

Prospective Analytical Study of Burn Deaths in Infant and Children Below 6 Year

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Abstract

Introduction: Burn injury is not only leading health problem in adult but it also cause significant mortality and morbidity in children. Burns can be devastating injuries for children, the immediate effect of which is compounded by ongoing pain, cosmetic and physical disfigurement, impairment, multiple dressing changes and surgical procedures. This prospective analytical study was planned to study the pattern of burn deaths in infant and children.

Material and Method: This Study was carried out in department of forensic medicine and Toxicology, B.J. Medical College, Ahmedabad over the period of 2 year during which 30 cases were studied and analysed. Data was maintained using Microsoft Office Excel and analysed using test of proportions.

Result: Out of 30 cases studied during this period 18 (60%) cases were males and rest 12 (40%) were females. Most common type of burn was scald in 25 (83%) of cases, followed by electrocution in 3 (10%) cases and most common cause of death was septicaemia in 70% of cases followed by shock due to burns in 6 (20%) cases.

Conclusion: Burn injuries caused to them are because of their curiosity and innocent nature and unable to understand the extent of damage that will be cause by it. As these injuries are accidental and mostly occur in home, they are preventable.

Keyword: *Infant, Children burns, scald, pattern.*

Introduction

Burn injury in infant and children is considerable health problem not only in India but throughout the world. Paediatric burn injury constitutes about one-

fourth of the total burn accidents in India.¹ Burns can be devastating injuries for children, the immediate effect of which is compounded by ongoing pain, cosmetic and physical disfigurement, impairment, multiple dressing changes and surgical procedures.² Burn injuries have been ranked as second most common cause of accidental death in children younger than 6 years and the most common cause accidental death in the home.³ It is also called as a man's first double edged sword evidenced throughout the history; it has served as well as destroyed mankind.⁴ Burn is a injury which is produced by the application of dry heat such as flames, radiant heat or heated substance over the body surface.⁵ Burn injuries have been described as among the most serious injuries that may afflict a human being.⁶ A child below 3 years is

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too young to understand the danger in the proximity of burn area, so an identification of the risk factors leading to burn injuries is crucial. So this study was planned with aim to study the pattern of burn deaths in children under the age of 6 years brought for post-mortem examination.

Material and Method

This prospective analytical study was carried out in department of Forensic Medicine and Toxicology, B.J. Medical College, Ahmedabad over a period of 2 years from January 2017 to December 2018. A total of 30 cases of burns brought for post-mortem examination

at mortuary of civil hospital, Ahmedabad between 0-6 years was included in our study whereas deaths due to chemical burn, lightening, radiation and post-mortem burns were excluded. Detail history of the case was obtained from the patient close relatives, police and other person who were available at the time of incident and those who accompanies the victim at the time of post-mortem examination.

Data was maintained in Microsoft Office Excel and analysed for age, sex, type of burns, percentage of burn and cause of death using tests of proportion.

Result and Observation

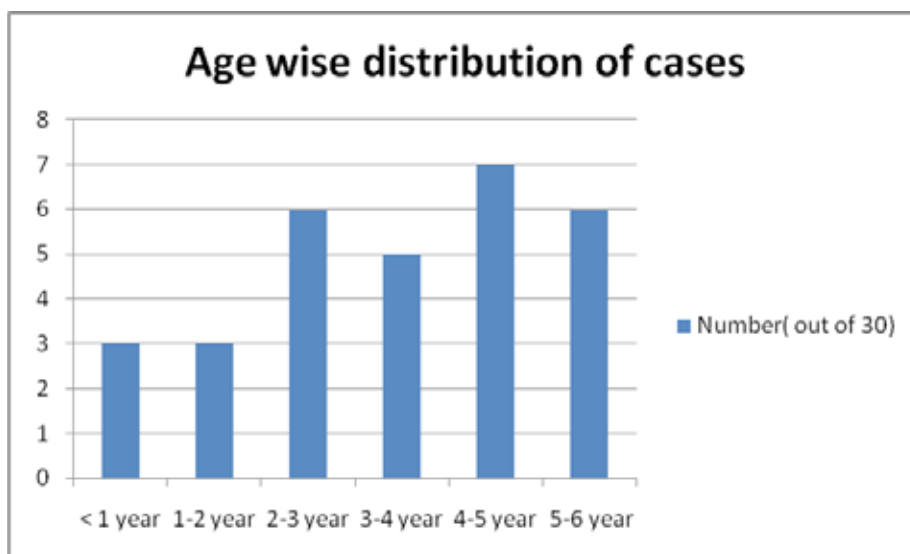


Fig. 1: Showing Age wise distribution of cases included in study

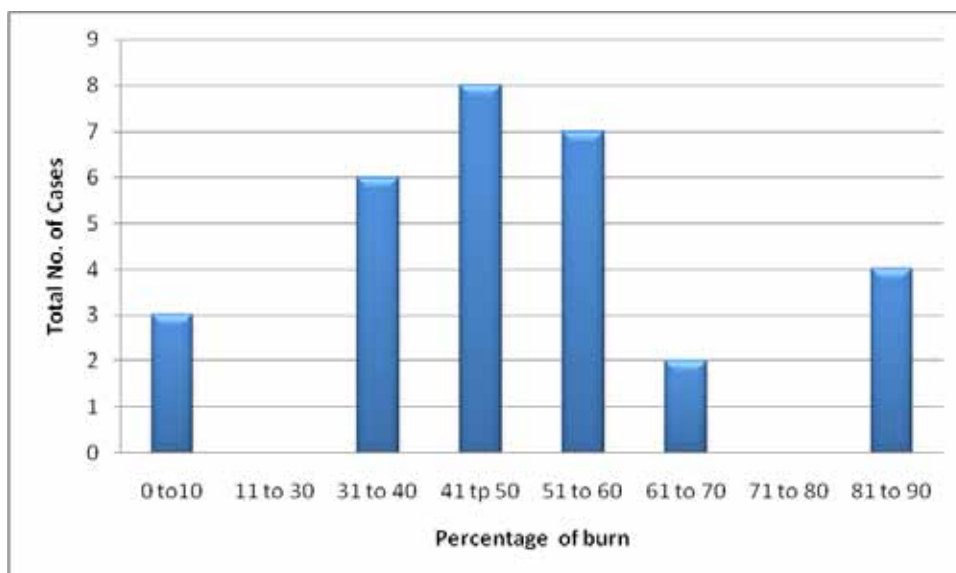


Fig. 2: Showing distribution of cases as per percentage of burns

During the study period total 30 cases were studied, 18/30 (60%) were males and rest 12/30(40%) cases were female showing male predominance. 7/30(23%) cases were found in age group of 4-5 years followed by 6/30 (20%) in age group of 2-3 years and 5-6 years. Age group 1-2 year and <1 year shows 3/30(10%) cases each. (Fig-1).

In majority of cases, 25/30 (83.30%) death was due to scald burns while in 3/30(10%) cases death was due to electrocution where as in 2/30 (6.66%) cases death was due to flame burn.

In our study maximum number of cases i.e. 8/30 (26.66%) cases shows 41-50% burns followed by 7 (23.33%) showing 51-60% burn. Whereas 4/30(13.33%) cases and 2/30(6.66%) cases showed 61-70 % and 81-90% of burns. 3/30(10%) cases shows burns less than 10%. In between 11-30% and 71-80% there were no burns cases. (Fig-2).

Cause of death was septicaemia in 21/30 (70%) cases followed by 6/30 (20%) and 3/30(10%) cases because of shock due to burns and shock due to electric burns respectively.

Discussion

Fire has been known to mankind for about 400,000 years. Although the use of fire was known to ancient man, it is probably the potential fury of an unharnessed fire that made man bow before it. India has an ancient culture where fire is worshiped since the civilization started. Along with water (jal), air (vayu), earth (prithvi), fire (agni) is perceived as one of the four basic components of universe.⁷ As per ministry of health and family welfare, Government of India database⁸, approximately 70 lakh people sustain moderate to severe burns in India every year. More than 7 lakh burn injuries require admission every year. About 80% of admitted cases are due to accidents at home i.e. kitchen related mishaps. Out of which 1.4 lakh peoples are succumbed to death. Amongst all traumas, burns have highest duration of hospital bed occupancy.⁸

In our study female were less affected than male, as 60% cases are male and 40% cases are female similar findings are also seen in other studies.^{9,10} Over activity of male babies as compared to female babies may be the reason of male preponderance. In the study scald burn is more common seen in 83% of cases followed by electrocution in 10% cases and in 7% cases death

was due to flame burn. Our this result is comparable with the study done by Lal St et al.¹¹ in which 54% cases shows scald burn. Scald is caused by boiling water, hot tea or milk. Young children usually sustain this injury due to their curious nature and unsteady movement. Electrocution is probably caused by naked wire carelessly kept in home. Out of two flame burn one was caused by accident while in other case mother burn herself with suicide intention keep baby along with her. All of the case in our study, incident occur in home that too mainly in kitchen. Home remains a dangerous place for children particularly in India due to lack of space to play, cook and storage of hot liquid.

Burns are the frequent cause of injury among children. Pediatrics burn injury can lead to severe physical, social, and psychological impairment. Burn injury results in longer hospitalization and a substantial cost of treatment. Pediatric burn injury can be more severe in comparison to the adults, because the skin is thinner. Even trivial burns in children can lead to dense scarring and contractures.¹¹

Conclusion and Suggestions

This study shows that burns injuries can cause major mortality and morbidity to the children. Burn injuries caused to them are because of their curiosity and innocent nature and unable to understand the extent of damage that will be cause by it. As this injury mostly occurs in home, they are preventable. Preventive measures such as

Provision of better housing conditions and reduction of overcrowding, especially in the kitchen or around cooking area.

Improvement of cooking facilities and with provision of raised cooking platform at least 3 feet above the ground level, so that the children cannot reach up to hot utensils.

Burning and lighting agent, kerosene wick, Deepak, candles, should not be left unguarded and should be kept away from the reach of children.

By applying such measures and proper educating the people we can reduce the mortality and morbidity caused by burns in children.

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Conflict of Interest: Nil.

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