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Retrospective Study of Analysis of Deaths Due to Burns in GMERS Medical College and Hospital, Dharpur-Patan

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Abstract

Fire, one of the pure elements forming the world and one of the elements to provide life energy to all living beings, sometimes turns deadly. In Forensic Medicine departments, one of the most common cases for post mortem examinations is Burns case. But it becomes difficult many a times to comment on the manner of death in cases with a brief survival period. So, the currentretrospective study was undertaken at Mortuary complex of GMERS Medical college,Dharpur-Patan, Gujarat during the period from 1st Jan 2016 to 31stDec 2017.

Keywords - *Burns, Epidemiology, Survival period.*

Introduction

Fire, one of the pure elements forming the world and one of the elements to provide life energy to all living beings, sometimes turns deadly. And so some authors have called it a "necessary evil" for society. Amongst the various cases of Post mortem Examinations, Burns remains one of the mostcommon, yet most perplexing cases.

One of the reasons for such high number of cases is easy availability of the materials for causing burns and that is also one of the common reasons for getting higher number of female cases than males.It is quite common for not being able to give exact manner of death, survival period, if any, adds to the confusion of whether death may have been prevented by some superior treatment or not?

So, the present data was collected at Mortuary complex of GMERS Medical college,Dharpur-Patan, Gujarat during the period from 1st Jan 2016 to 31stDec 2017to gain insight of the parameters related with burns cases.

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Material & Method

From all dead bodies coming for Post-mortem examination at the mortuary complex of GMERS Medical college,Dharpur-Patan, Gujarat during the period from 1st Jan 2016 to 31stDec 2017, cases with history burns were selected. In this retrospective study 110 such cases were taken.

Inclusion Criteria:

1. All deaths with history of Burns.

2. All cases with history of Electrocution, where cause of death is Burns.

Exclusion criteria:-

1. Cases not satisfying above criteria.

2. Undetermined causes (Negative autopsy)

Collection of data :

Each burns case has been studied in detail using specific proforma, The primary data in each case were collected from different sources such as Inquest reports, In case of hospitalized victims, indoor notes were noted & The autopsy reports. All data collected from different sources were recorded in specially designed proforma for each case for further collective evaluation.

Results

From all dead bodies coming for Post-mortem examination at the mortuary complex of GMERS Medical college,Dharpur-Patan, Gujarat, cases with history of burns were selected. In this retrospective study 110 such cases out of total autopsies during a 2 years period i.e. from 1st January 2016 to 31st December 2017 were taken andwe got results as under –

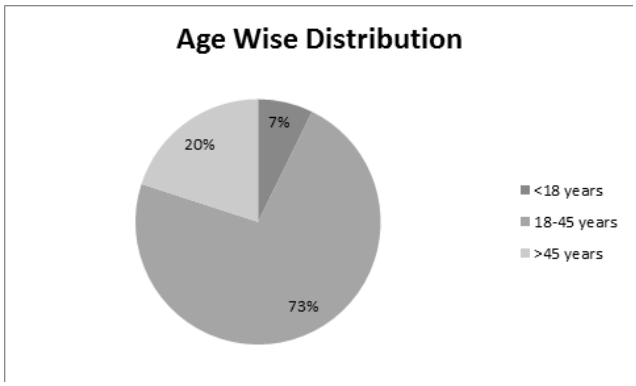

Fig.1 Age Wise Distribution

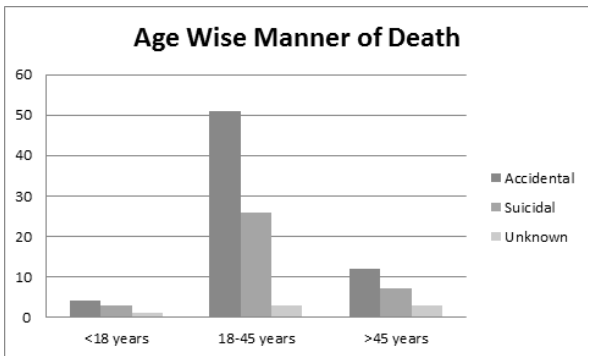

Fig.2 Age Wise Manner of Death

Here, it must be noted that no case of Homicidal Burns was noted. And amongst the Younger age group of < 18 years, 3 cases were detected to be suicidal nature, and 4 cases were to be accidental and 1was of unknown in nature. However majority of the cases 80 were in the age group of 18-45 years and 22 cases were of more than 45 years age.

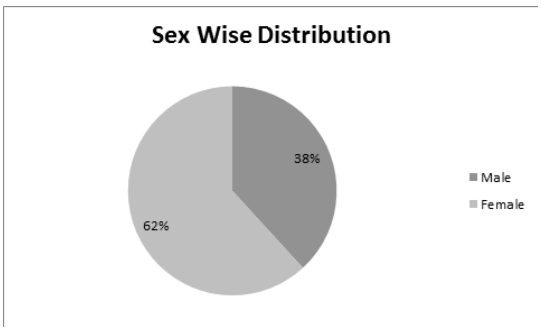

Fig.3 Sex Wise Distribution

Fig.4 Sex Wise Manner of Death

Among the all cases there were 68 female and 42 male. In both the sexes accidental burns are highest followed by suicidal in nature.

- Religion wise distribution

Of Total 110 cases, 107(97.2%) cases were of Hindu and 3 (2.7%) cases of Muslims were encountered.

- Locality of the victims

Of Total 110 cases, 23 deceased were from urban area, 87 deceased were in rural area.

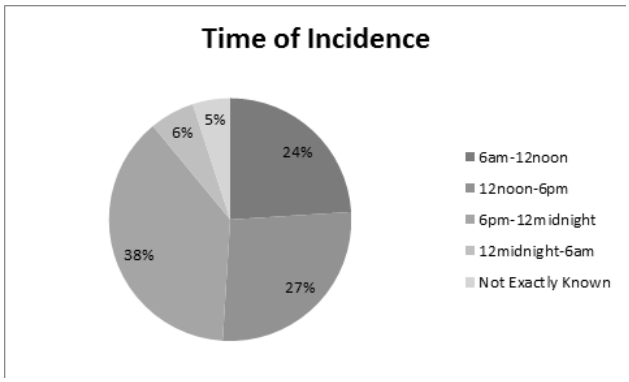

Fig.5 Time of Incidence

- Time of Incidence

Maximum number of incidence occurred between 6pm to 12midnight, probably when everyone is out for their work.

- Place of Incidence: Of Total 110 cases, 107 incidences were in Home, 2 incidences were in Work place, 1incidencewas in Public places.

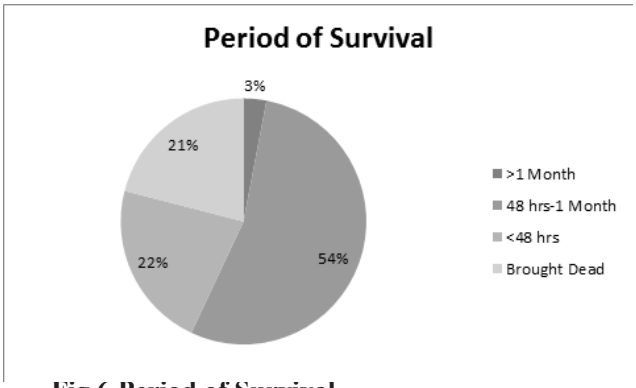

Fig.6 Period of Survival

- Period of Survival: Out of 110 cases - 23 werebrought dead - died almost immediately followingincident. Out of 87 cases that reached Hospital - 3

cases survived for more than a month, 59 survived for more than 48 hours, 25 cases survived for <48 hours.

Discusion

Fire, being a daily use thing, it is one of the "necessary evils" to the society, and we cannot get rid of Fire. Being easily available, it is notorious for its use for Suicide and also being in common use, Accidents also happen commonly with fire. Findings of our study were compared with the earlier studies.

In current study, Females (62%) outnumber the Male(38%) victims. While earlier studies show contrast results than our study & Middle age group - 18 to 45 years form the majority of cases (72%), which is similar to other studies. Here, it must be noted that no case of Homicidal Burns was noted. And amongst the Younger age group of < 18 years, 3 cases were detected to be suicidal nature, and 4 cases were to be accidental and 1 was of unknown in nature and among the middle age group, the females outnumber the male victims. In Females - 61% cases were Accidental and in Males - 59% cases were accidental which is in contrast of the findings of earlier researchers thatburns is a preferred method of suicide in Females.

As per, Vaghela Prithviraj et al, Maximum incidence (82.26%) seen in females. Most of the victims (42.09%) were in the age group of 21-30 years which supports our study. Most burns were domestic, in low socio-economic class and in house-wives. 74.57% of cases were accidental in nature as per reports[1] which supports our study. Similarly, in an earlier study, Chawla et al had observed 64% cases belonging to females and 52% cases were in the Age group of 21-30 years.[2,3] In Haralkar et al, More than half were in the age group between 21 and 40 years. More than two third were females. Rural patients outnumbered urban patients. Majority of patients were unemployed and among unemployed majority of patients were housewives which supports our study. 40% patients were literate. 79.33% of burns were accidental. 36% patients had hospital stay less than one day. Among 450 cases, 65.78% died, 16.44% were discharged against medical advice.[4] As per earlier studies, the majority of the victims are women and of them, married outnumber the rest by a great margin[6,7] and a huge chunk of these incidents get labeled as "Kitchen Accidents".[9] Burns are the only unnatural cause of death in India in which females outnumber males by a large margin.[10] In earlier study Tanna JA et al of Total 122, 21 deceased were from urban area, 100 deceased were in Rural area.Males (58%) outnumber the female (42%) victims which is in contrast to our study and 18 to 45 years form the majority of cases (65%), which is similar to our study.[8]

In our study, Of Total 110, 107 cases Hindu, 3 cases of Muslims were encountered; this corresponds to the earlier study, as the population itself consists of majority of Hindu in the study region. Of Total 110 cases, 23 deceased were from urban area, 87 deceased were in rural area corresponding with the earlier studies. As per, Harish D. et al, Maximum victims were Hindus, followed by Sikhs and the least number were Muslims. Eighty percent of the male -victims were in service – either government or in private as compared to 15% females. Of the married female victims, 84% were housewives. Eighty one percent of deaths due to burns were accidental in nature and there was not much difference in the deaths alleged to be accidental, between the 2 genders; however, in case of suicidal & homicidal burns, females far outnumbered males.[5]

In our study, Maximum number of incidence (38%) occurred between 6pm to 12midnight in evening, probably when everyone is out for their work. Followed by, 12noon to 6pm (27%) and 6am to 12noon - (24%) again when everyone else is out for their own work. Place of Incidence - Of Total 110 cases, 107 incidences were in Home, 2 incidences were in Work place, 1 incidence was in Public places.

In Haralkar et al, Maximum number of burns occurred between 5pm and 11 pm. Majority of burns

(97.56%) took place at home.[4] In, Harish D. et al, Kitchen was the most common place of occurrence, accounting for overall 76% deaths. In the case of males, about 1/3rd, incidence of fires occurred outside their homes, while in females, it was just 5%. Kerosene/ kerosene stove and the other sources of fire in the household for cooking purposes were the predominant cause of the victims catching fires.[5]

In our study**,** Out of 110 cases - 23 werebrought dead - died almost immediately following incident. Out of 87 cases that reached Hospital - 3 cases survived for more than a month, 59 survived for more than 48 hours, 25 cases survived for <48 hours.

Conclusion

So, in two years study of Burns cases in Dharpur-Patan (North Gujarat) region of Gujarat, It was found that Females outnumber the Males and most of the female cases were accidental. And in males too there were accidental cases followed by suicidal. Even young adults of 16 and 17 year age were found to commit suicide by burns. Period of survival following burns is one area, which needs further research.

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Statement of Human and Animal Rights – No ethical issue involve.

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