Original Research Paper

Volume-8 | Issue-9 | September-2018 | PRINT ISSN No 2249-555X

Forensic Medicine

A STUDY OF DEMOGRAPHIC DATA IN ELECTROCUTION DEATHS IN KAMRUP, ASSAM

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ABSTRACT Electrical injuries are responsible for considerable morbidity and mortality in our country especially in our regions. The present study has been carried out to study the incidence of electrocution deaths in Kamrup, Assam and study the demographic data of the victims. Cases were collected from autopsy cases in Department of Forensic Medicine, GMCH. Total number of cases was 36. Most of the cases were male. The most commonly involved age group was 31-40 followed by 21-30 years. Most of the cases occurred in the summer season and caused by high tension wires. The morbidity and mortality can be reduced by educating the people and the use of protective measures must be made compulsory to the workers especially employees of electric department.

KEYWORDS : Electrocution, Kamrup, Males, Summer

INTRODUCTION

One of the marvels of the modern society has been the invention and use of electricity. A day without electricity is difficult to comprehend for all and can put the workings of a country to a standstill. In this viewpoint deaths due to electrocution hold a special regard, as use of electricity is not going to diminish in the near future. Electrical injuries are responsible for considerable morbidity and mortality in developed countries, even with significant improvement in product safety[1] and implementation of rules and regulations. In low income countries electrocution deaths are emerging into a public health problem because of lack of awareness and poor safety issues.[2] Indian national data on accidental deaths and suicides for calendar year 2010 & 2011 has reported 9059 & 8945 electrocution deaths respectively, with a share of 2.4% of total accidental deaths.[3] Almost every electrocution death is an accidental one, but very rarely it is either suicidal or homicidal.4 Hence, the present study has been carried out to study the incidence of electrocution deaths in Kamrup, Assam and study the demographic data of the victims.

MATERIALS AND METHODS

This retrospective study was carried out in the Department of Forensic Medicine, Gauhati Medical College and Hospital during a period of 1 year, extending from 1st June 2017 to 31st May 2018. Analysis of the medico legal reports of electrocution cases brought for autopsy have been carried out as regards the history of the cases, police papers, and post-mortem examination findings. The findings were recorded in proformas and analyzed.

OBSERVATION AND RESULTS

Total number of cases was 36, which constituted 1.13% of cases of the total 3184 cases autopsied.

Most of the cases were male with 25 cases and only 11 cases were female.

The most commonly involved age group was 31-40 followed by 21-30 years

TABLE 1 showing age distribution of victims of electrocution

Age	Number of cases	Percentage
0-10	1	2.77
11-20	6	16.66
21-30	9	25
31-40	14	38.89
41-50	2	5.55
51-60	3	8.33
Above 60	1	2.77

TABLE 2 showing place of occurrence of electrocution

Place of occurrence	Number of cases	Percentage
Home	12	33.33
Outside home	8	22.22
Work	16	44.44

Most of the cases occurred outside home or in the work place. The affected victims were mostly workers and persons who were working in farms and water pump operators

Seasonal variation in cases was noted with highest number of cases in monsoon followed by the summer season.

TABLE 3 showing seasonal variation of cases of electrocution

Season	Number of cases	Percentage
Summer	15	41.66
Monsoon	18	50
Winter	3	8.33

Causative agent are mostly high tension wires and exposed electric cables

TABLE 4 showing the causative agent of electrocution

Causative agent	Number of cases	Percentage
Exposed cable	11	30.55
High tension wire	14	38.89
Water pump	3	8.33
Inverter	3	8.33
Household appliances	5	13.89

DISCUSSION

It is noticed that there is a low frequency of electrocution deaths (1.13%) in this region compared to the other studies conducted in various parts of India and abroad (1.9 to 3.3%).[5,6,7,8] The frequency of electrocution fatalities in each territory depends upon multiple factors like weather non-uniformity, education status & awareness of electrocution in general public, safety measures adopted by the public and also rules and regulations followed by the government.

Males constitute the majority of the cases, which is in consistence with the findings of other workers.[9,10,11] This male predominance is attributed to more association of males with electrical appliances and repair of electrical appliances more than their female counterparts.

The adults of second to fourth decade are in a vulnerable position to electrocution deaths, but these incidents were rare in extremes of ages. The age findings of the present study are in more congruous with Rautji work (21-40 years). [5]

Higher incidents of electrocution deaths during summer may be due to increased humidity and high usage of electric appliances, and these findings are in consistent with Tirasci study.[8]

Adult males are more often actively engaged in electricity dependent occupations, either at their workplace or home during their second to fourth decades, hence they are prone to electrocution hazards. The study findings are consistent with other findings. Poor maintenance of the electric cables in this part of the country starting from using of bad quality wire, breakage, which may remain unattended on the road side may be the cause of accidental electrocution outdoors. The causative

agents are mostly the same in the other studies.

CONCLUSION

Electrocution can be prevented by educating people about the equipments, precaution to be taken while working with electrical equipments, replacing old electrical installations with new one, use of protective measures like gloves and harness to avoid fatal electrocution. Electrocution is occupation related death as work place is common place of occurrence. The morbidity and mortality can be reduced by educating the people and the use of protective measures must be made compulsory to the workers especially employees of electric department.

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