



ORIGINAL RESEARCH PAPER

Surgery

A RETROSPECTIVE STUDY OF BURNS PATIENTS ADMITTED IN A TERTIARY CARE CENTRE

KEY WORDS: Burns, etiology, complication, preventive measures

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ABSTRACT

AIM OF STUDY

1. To analyze the epidemiological, demographic, sociocultural aspects of burns patient
2. To evaluate the etiological factors causing burn injury
3. Complications of burns and its outcome
4. To recommend measures to decrease the incidence of burns

Materials and Methods : The patients were admitted through casualty to the Burns unit under the Department of General Surgery, Tirunelveli Medical College and Hospital, Tirunelveli, Tamil Nadu, India, between January 2013 and December 2015 were studied for age, sex, type of burn injury, clinical prognosis, mortality rate, percentage of burn area. Total number of patients included in this study was 517. The age of patients ranged from 13yrs to 90 years. A majority of the patients i.e. 377(56%) were in age group between 20 and 49years and females were 205 in number

Conclusion : From the study, one can conclude that domestic and peri-domestic burn is totally preventable and manageable by taking occupational measures and raising public awareness about domestic accidents. Health education and premarital counselling is mandatory as most of the burns victims are problem oriented. Level of education and socioeconomic status also play a role

INTRODUCTION

Burns represent one of the major health problems in India. Burn injury is an emergency medical condition that rapidly develops as a result of tissue exposure to electrical, chemical or thermal energy. Therefore, its treatment usually begins at the emergency department. Though the burns mortality has decreased in the recent past owing to the ongoing medical and surgical advances, nevertheless, the burn injuries are still associated with significant mortality and morbidity. In a developing country like India, burn injuries continue to be a challenging problem due to poor medical facilities, lack of specialist doctors, and absence of public awareness. An extensive burn adversely affects both patient's and his family's psyche. Also the costs involved in treatment of burn patients are exorbitantly high. This is more so important in Indian society where majority of the people are illiterate and live below the poverty line. After providing first medical aid at the emergency department, it is imperative that multiple departments, particularly general surgery and plastic surgery, cooperate for the management of burn injuries (1). Furthermore, demanding medical care of these patients gives rise to the high cost of care depending on burn percentage, degree, as well as the duration of hospital stay (2). Massive burns are associated with high mortality.

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Materials and Methods

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Following admissions initially they were resuscitated in the casualty department and they are shifted to burns ward. They are monitored in the ward by checking the urine output, respiration and other parameters. Necessary investigations were done and

treatment continued accordingly. Pus culture and sensitivity was taken for patients who were in hospital for more than three days. Data were collected from the Medical Record Department for study. The admissions were made by measuring the burn area rule of nine.

Results of Study

The age of patients ranged from 13yrs to 90 years. A majority of the patients i.e. 377(56%) were in age group between 20 and 49years and females were 205 in number shown in pie diagram (Fig-1). Out of 517 patients, 221 (43%) were males and 296 (57%) were females. Of these 221 males, 57(26%) sustained occupational burns which included electricians and industrial burns and 137(62%) sustained burns accidentally. In this study, 28 (5%) patients sustained <10%TBSA burns, 66 (13%) patients sustained <20% of TBSA burns, and 38(7%) sustained <30%TBSA burns&61 (12%) were <40%TBSA. In females most of the cases are deep burns 80% compared to males in which they are superficial burns. Male Burns <20% TBSA were in working class especially electricians. With regards to the causative agent 88% sustained thermal burns 11% sustained electrical burns & a percent of chemical burns depicted in fig: 1

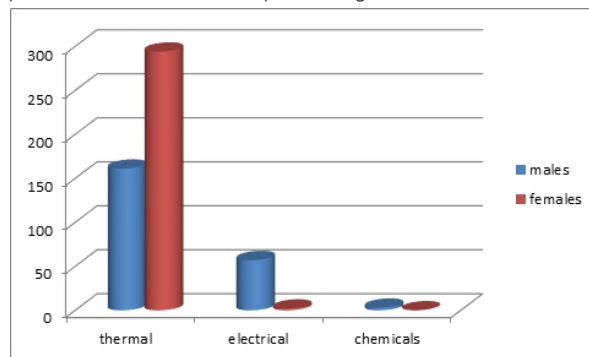


Fig- 1: source of burns

103 (20%) sustained accidental burns, 415(80%) sustained suicidal burns. Of the 102 accidental burns, 40 patients had sustained flame burns (in house, work place, Diwali crackers, etc), 59 patients had sustained electrical burns, 3 had chemical burns.. 423 patients (82%) had wound infection as diagnosed by wound cultures. Most common organisms causing wound infection were Pseudomonas, Acinetobacter, Klebsiella and Enterobacter. Most

common organisms causing urinary tract infection were *E.coli* and *pseudomonas*. Cause of death septicemia constitute about 105 females and 46 males were as hypovolemic shock constitute about 88&37 respectively. Total deaths among the females were 193 of 296 admissions and among males 83 of 221. Death in <20% of burns were due to old age and in addition they sustained acute kidney injury and gone for MODS depicted in figure -3

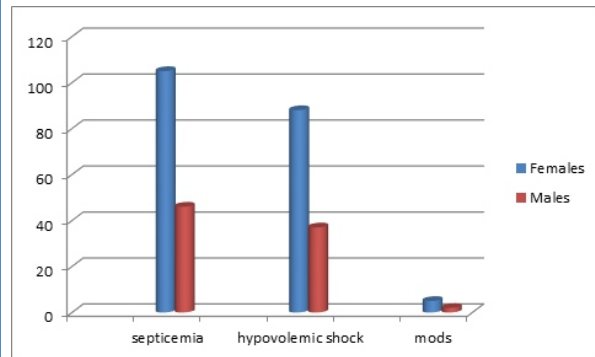


Fig-3; Cause of death

Discussion

India is a country of diverse cultures and societies and every society has, in a way, its own epidemiological characteristics. Epidemiological studies become more important in such diversities. Definite preventive and educative measures were taken to reduce the incidence of burns. In our study highest incidence of burns was in age group between 20 and 49 years. This distribution is similar to Khan et al (3, 5). High incidence is explained by the fact that they are more exposed to hazardous things at their working places and home.

In our study 57% patients were females and 43% were males. A majority of the females involved were housewives who spend most of their time working in kitchen. Moreover, an average Indian family is ignorant about safety measures and still follows old traditional methods of cooking. All this makes them more susceptible to burns. This age group also involves newly married women who become victims of bride burning. This can be the result of harassment from parents-in-law or other physical and psychological stresses of marriage.(9-11) This high incidence of thermal burns is similar to other studies(12, 13)

In this study 63% patients sustained major burns involving > 45% TBSA, which is consistent with other studies.(13) The other reason for this could be non-referral of patients with minor burns, to a tertiary care hospital, because of illiteracy and poverty. A majority of the patients (80%) sustained burns in closed space. This figure is comparable to reports from other developing countries. The figures from Nigeria (14) Ghana (15) and Egypt (16) show more than 70% injuries occurring at home.

In the present study, 20% patients sustained accidental burns while 80% sustained suicidal burns. In Indian set up, suicidal burns in married women are increasing because of marital disharmony or dowry harassment resulting in physical and psychological stress (17). Homicidal burning of married females is similarly common, as well. But these women, because of fear from in-laws, do not name marital disharmony or dowry as the reason behind burns but instead blame it on some accidental reason as cause of their burns. The interesting finding of this study was change in statements made by the cause of burns. Due to pressure of relatives and because of anxiety, patients initially confess to have sustained accidental burns. But when they realize the seriousness of their illness and ultimate fate they are going to meet, patients disclose the real cause of burns. In our study >75% of cases were from low socioeconomic status and literacy also they studied upto middle school level only. The majority of the victims are from rural areas and they are joined families. The main triggering factor is the alcohol and financial crisis. Most of the men are alcoholics and health education should be given to the youngsters.

In this study 70% of cases underwent eschorectomy and 50 cases of electrical burns underwent fasciotomy. Early excision and skin grafting of deep burns is far superior over conventional treatment. It reduces the mortality, complication, infection rate, further more hospital stay. The mortality rate in our study was 55% which was comparable with other studies. Out of 283 deaths, 176 (97.8%) patients had > 80% TBSA burns. Majority of the patients who sustained >80% burns died within 72hrs of hospital admission. The major factor for mortality are irreversible hypovolemic shock, septicemia, ARDS and MODS. Burns remains a huge public health issue at least in terms of morbidity and long-term disability. Also stress should be laid on burn prevention rather than burn care. We need to promote education in all phases of burn care including first aid and nursing.

Conclusion

From the study, one can conclude that domestic and peri-domestic burn is totally preventable and manageable by taking occupational measures and raising public awareness about domestic accidents. This basic education should be imparted from the primary school level and reinforced at every level till the university by different interactive way. The innovative approaches can include a broad theme "How you can save yourself and others from burns at home." We need to do more analytical studies into the causes of death and time interval between injury and admission.

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