



A retrospective study of burns at a tertiary care hospital in Ludhiana, Punjab.

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ABSTRACT

In developing countries with their limited resources, burn injuries still poses major health problem. A retrospective study was planned on patients admitted in the Burn Unit of Christian medical college, Ludhiana from January 2016 to December 2016. The data of 116 patients was collected from the hospital records was analyzed.

The data collected were compared to other studies made in different parts of India. Our study had male predominance with occupational burns, highlighting the poor implementation of safety measures at the work place. With due precautions taken, most of these burns can be prevented.

Suicidal and homicidal burns still have female predominance. With use of psycho-social counseling and support we can also bring down the suicidal and homicidal burns too

KEYWORDS

Burn epidemiology, occupational burns, suicidal & homicidal burns, burns mortality.

Introduction

Burns still is a major cause of high mortality and morbidity in India. Here high illiteracy, poor public awareness, and lack of good medical facilities it poses a major problem for the society and the government as well. Studies from various parts of India reveals it to be a major problem throughout the country¹⁻⁴. Any study providing input on the profile of burns in particular region or population goes a long way in planning management and preventive strategies. Hence we planned this retrospective study to analyze the various aspects of burn injuries at our tertiary care hospital, Ludhiana, Punjab.

Material and Methods

All patients with burn injuries who were admitted in the Burn Unit of Christian medical college, Ludhiana from January 2016 to December 2016 were retrospectively studied. The data of 116 patients was collected from the patient records were analyzed. All age groups were included in the study. Patient's age, gender, occupation, type of burn, burn degree, burned percentage of total body surface area (TBSA), hospital stay, mortality rates were analyzed.

Results

There were a total of 116 patients admitted at our hospital during the period of the study (January 2016 to December 2016). The age of presentation ranged from 6 months to 72 years with mean age of 35.5 years. The majority of our patients were between the age group 21 to 30 years (table 1). In pediatric age group (0 – 18 Years) 25 patients were admitted and they constituted 21.55% of total burns treated. In geriatric age group (> 60 years) there were 4 patients and constituted 3.44% of total admissions.

Table 1. Age distribution of burns and types of burns.

Age (years)	Scald	Flame	Electrical	Chemical	Total
0 – 10	15	1	1	0	17
11 – 20	2	5	5	0	12
21 – 30	5	24	9	3	41
31 – 40	5	15	2	0	22
41 – 50	3	7	7	0	17
51 – 60	1	1	1	0	3
61 – 70	0	1	1	0	2
• 70	0	2	0	0	2

Of 116 patients, 89 (76.7%) were males. However 8 out of ten suicidal burns were seen in females. Similarly in all 3 cases of homicidal burns, the victims were females.

Seventy one patients (61.2 %) sustained occupational burns, 45 (38.7 %) of the burns occurred in domestic settings. Burns were sustained accidentally by 103 patients (88.9%). Suicidal burns were seen in 10 patients (8.6 %) and 3 patients had homicidal burns.

Among types of burns, 56 (48.3%) patients sustained flame burns, 31 (26.7%) patients had scald burns, 26 (22.4%) patients had electrical burns and 3 (2.6%) chemical burns. Children were the most common victim of scald burns.

Regarding Total body surface area (TBSA%) involvement, 38 patients sustained burns which were < 15% of TBSA, 50 patients (43.1%) sustained burns 15% to 45% TBSA, and 28 patients (24.1%) sustained burns which were > 45% TBSA.

The mean hospital stay of patients with > 45%TBSA was 27.3 days.

In our study, 22 patients (18.9%) did not complete their treatment and outcome in those cases could not be determined. Out of 116 patients, 24 patients expired and the overall mortality rate in our study was 20.7%. Rest all patients were discharged in satisfactory condition.

Discussion

There is still a high incidence of burn injuries in the developing countries. The burn epidemiology in developing world is different from the profile seen in developed world. Ahuja et al⁵ in their study have reported that with a population over 1 billion there are 700000 to 800000 burn admissions per annum in India. Burns poses a huge challenge for the medical and the paramedical staff, especially in the developing countries, where the resources are limited.

The present study included a total of 116 patients. The age at presentation ranged from 6 months to 72 years (mean age of presentation 35.5 years). The majority of our patients were between the age group 21 to 30 years. The increased incidence in this age group was also observed in other studies as well^{6,7}. Most of these injuries in this group were occupational injuries highlighting

the poor implementation of safety measures at the work place. The children (age 0 – 18 years) in this study were 25 and constituted 21.55% of total burn hospital admissions. We had 4 patients who were > 60 year 4 patients and constituted 3.44% of total.

Majority of our patients were males (76.7%). High incidence in males was probably because most of the burns were occupational burns in our study. This is in discordance with the other studies^{3,5,8,9} which shows female patients presenting more with burn injuries. Seventy one patients (61.2 %) sustained occupational burns, 45 (38.7 %) of burns happened in domestic settings. This too was different from the studies done elsewhere in India, where the majority of burn injuries treated were sustained in domestic settings^{1,3,5,7}.

Suicidal burns were seen in 10 patients, out of which 8 were females. Three patients who had homicidal burns, all of them were females. Another study from Ludhiana⁷ reported a similar incidence of homicidal burns. In their study too most of these were females.

In our study majority 48.2% of the burn injuries were sustained by flames, 26.7% had scald burns, 22.4% sustained electrical burns and only 2.58% (3) had chemical burns. Scald burns were mostly seen in pediatric age group (22.4%). Children, especially less than 6 years, are predominantly vulnerable to scald burns due to their curious and exploratory nature and poor judgment. Similar observation was also made by^{7,12,13}.

Thirty eight patients (32.7%) sustained burns < 15% burns and their mean hospital stay was 13.2 days. Seventy eight ((67.2%) patients with burns > 15% surface area burns needed surgical interventions like escharotomy, fasciotomy, multiple debridement and wound coverage in the form of split thickness grafting or flap coverage, thus increasing the their hospital stay⁷. Their mean hospital stay was 27.4 days.

Fifty four patients (46.5%) number of patients completed their treatment and discharged in a satisfactory condition.

Out of 116 patients, 24 patients expired. Mortality rate in our study was 20.68%. The mortality rate reported from other centres in India ranges from 22 to 60%^{1,3,4,7,12}. We did not have any mortality in patients with < 15% TBSA burns, eight patients died with 15% to 50% TBSA. 16 patients had died with > 50 % TBSA burns. Ten patients had died within 48 hrs after sustaining burn injuries. Major causes of mortality were shock, ARDS following inhalational burns, renal failure and septicemia. Mortality rate increased with the increase in % TBSA of burns.

Conclusion

Burns in India continues to be a major cause of concern in India due high morbidity and mortality associated with it. In our study predominant cause was occupational burns and hence most patients in our study were males. However, female predominance was seen suicidal and homicidal burns. The mortality in our study was 20.7%.

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