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LETTER TO EDITOR

The Mortality Profile of Burn Cases in Jammu

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ABSTRACT

The present retrospective study was conducted on 113 autopsy cases brought to the Forensic Department of a tertiary care institute, with the alleged cause of death as burns. Out of a total of 113 cases, 48(42.47%) were males and 65 (57.53%) were females. 85.84% of the cases were in the reproductive and productive (15-45 years) age group. The most common manner of the burn was accidental, followed by suicidal and homicidal causes. Flame burns, electric burns and scalds accounted for 87.60%, 11.50% and 0.90% cases of burns, respectively. In 70 cases, the percentages of burns were between 90-100%. Forty two burn cases with more than 90% burns survived for less than 1 day. 57.5% (65), 35.5 %(40), and 6.2 %(7) victims died of shock, septicaemia and both shock and septicaemia, respectively. Social factors are the main drive, leading to an unacceptably high rate of burn injuries in our societies. Prevention programmes should be directed at behavioural and environmental changes which can be easily adopted into the lifestyle.

Key Words: Septicaemia, burns, suicidal, accidental.

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Introduction

Burn is a major cause of death in all medico-legal cases. Developing countries have a high incidence of burn injuries, creating a formidable public health problem. Moreover, high population density, illiteracy and poverty are the main demographic factors associated with a high risk of burn injury. In India, with a population of over 1 billion, there are 700000 to 800000 burn admissions annually [1]. The high incidence makes burns an endemic health hazard. Social, economic, and cultural factors interact to complicate the management, reporting, and prevention of burns. As there is

no study available, regarding the mortality profile in burn cases from our part of the country, the present study was conducted to study the mortality profile in autopsy cases with the alleged cause of death as burns.

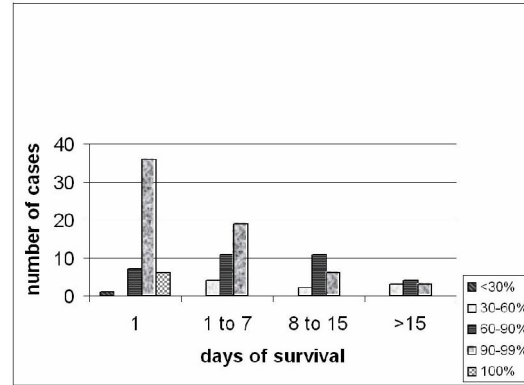
Material and Methods

The present retrospective study was conducted on 113 autopsy cases brought to the Forensic Department of a tertiary care institute, with the alleged cause of death as burns. All the study variables like; sex, age, period of survivability, percentage of burn, type of burn, manner of burn and cause of death, were studied. The data sources were the statements of patients (dying declaration), history from relatives and friends and police investigation reports. All the parameters were expressed in percentage and numbers.

Results

Out of a total of 113 cases, 48(42.47%) were males and 65 (57.53%) were females [Table/Fig 1]. About 85.84% of the patients were in the reproductive and productive (15-45 years) age

group. The most common manner of the burn was accidental (80.53%), followed by suicidal and homicidal causes.[Table/Fig 2]. Flame burns, electric burns and scalds accounted for 87.60%, 11.50% and 0.90% cases of burns, respectively. In 70 cases, the percentage of burns was between 90-100%. Sixty to 90% of burns were found in 29.20% of the cases and in 30-60% burns were found in 7.96% of the cases. Survival beyond 15 days after the burn was observed in 4 patients, with 60-90% of burns and in 3 patients each, with 30-60% and 90-99% of burns [Table/Fig 3]. Survival between 7-15 days was observed in 2, 11 and 6 cases with 30-60%, 60-90% and 90-99% of burns, respectively. Survival between 1-7 days was observed in 4, 11 and 19 cases with 30-60%, 60-90% and 90-99% of burns, respectively. Forty two burn cases with more than 90% burns survived for less than 1 day. When analysis was done in our study to know the cause of death, it was found that 57.5 % (65), 35.5 % (40), and 6.2 % (7) of the victims died of shock, septicaemia and of both shock and septicaemia, respectively. In 0.8% [1] of the victims, the cause of death was unknown.



(Table/Fig 3) Period of survival and percentage of burn in study cases(n=113)

Discussion

In the present study, there is a predominance of female victims than males in burn cases and a majority of them were in the reproductive and productive age groups. The most common manner of burns was accidental, followed by the suicidal and homicidal types. Similarly, in an earlier study from Chandigarh (India), it was observed that most burn deaths occurred in the age group of 21-40 years (67%), with female preponderance (61 %) in all age groups, except in the extreme age groups [2]. In the above study, accidental burns were observed in 80% of subjects, followed by suicidal (16.2 %) and homicidal burn assaults (4.1%).

In the present study, flame burns, electric burns and scalds accounted for 87.60%, 11.50% and 0.90% cases of burn, respectively. Earlier, a study from India also reported flame burn as the major mode of burn injury [2]. In another study from Chennai (India) on 555 burn cases in the age group of 0-18 years, scalds were observed to be the most common type of burn cases among children under 4 years of age, and flame burns predominated in the older age group [3]. In a study from Zimbabwe, burn injuries were caused by flame in 51% of the cases and hot liquids in 47%, and all patients with burns larger than 65% of the total body surface area, died [4].

In the present study, in 103 cases, the percentage of burn was more than 60%. Survival beyond 15 days after the burn was observed in 4 patients with 60-90% of burns

(Table/Fig 1) Age and sex wise distribution of burn cases (n=113)

Age in years	Male	Female	Total	Male:Female
<15	3	2	5	1.5:1
15-29	26	39	65	0.6:1
30-44	16	16	32	1:1
45-59	1	4	5	0.25:1
≥60	2	4	6	0.5:1
Total	48	65	113	0.73:1

(Table/Fig 2) Manner, mode and percentage of burn in burn cases (n=113)

Manner of burn	Male	Female	Total
Accidental	40	51	91(80.53%)
Homicidal	1	4	5(4.42%)
Suicidal	2	4	6(5.30%)
Unknown	5	6	11(9.73%)
Total	48	65	113
Mode of burn			
Flame	35	64	99(87.60%)
Electric	12	1	13(11.50%)
Scald	1	0	1(0.90%)
Total	48	65	113
Percentage of burn			
<30%	1	0	1(0.90%)
30-60%	3	6	9(7.96%)
60-90%	13	20	33(29.20%)
90-99%	26	38	64(56.63%)
100%	5	1	6(5.30%)
Total	48	65	113

and in 3 patients each, with 30-60% and 90-99% of burns. Forty two burn cases with more than 90% burns survived for less than 1 day. When analysis was done on the cases in our study to know the cause of death, it was observed that 57.5%, 35.5% and 6.2% victims died of shock, septicaemia and both shock and septicaemia, respectively. Similarly, an earlier study from India reported a majority of deaths due to burns within one week (77 %) of the incident, with septicaemia as the major cause of death (55 %) (2). In a study from Egypt on 533 cases, the mean length of hospital stay was found to be 15.5 +/- 21.6 days and the mortality rate was found to be 33% [5]. The total surface area burnt, inhalation burns, age, sex, depth and degree of burn wounds were the significant independent predictors of mortality and the significant independent predictors of the length of hospital stay were clothing ignition, total surface area burnt, sex, degree and depth of burn and inhalation burns[5]. In a study from Hong Kong, out of 286 major burn patients treated, 25 patients died from their injuries, yielding a mortality rate of 8.7% [6]. Sex, inhalation injury, total body surface area of burn, and total body surface area of burn were significant predictors of length of hospital stay [6].

In another study on 352 patients in an Asian National Burn Centre, 16 deaths occurred and the final causes of death were septicaemic shock in 10 patients, extensive burns in four patients, adverse drug reaction in one patient and bleeding peptic ulcer in one patient [7]. In another study on 2859 patients, early surgical treatments; nasal, pharyngeal, intestinal and burn surface decolonization and catheter puncture prophylaxis were responsible for reduction in mortality [8].

Conclusion

In the present study, there was female predominance, with a majority of the burn cases between 15-45 years of age. Flames and accidental burns were the most common modes

of burn injuries involved. Social factors are the main drive, leading to an unacceptably high rate of burn injuries in our societies. Most of the burn injuries are caused by domestic accidents and are therefore, preventable [9]. Prevention programmes should be directed at behavioural and environmental changes which can be easily adopted into the lifestyle. Our study also clearly indicated a decreased survival related to an increased percentage of burn and septicaemia shock, as major cause of death. Hence, there is a need to constitute a national body of burn professionals to educate all healthcare staff involved in burn care.

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