Body Surface Area (BSA), Body parts Involvement and Consciousness among burns case brought to Tertiary care hospital

Dr. R. V. Bhagora[1], Dr. Jainik P. Shah[2], Dr. S. D. Kalele[3], Dr. T. C. Patel[4], Dr. L. R. Bhagora[5], Dr. A. D. Modi[6]

ABSTRACT

Introduction: To provide better facilities medically as well medico-legally it is very important and urgent to know about the profile of cases of burns especially in Bhavnagar region. **Materials and Method:** The present study was conducted in department of forensic medicine Govt. Medical College, Bhavnagar during the period from January 2013 to December 2013 with a view to study the BSA, Body parts Involvement and Consciousness among burn cases brought for the post mortem examination and includes a total of 243 cases of death due to burns. All the data related to age, sex, marital status, type and manner of burns with area involved, and survival time were recorded with detailed autopsy examination and subsequently analyzed statistically. **Results:** in 41.56% case Total Body surface area involved was 91-100%, our of 243 burns case 207 case were conscious when brought to Hospital. Most commonly involved body part was upper limb followed by chest and genital were involved in only 114 cases. **Conclusion:** The epidemiological factors of burn injuries vary in different countries. For planning and implementing prevention programs, the approach has to be multi-disciplinary and coordinated.

Key Words: Burn, BSA, Body parts, Level of consciousness

[1, 2] Assistant Professor, [3]Professor and Head, [4,5,6] Resident Doctor
Department of Forensic Medicine and Toxicology, Govt. Medical College, Bhavnagar, Gujarat.
Corresponding author mail: rajani.bhaghora@yahoo.com

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INTRODUCTION

Developing countries have a high incidence of burn injuries, creating a formidable public health problem. High population density, illiteracy, and poverty are the main demographic factors

associated with a high risk of burn injury. The exact number of burns is difficult to determine: judicious extrapolation suggests that India, with a population of over 1 billion, has 700 000 to 800 000 burn admissions annually. The high incidence makes burns an endemic health hazard. Social, economic, and cultural factors interact to complicate the management, reporting, and prevention of burns[1].

Dowry deaths in India have become a problem of great concern. Almost every day we get to see in the electronic media and so to read in the newspapers, cases of young women either being burnt or provoked to commit suicide by the husband and in-laws, just for the dowry. At the same time accidental burns in women also occur commonly, to which they are more vulnerable as most of the women (housewives) spend their time in the kitchen[2].

Due to higher incidence of burns and high mortality rate due to burns in Bhavnagar region this study has been undertaken to find out epidemiological profile and other important aspects of deaths due to burns and to compare with the observations of various authors by scientific discussion.

MATERIAL AND METHODS:

The present study was carried out on the burns cases brought to mortuary of Government Medical College & Sir Takhtsinhji Hospital, Bhavnagar for medico-legal autopsy examination during the period from 1st January 2013 to 31st December 2013 includes a total of 243 cases of death due to burn injuries.

Detailed history of the case was obtained from the deceased's close relatives, friends, police and the other available persons who were present at the time of incidence and those accompanying the victims, with special reference to General information like Name, Age, Sex, Address, Religion, Marital Status, Education, Socio-economic Status, and Occupation etc. Details of autopsy examination were also recorded for detailed analysis. Findings of post-mortem examination were compared with history and circumstances to know whether they are consistent or not. The information was compiled, tabulated and analysed using Microsoft Excel.

RESULTS AND DISCUSSION

Out of total 1270 autopsies were conducted during the study period 243 cases (19.13%) of death from fatal burn injuries were recorded. The maximum number of the victims (33.75 %) belonged to the age group of 21-30 years and least number of victims in the 0-10 age group (1.64%)**.** Burn cases were higher in female's 178 cases (73.25 %) as compared to 65 cases (26.75 %) in males making a female to male ratio of 2.74:1 **(Table -1).**

Table-1: Age and sex wise distribution of burns cases

Age Group in years	Male		Female		Total	
	No. of Cases	% of Cases	No. of Cases	% of Cases	No. of Cases	% of Cases
0-10	3	1.23	1	0.41	4	1.64
11-20	6	2.47	34	14.00	40	16.46
21-30	17	7.00	65	26.75	82	33.75
31-40	17	7.00	42	17.28	59	24.28
41-50	11	4.52	13	5.35	24	9.88
51-60	7	2.88	2	0.82	9	3.70
> 60	4	1.65	21	8.64	25	10.29
Total	65	26.75	178	73.25	243	100

As per the total body surface area (TBSA) involved, 41.56 % (101) victims had 91-100 % TBSA, followed by 81-90 % TBSA in 21.40 % (52) cases **(Table -2)**.

Table -2: Distribution of burn cases according to involvement of Total Body Surface Area (TBSA)

TBSA	Male		Female		Total	
	No. of Cases	% of Cases	No. of Cases	% of Cases	No. of Cases	% of Cases
< 40	6	2.47	4	1.65	10	4.11
41-50	5	2.06	1	0.42	6	2.47
51-60	9	3.7	16	6.58	25	10.29
61-70	9	3.7	17	7	26	10.70
71-80	7	2.88	16	6.58	23	9.47
81-90	7	2.88	45	18.52	52	21.40
91-100	22	9.05	79	32.51	101	41.56
Total	65	26.74	178	73.26	243	100

Level of Consciousness was during patients admission at hospital were also recorded. It was found that out of 243 patients total 207 (85.15%) patients were conscious at the time of admission

Analysis of body parts involvement shows that highest involved part was upper limb 236 (97.11 %) followed by Chest 230 (94.65%), Abdomen 229 (94.29%), lower limb 212 (87.24%), Head and Neck 206 (84.77%), involvement of genitals were in less than 50 % cases 114 (46.91%)

In present study findings were consistent with history.In present study rate of burn death was higher in third decade of life in married women which is well supported by many Indian authors like Chandra et. al[3], Ghuliani KK[4], Tirpude BH[5], Naik RS[6], Gupta RK[7], Sharma BR[8], Mangal HM et al[2].

In this study, maximum (72.43 %) cases of burns involving more than 70 % of the total body surface area, while 27.57 % cases of burns involving less than 70 % of total body surface area which is supported by Gagde et al[13].

CONCLUSION

Epidemiological profile and other important parameters found during present study is nearly similar to other Indian studies. Most of the burn victims were married females of younger age group, who died due to hypovolemia with in very

first day of incidence either due to accidental or suicidal burns involving more than 50% body surface area. In present study it is also found that victims with lesser percent of burns were also died in spite of treatment given at tertiary level. So it is matter of great concerned for our health system to find the pitfalls and correct it to save the lives.

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