Research Article

Incidence of burn cases reported in tertiary care institute: A retrospective analysis

Ravi Rambhau Khandare

Associate Professor, Department of Surgery, Government Medical College, Akola, Maharashtra, INDIA.
Email: kravi2620@gmail.com

Abstract

Introduction: Burn is the second most common cause of death with mortality rate of 15.1 per year per 100,000 populations, in rural district, it constitutes for 23.3% of all medicolegal deaths. In Punjab state burn was found to be the second commonest cause of death (16.7%) while in Delhi, it was the fifth leading cause of death (6.1) of all unnatural deaths and it was 18.1% from the Beed district of Maharashtra. **Aims and Objectives:** To study the incidence of burn cases reported in tertiary care institute. **Material and Method:** The present retrospective descriptive study was conducted in the department of surgery at Mahatma Gandhi Institute of Medical Sciences, Sevagram. For the purpose of study retrospective data was collected from 1st April 1999 to 31st March 2003. All the patients who sustained burns and admitted to Kasturba Hospital during this period were included in this study. Total 114,074 admissions were done in the institute during the study period out of them 714 cases were of burn. The case records were obtained from the medical records department and details of the patients were recorded in the given standard proforma. **Results:** The incidence of burn was 0.84% of total hospital admissions and 3.65 % of total surgical admissions per year. Majority of the patients (53.64%) in the study were between 21 to 40 years of age. Male: Female sex ratio in the present study was 1:1.73. Most of the burn injuries were accidental (92.57%) followed by suicidal attempt (4.34%) and only 3.08% were homicidal burns. Out of 714 burn patients, 88.93% were flame burn. Maximum number of patients presented with burns 0-20% of TBSA (30.10%). **Conclusion:** The incidence of burn was 3.65% amongst total surgical patients while it was 0.84% of total hospital admissions. Young women were the most common sufferers of burns and accidental burn was the most common type.

Keywords: burn cases, incidence, accidental burn.

*Address for Correspondence:
Dr. Ravi Rambhau Khandare, Associate Professor, Department of Surgery, Government Medical College, Akola, Maharashtra, INDIA.
Email: kravi2620@gmail.com

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INTRODUCTION

Ancient man discovered fire to serve his daily needs and then became its worshipper. However, deaths due to burn continue to lay its icy hands on its innocent victims since years. An extensive burn is catastrophic in the sense of its insult on the body, in its psychological impact and in cost and suffering of the family involved. Since time immemorial burns have been a major cause of human death and disability. Death continues to start in the corridors of the burns patient due to paucity of means and knowledge. Initially the age old custom of Sati and now the social evils of dowry associated with increased stress and strain of life have compelled the women time and again to bid farewell to this world prematurely. Burn is the second most common cause of death with mortality rate of 15.1 per year per 100,000 populations, in rural district, it constitutes for 23.3% of all medico legal deaths. In Punjab state burn was fond to be the second commonest cause of death (16.7%) while in Delhi, it was the fifth leading cause of death (6.1) of all unnatural deaths and it was 18.1% from the Beed district of Maharashtra[1]. Because India does not have a national injury surveillance system, the only official source of information about the incidence of burn morbidity and mortality is from police reports.13 However, it is well known that police can be extremely lax in registering reports[2] and that, in cases of suspected criminality, family members of a victim might be able to bribe police to

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avoid investigation. Although some highly publicized cases of such connivance of police.

AIMS AND OBJECTIVES

To study the incidence of burn cases reported in tertiary care institute.

MATERIAL AND METHOD

The present retrospective descriptive study was conducted in the department of surgery at Mahatma Gandhi Institute of Medical Sciences, Sevagram. For the purpose of study retrospective data was collected from 1st April 1999 to 31st March 2003. All the patients who sustained burns and admitted to Kasturba Hospital during this period were included in this study. Total 114,074 admissions were done the institute during the study period out of them 714 cases were of burn. The case records were obtained from the medical records department and details of the patients were recorded in the given standard proforma. Detailed history including place, time of burn, nature and type of burn, and other relevant conditions were retrieved from the case records. Details about clinical examination including assessment of general condition of the patient, area of burn, depth of burn and systemic examination were recorded from the case sheet. The findings of the patients of were confirmed by follow-up and examination wherever possible. The collected information was entered in excel sheet and was analyzed by using appropriate tables and graphs.

RESULTS

Table 1: Year wise Incidence of burn

Year	Total Hospital Admissions	Total surgical admissions	Burns % Surg. Adm.	Burns % (Hosp. Adm.)
1999-2000	22718	4499(19.80%)	140 (3.11%)	140 (0.61%)
2000-2001	27928	4741(16.97%)	189 (3.98%)	189 (0.67%)
2001-2002	35502	5160 (15.40%)	198 (3.83%)	198 (0.59%)
2002-2003	27926	5136 (18.39%)	187 (3.64%)	187 (0.66%)
Total	**114074**	**19536 (17.13%)**	**714 (3.65%)**	**714 (0.63%)**

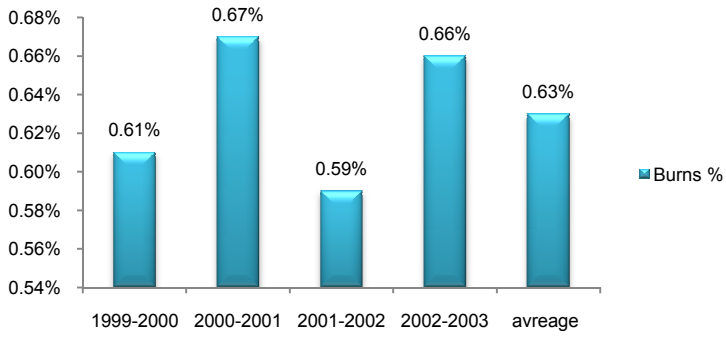

Figure 1: Yearwise Incidence of burn

It was observed that in 4 years, total 114074 admissions were done the institute and 19536 were surgical admissions. Out of them 714 cases were of burn due to various causes. Thus the incidence of burn was 0.84% of total hospital admissions and 3.65 % of total surgical admissions per year.

Table 1: Age and sex wise distribution of patients

Variable		No. of patients	Percentage
Age (Yrs.)	0-20	234	32.77%
	21-40	383	53.64%
	41-60	78	10.92%
	61-80	17	2.38%
	81-100	2	0.28%
Sex	Male	261	36.55%
	Female	453	63.45%

It was observed that majority of the patients (53.64%) in the study were between 21 to 40 years of age and 32.77% patients were below 20 years of age. There were only 2(0.28%) patients were above 80 years of age and 2.38% percent patients were between 61-80 years of age. Male: Female sex ratio in the present study was 1:1.73 i.e. females were outnumbered males (63.44% and 36.55% respectively).

Table 2: Distribution according to nature and type of burn

Variable		No. of patients	Percentage
Nature of burn	Accidental	661	92.58%
	Homicidal	22	3.08%
	Suicidal	31	4.34%
Type of burn	Flame	635	88.94%
	Scalds	47	6.58%
	Electrical	32	4.48%
	Chemical	0	0%
Total		**714**	**100%**

It was observed that most of the burn injuries were accidental (92.57%) followed by suicidal attempt (4.34%) and only 3.08% were homicidal burns. Out of 714 burn patients, 88.93% were flame burn. While scalds were

6.58% and electrical burns only 4.48%. There were none of the patients in our series who sustained chemical burns.

Table 3: Distribution according total body surface area of burns (%)

Surface area of burns	No. of patients	Percentage
0-10	92	12.89%
11-20	123	17.23%
21-30	80	11.20%
31-40	62	8.68%
41-50	54	7.56%
51-60	68	9.52%
61-70	52	7.28%
71-80	53	7.42%
81-90	62	8.68%
91-100	68	9.52%
Total	**714**	

Maximum number of patients presented with burns 0-20% of TBSA (30.10%) followed by the patients who had burns 21-40% TBSA (19.88%), 41-60% of TBSA (17.08%) and 61-80% of TBSA (14.56%), 81-100% of TBSA (18.34%) (Table XI).

DISCUSSION

The present retrospective study was conducted in the department of surgery at Mahatma Gandhi Institute of Medical Sciences, Sevagram. All the patients who sustained burns and admitted to Kasturba Hospital during 1st April 1999 to 31st March 2003 period were included in this study. It was observed that out of the total average hospital admissions (21037), the incidence of burn was 0.84% and it was 3.65% of the total surgical admissions (4884) per year, which is similar to as shown by Calder *et al*[3] i.e. 0.54% and 3% respectively. Burn constitutes a major health problem and is next to road traffic accidents as a major cause of death in India. It accounts for mortality of 15.1% per year per 100,000 populations. It was the second cause of death in Panjab and 5th in Delhi[1]. It was seen that the majority of our burn patient (53.64%) were in 21 -40 years of age group. 32.7% patients were below 20 years. Similar findings were also reported by I Galal *et al*[4], and Gulhani *et al*[5]. However, Subrahmanyam *et al*[6] and Batra[1] reported higher incidence of burn (79.4% and 43.5% respectively) as compared to the present study. The Male: Female ratio in the presents study was 1:1.73. Thus female preponderance was observed in the present study. C.N. Malla *et al*[7], Gulliani *et al*[5], Varma *et al*[8], M. Subrahmanyam *et al*[6], I Gallal *et al*[4], Batra *et al*[1] also observed female predominance in their study. Accidental burns were most common in the present (92.57%), followed by suicidal burns (4.43%) and himocidal burns (3.08%). Similar pattern of higher burns due to accidents was also reported by Jajoo *et al*[9], Varma *et al*[8], Batra *et al*[1]. It was observed that 88.93% patient's sustained burns due to flames followed by scalds (6.58%) and electrical burn (4.48%). None of the patients in present study had chemical burns. Dubey *et al*[10] (86%), Gupta *et al*[11] (71%), Ghulliani *et al*[5] (58%) and Dandpat *et al*[12] (70%) also reported flame burn as the most common type in their studies. In the present study maximum number of patients had burns 0-20% of TBSA (30.10%), Followed by the patients, who had 21-40% of TBSA (18.34%), 41-60% to TBSA (17.08%). Jajoo *et al*[9], Varma *et al*[8], I-Gallal *et al*[4] had also reported similar patterns of TBSA being less than 20% burns in their studies.

CONCLUSION

The incidence of burn was 3.65% amongst total surgical patients whilst it was 0.84% of total hospital admissions. Young women were the most common sufferers of burns and accidental burn was the most common type.

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