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Pediatric Burns: A 3 year retrospective study

Plastic Surgery

KEYWORDS:

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ABSTRACT

Paediatric burns make a significant number of total burn admissions at our hospital. Most of these are and happens in domestic settings. It not only causes high mortality, morbidity and also a profound effect on the child's psyche. The objective of our study was to study the pattern of burns in children up to the age of 12 years came to our hospital with burn injuries. A retrospective descriptive study was done in Department of Burns and Plastics Surgery at Christian Medical College, Ludhiana, India. Data of 54 patients from year 2012 to 2014 (3 years) was statistically analyzed. Most of our burn patients were young children (< 6 years) and had scald burns in domestic settings. Emphasizing the fact that these injuries are preventable and we need new prevention guidelines specific to Indian conditions.

Introduction

Burn injuries at a younger age are not only physically disabling but also have an immense impact on the child's psychology. It reduces the useful productive years of the child. Most of the pediatric burns are acquired at a household acquired, majority of them are preventable if due precautions are taken. In developing countries, where the resources are in shortage, it poses a huge challenge. It not only requires involvement of burn surgeons, nursing and paramedical staff there is also involvement of pediatricians and pediatric intensivists.

Objective

The objective of this study was to study the pattern of burns in children up to the age of 12 years who came to our hospital with burn injuries.

Material and Methods

The study was conducted In Department of Burns and Plastics Surgery at Christian Medical College, Ludhiana, India. The burn patients' up to the age of 12 years were included in the study. This was a retrospective descriptive study where we collected the data of the enrolled patients from year 2012 to 2014 (3 years). The data was collected retrospectively from the hospital records. This data was then evaluated for the pattern of burn injuries and statistically analyzed.

Results

A total of 54 children (up to 12 years of age) were treated at our center during the study period. During this period, pediatric burns constituted 16.5% of total burns treated at our centre. Out of these 34 (63%) were boys and the male to female ratio was 1.7. Most of our patients (38%) were in 0- 3 year age group (table 1).

Table 1: Age and gender distribution of burns in children.

Age groups	Male	Female	Total
0-3 years	12	9	21
>3 - 6 Years	10	8	18
>6 - 9 Years	5	2	7
>9 - 12 Years	7	1	8
		Total	54

The type of burns these children had sustained was scald burns, flame burns and electrical burns. We did not see any case of chemical burn in this age group. 48.2% was scald burns, 29.6% flame burns, 22.2 % was electrical burns. A larger proportion of children up to 6 years had scald burns. On the other hand in children >6 – 12 years, the major types of burns were flame and electrical (table 2).

Table 2: Types of burns.

Age groups	Scald Burns	Flame Burns	Electrical Burns	Total
0-3 years	16	4	2	22
>3 - 6 Years	8	7	4	19
>6 - 9 Years	0	1	3	4
>9 - 12 Years	2	4	3	9
Total	26	16	12	54

Most of the burns was sustained in kitchen 57.4 %, 16.7 % was sustained in bathrooms. While 25.9 % of burns sustained outside the home.

Table 3: Total body surface area (TBSA) percentage of burns

%TBSA	Scald	Flame Burns	Electrical Burns	Total
0-10%	7	5	4	16
11-20%	10	6	2	18
21-30%	2	2	1	5
31-40%	3	2	0	5
>40%	4	1	5	10
	26	16	12	54

Looking at total body surface area (TBSA %) burns; thirty four (62.9%) patients had burns which were 0 – 20%. Upper extremity was most commonly involved in burn injuries followed by trunk and face (table 3).

Regarding the treatment, 32 patients were treated conservatively with antibiotic and collagen dressings only. Operative intervention was required only in 8 patients. The common procedures done were debridement, tangential excision and split thickness grafting.

Mean hospital stay in the non operative group was 13.5 days and for those who had undergone operative interventions was 27.8 days.

Forty of our patients (74%) were discharged in a satisfactory condition and six (11.1%) patients had expired. The maximum mortality was seen in children with high surface area burns. Out of six children who died, five had burns >40% of TBSA. Three children had died of electrical burns, two died of flame burns and one died of scald burns.

Eight (14.8%) patients did not complete their treatment and left against medical advice. Outcome in these patients could not be ascertained.

Discussion

Burn continues to be a cause for major concern in children as due to

high morbidity and mortality associated with it. Burn accidents in children are almost always preventable provided the care takers are aware of hazardous situations even in domestic conditions[1]. The Male: female ratio in our study was 1.7. This higher incidence in boys is mainly due to the aggressive nature of boys as compared to girls. This higher male predominance is also reported in studies from India1 and abroad[2,3].

In the present study, scalds were the main cause of burns in children less than 6 years. The similar observations were made other studies from India and abroad[1-4]. This is usually due to inquisitive nature of children where they tend to put their hand in hot liquids or spill over them. We had few cases where the toddlers fell into the hot water bucket which was kept in the bathroom for bathing.

In the present study, 56.7 % of our children sustained burn injuries in the kitchen. It is in agreement with other studies where the most common place for burn injuries was the kitchen[4-6]. However the nature of accidents in India is very different from other countries. It is a common practice in rural India to do cooking at a floor level, making kitchens unsafe. This is especially dangerous for toddlers who can topple over the fire of into the hot liquids. This risk multiplies many folds during religious ceremonies. Here the food is commonly prepared at ground level with large stoves and utensils.

Conclusion

In conclusion, children in general are more vulnerable for burn injuries. Scald burns continues to be the major cause of burn in young children. Most of these burn accidents happen in common household settings and can be easily prevented[7]. Hence we put up a case for developing burn prevention guidelines specific to Indian conditions.

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