

was up to 25% in 3 cases, between 25-50% in 32 cases, between 50-75% in 23 cases and was more than 75% of surface area in 42 cases. Maximum deaths due to burns were because of surface area involved in the burn injury. [15] Observed the mean age burn surface area of 63.3% leading to death irrespective of depth. Other study [19] finds that suicidal cases, the extent of burns ranged from 50% to 100% of body surface.

In the other previous study [20] revealed that in 75.1% cases, burns extend more than 60% of TBSA. In 78.6% of the females, burns cover more than 80% of TBSA as compared to 55.8% of males. This finding is consistent with the study of [21, 22]. It indicate that burns extending more than 60% of TBSA are usually fatal and mortality is higher in such cases though better treatment and care are provide to the patient.

5.3. Degree of Burn

Present work Shows the distribution of burn cases on the basis of degree of burn among study group (n=450).Fourth degree burn (Destruction of whole skin) dermoepidermal burn involved the majority of victims 416 cases i.e. 92.44%, followed by third degree burn cases 13 i.e. 2.89%. Sixth degree burn is most severe form of burn involves 10 fatal cases i.e. 2.22%.First degree burn victims are nil (only involvement of epidermis and it cause erythemas and is nonfatal).

Other study contradicts and found that 1st degree burns were suffered by 6% cases in male and 8% of cases in females. 2nd degree burns were seen only in females in 4% of cases. Maximum burns were of 3rd degree in which 28% males and 54% females sustained burns [14].

Other study [19] the predominance of 3rd and 4th degree burns in his 21cases study. [23] In his study observed that the depth of burns has no relation with the fatality, rather burns of 2nd and 3rd degrees of 57.3% body surface survived more than 16 days.

Majority of the cases [24] belonged to third-degree burns (69.45%), whereas the rest (30.55%) were first and second degree. Although first-degree burn was almost equally prevalent among male and female (10.58%, 10.79%), third-degree burn was more common among female than male (71.99%, 57.69%).

5.4. Cause of Death

In the present work we observed that distribution of burn death victim on the basis of cause of death among study group (N=450). It was observed that most common cause of death was septicemia shock in 259 cases i.e. 57.56% ,followed by secondary shock (hypovolumic shock) cases 144 i.e. 32.00%. Death due to Primary shock 5 cases i.e. 5.56%, Toxemia 25 cases i.e. 3.56%, suffocation 6 cases i.e. 1.33%. This was in accordance with the findings of the studies of other author's. Thus, infection leading to secondary complications and ultimately, multi organ failure was the major cause of death in the burn cases, which could be tackled with the use of better burn care facilities.

Other studies also find similar result that septicemia was observed to be a major cause of death (50%) among the deceased. It is also find that in 39.6 % cases; more than 90 % of the body surface area was involved. Only 3.2% of the deceased were seen with burns which involved <50% of the body surface area. Septicemia was observed to be a major cause of death (50%) among the deceased [25].

In the majority of these women, [26] shock was the cause of death and only two deaths could be attributed to etiologies other than directly related to the burn itself (i.e. sepsis). [27] Reported shock as the most frequent cause of death in their series, as did [28].

The [20] study revealed that most of the patients died within one week of incidence and septicemia was most common cause of death. This finding is similar to other studies [29,30]. Though better care and treatment is provided to the burn patients, infection especially hospital acquired involving large body surface area are difficult to control in peripheral hospitals which leads to septicemia deaths.

6. Conclusion

- 14.29% which forms a considerable bulk and draws attention to the grievousness of this problem.
- Body surface area and degree of burn significant affect burn death.
- Educating the people about safety measures through various programmes, television, and other media, warning label or cautionary information accompanying the sale of gasoline, kerosene or petrol into any container.
- Intersectorial coordination.
- Running anti-dowry campaigns.

7. Acknowledgement

Author would like to thank to the office of department of Forensic Medicine for their valuable support and full help in data collection from autopsy record register.

8. Funding Source

This research was not financially supported by any funding agencies.

9. Ethics Statement

The present study was approved by "Institutional Ethics Committee" of Institute of Medical Sciences, Banaras Hindu University. All the information has been taken under consideration of medical ethical committee.

10. Conflict of Interest

Nil

11. Tables and Charts

Table 1: Distribution of incidence of burn autopsy (N=450):

Total number of autopsy	Total number of burn autopsy	% of total number of burn autopsy	Total number of burn victims for study	% of total number of burn victims for study
3149	600	19.05	450	14.29

Table 2: Distribution of burn cases on the basis of surface area involved among study group (N=450):

surface area (in percent)	Total No. of cases	% of total cases
40	30	6.67
41-50	39	8.67
51-60	40	8.89
61-70	47	10.44
71-80	55	12.22
81-90	56	12.44
91-100	183	40.67
Total	450	100.00

Table 3: Distribution of burn cases on the basis of degree of burn among study group (n=450):

Degree of burn	Dupuytren's	Wilson's	Total No. of cases	% of total cases
Erythema	1°	Epidermal	0	0.00
Vesicle with blister	2°	Epidermal	5	1.11
Destruction of superficial skin	3°	Dermo-epidermal	13	2.89
Destruction of whole skin	4°	Dermo-epidermal	416	92.44
Destruction of deep fascia, muscle	5°	Deep	6	1.33
Involve vessels, nerve, bone	6°	Deep	10	2.22
Total			450	100.00

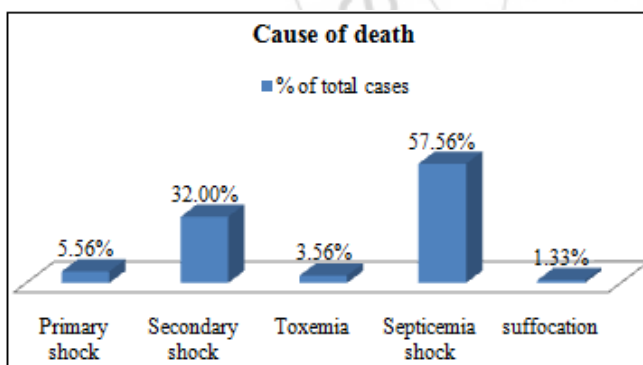


Figure 1: Column diagram shows distribution of burn victim on the basis of cause of death among study group (N=450):

References

[1] www.yourdictionary.com › Dictionary.
 [2] K S Narayan Reddy; The essential of forensic medicine and toxicology; 31st edition, K. Suguna Devi, pp: 296-306.
 [3] Pekka saukko and Bernard knight, 3rd edition Knight's forensic pathology pp 312.
 [4] P. Krishnan , Q. Frew, A. Green, R. Martin, P. Dziewulski Cause of death and correlation with autopsy

findings in burns patients , Accepted 26 September 2012; Published online 08 November 2012; pp: 1.
 [5] WWW.CENSUS2011.CO.IN › UTTAR PRADES.
 [6] Kenneth J. Rothman (21 June 2012). Epidemiology: An Introduction. Oxford University Press. p. 53. ISBN 978-0-19-975455-7.
 [7] The Merck Manuals; http://www.merckmanuals.com/professional/ injuries_poisoning/burns/burns.html#v1112906.
 [8] SinasDramis.com
 [9] Batra AK, Burn mortality: recent trends and sociocultural determinants in rural India, Burns; May 2003, 29(3): 270-5.
 [10] Dr. N. P. Zanjad et a; 2007; Study of Fatal Burn Cases in Medico- Legal Autopsies; JIAFM, 2007 29 (3); ISSN: 0971- 0973.
 [11] Batra AK, Burn mortality: recent trends and sociocultural determinants in rural India, Burns; May 2003, 29(3): 270-5.
 [12] Ambade VN, Godbole HV, Study of burn deaths in Nagpur, Central India, Burns; Nov 2006, 32(7): 902-8.
 [13] Shinde A.B., Keoliya A.N.; Socio-demographic characteristics of burn deaths in rural India; www.ijhbr.com;International J. of Healthcare & Biomedical Research, Volume: 1, Issue: 3, April 2013, Pages 227-233.
 [14] Rahul Chawla et al ;Original research paper A Two-year Burns Fatality Study; Indian Acad Forensic Med; 32(4);2004-2005;PP:292-296.
 [15] Sukhai A, Harris C, Moorad RG, Dada MA; Suicide by self immolation in Durban South Africa; A fine year retrospective review. Am J Forensic Med Pathol 2002; 23(3): 295-298.
 [16] Datey S, et al; A study of burn injury cases from three hospitals; Ind J Public Health; 1981; 25: 117- 124.
 [17] McIndone; the General effects of Injury and Hemorrhage. Proc R Soc Med 1940; 34: 56.
 [18] Aggarwal BBL, Chandra J; A Study of Fatal Cases of Burns in South Zone Delhi; Punjab Med J; 1970; 20(12): 451.
 [19] Betz P, et al. Carboxyhemoglobin Blood Concentrations in Suicides by Fire. J British Acad Forensic Sci; 1996; 36: 313-316.
 [20] Dr. N. P. Zanjad et a; 2007; Study of Fatal Burn Cases in Medico- Legal Autopsies; JIAFM, 2007 29 (3); ISSN: 0971- 0973.
 [21] Singh D, et al. Burn mortalities in the Chandigarh zone; 25 years of autopsy experience from a tertiary care hospital of India; Burns 1998; 24: 150-6.
 [22] Bang R. et al, Burn mortality during 1982 to 1997 in Kuwait, Eur J. Epidemiol; 2000, 16(8): 731 9.
 [23] Stefan J.; Burn Injuries-contemporary and previous findings. Sound Lek 2004; 49(4): 57-62.
 [24] S Lal, GK Yadav, Rachna Gupta, GP Shrivastava, S Singh, Jayanta Bain; Mortality pattern of burn patients admitted in S. G. M. Hospital Rewa: A teaching institute of central India; Year : 2012; PUBMED; volume : 39; Issue : 3; Page : 130-135.
 [25] Richa Gupta et al; Profile of the Fatal Burn Deaths from the Varanasi Region, India; JCDR / 2012/4179:0016; pp: 608-611.
 [26] Virendra Kumar a, Manoj Kumar Mohanty , Sarita Kanth, Fatal burns in Manipal area: A 10 year study,

Received 14 May 2005; received in revised form 13 September 2005; accepted 28 September 2005, Journal of Forensic and Legal Medicine 14 (2007) 3–6.

- [27] Arora S, Antia NH. The treatment of burns: treatment of burns in a district hospital. Burns 1977; 4:49–51.
- [28] Agha RB, Benhamia A; Epidemiology of burns in Algiers; Burns; 1979; 5:204–5.
- [29] Gupta RK and Srivastava AK. Study of Fatal burn cases in Kanpur (India) Forensic Science International; 1988 ;(37):81-89.
- [30] Subrahmanyam M., Epidemiology of burns in a district hospital in western India, Burns; Sep 1996, 22(6): 439-42.

