and mortality. Moreover, burns are also among the most expensive traumatic injuries, because of long hospitalization and rehabilitation, and costly wound and scar treatment[1]. Annually, near 200000 people die due to burn injuries around the world[2]. The World Health Organization estimates that the lifetime incidence of severe burns is 1%[3]. Various factors influence the epidemiology of burns, such as socioeconomic conditions, the national culture, social welfare, lifestyle and so on, among which the socioeconomic condition makes a significant difference. In the world nearly 90% of burn deaths occur in lower middle or low income countries (LMICs), while only 3% of burn deaths happen in high income countries (HIC)[4]. The approach to burn prevention, to be effective in a particular area, should be based on sound knowledge of etiological patterns of burns. Moreover, the geographical variations and socioeconomic differences in burn epidemiology must be taken into account[5]. The present study was conducted to evaluate various factors among patient to assess mortality reported with burn.

Material and methods

This prospective study was carried out in department of general surgery of SKMCH (Sri Krishna Medical College and Hospital), Muzaffarapur, Umanagar, Bihar to evaluate various factors among patient mortality reported with burn. The 300 patients were selected for the study and study was carried out from August 2019 to March 2021. Before the commencement of the informed consent was taken from the patients/guardian of the patient after explaining the study. Complete details of the patients were recorded i.e name, age, sex, residence, occupation, marital status and socio-economic status. Complete history regarding circumstances of the injury i.e place, intent, cause and source of heat were enquired. Examination and Clinical assessment was done in form of general condition, TBSA (Total Body Surface Area) clinical assessment of depth and associated illness. For defining the extent of burn, we used Wallace "Rule of Nine." Patients admitted in burn unit were investigated to guide and monitor treatment. The data was obtained by questionnaire-interview with the patients themselves; while in case of children or patients who were not well enough as a result of severe injury, the data was obtained from relatives who attending the burn unit through a questionnaire interview. Statistical analysis of various epidemiological parameters was done with SPSS software.

Results

In the present study total patients included were 300 in which 80 were males and 220 were females. The mortality rate of females (43.33%) with burns was more than males (43.33%). Mortality was more in the age group 41-50yrs age group (39.66%).accidents were the main cause of burns and mortality (41%). In 48% patients flames caused burns and mortality. That increase of Total Body Surface Area burn significantly increase the case fatality rate, thus highest case fatality rate seen in 76%-100% TBSA (32.33%).

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Table 1: Mortality Pattern in Burn Injuries according to Various Factors

Characteristics		Total	Expired	Mortality rate(%)
Gender	Male	80	32	10.66%
	Female	220	130	43.33%
Age	18-30	80	10	3.33%
	31-40	42	18	6%
	41-50	148	119	39.66%
	>50	30	15	5%
Mode	Accidental	196	123	41%
	Suicidal	65	25	8.33%
	Homicidal	39	14	4.66%
Cause	Flame	213	144	48%
	Scald	43	15	5%
	Electric	26	3	1%
	Chemical	18	0	0%
TBSA	1-25%	134	13	4.33%
	26-50%	58	30	10%
	51-75%	37	22	7.33%
	76%-100%	71	97	32.33%

Discussion

The primary goal of this study was to identify mortality risk and predicting factors in burn injuries. In this study, the risk of death among burn patients was 25.8% and LA50 was 50.8%, which meant that it was estimated that half of the patients with nearly 51 percent TBSA burned would die. Findings showed female gender, age over 60, and larger burn size were the main risk factors of death[6-11].

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Deshpande reported 59% females with burns[12].

In studies from Finland, Spain scalds were more prevalent than flames (up to 63%)[13,14].

The great majority of the burns are accidental, and especially in children, the majority occurred at home (80% to 90%)[15,16].

P Kumar (1991).reported mean and median TBSA were 53.02% and 52.0% respectively[17].

The mean TBSA in patients with severe burn injury was 11% to 24% and has decreased over the past decades, as reported in two studies[18,19].

In addition, although electrical burns are comparatively less common than other types of burns, they are more severe in general and lead to a higher incidence of full-thickness burns and amputation, which brings great harm to patients and the society[20,21].

As reported, patients with 10% TBSA burns or less make up the majority of hospital admissions, in America[22] and South Asia[23].

Conclusion

The present study concluded that Female sex, accidental, extensive burn, middle age, were the factors associated with increased mortality.

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