

Retrospective Study of Snake Bite Cases Autopsied at Government Chengalpattu Medical College and Hospital

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Abstract

Background: Snake bite is an underestimated cause of accidental deaths in India. This hospital based post-mortem study has been carried out at Government Chengalpattu Medical college and Hospital during the year 2021 (1 year). Total of 1437 autopsies were conducted in the mortuary of Chengalpattu medical college and hospital during this period. Out of total 1437 cases of post mortem examinations, 229 poisoning cases noted and out of 229 poisoning cases, Snake bite was observed in 39 (2.71%) cases. Total 27 (69.23%) males and 12 (30.77%) females died due to snake bite. Maximum cases were observed in 11 – 30 years of age group and were 17 (43.59%). The male to female ratio was 2.25:1. Maximum number of deaths belong to rural area, comprising of 31 (79.49%) out of 39, while 8 (20.51%) deaths were belonged to urban area. Maximum deaths are occurred between 6 to 24 hours (46.15%) from bite. The need to educate the public about hazards of snake bite, early hospital referral and treatment.

Keywords: Snake bite, Cobra, Krait, Viper, Chengalpattu.

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Introduction

Snake bite is an important and serious medico legal problem in many parts of the world, especially in India. On an average, nearly 2,00,000 persons fall prey to snake bite per year in India and 35,000 to 50,000 of them die every year [2].

In India, there are 216 species found out of which, 52 species are poisonous. The poisonous families are Colubridae (Elapidae, Crotalidae, Hydrophidae) and Viperidae. In India commonest poisonous snakes are: The cobra, The king cobra, The banded krait, Russell's viper, The saw scaled viper [3,4].

Snake bite is generally considered to be a rural problem and linked with environmental & occupational conditions. Most houses in the rural areas of India are made up of mud and have many crevices where rodent flourish. Snakes are likely to approach residential areas when

attracted by prey, such as mice & frogs. Major occupation in Chengalpattu region is farming with majority of population living in rural areas.

Morbidity & mortality from snake bite depend upon the species of snake, delay between bite & treatment. A detailed knowledge about the nature and magnitude of the Snake bite cases in a particular area is not only important for early diagnosis and prompt treatment but also it may help to form policies. Snake bite Toxaemia in Chengalpattu region has not been studied before this study. Therefore, present study was undertaken to study epidemiological aspects, pattern, mortality and other significant features of Snake bite.

Aims And Objectives

To study the prevalence of Snake bite deaths, prevalence in different age groups, according to gender, according to, time of poisoning and time of death, etc. in Chengalpattu region.

Material And Methods

This was a hospital-based post mortem study has been carried out at Government Chengalpattu Medical College during the period of one year. This institute is a referral centre for whole of Chengalpattu, Maamallapuram, Madhuranthagam, Melmaruvathur, Kancheepuram and Maraimalainagar region and acts as an apex referral institution. Proforma of questionnaire was designed after going through the literature available and consulting experts. In case of death of admitted Snake bite patient, post mortem examination was done. These cases are included in the present Post mortem study. The deaths occurred in private hospital due to Snake bite & then brought for PM examination and brought dead cases of snake bites are also included in this study. All the cases suspected of Snake bite by Physicians, Police or suspected at the time of post mortem examination are also included in the present study. Total 1437 autopsies were conducted in the mortuary of Chengalpattu medical college and hospital during this period, out of total 1437 cases of post mortem examination, Snake bite was observed in 39 cases. Relevant history was obtained from relatives of the deceased or the investigating police officer.

Observations And Results

1. Out of 39 cases a total of 27 (69.23%) males and 12 (30.77%) females died due to snakebite. The male to female ratio was 2.25:1.(Fig 01)
2. In the present study maximum numbers of cases were observed in age group 21 - 30, 09 cases (23.04%) followed by 11 - 20 years 08 cases (20.48%). least prevalence was found in the age group of 61 - 70 years & 71 - 80 years, 03 case (07.68%) each. In 0 – 10, 31 - 40, 41 – 50 and 51 – 60 years, 04 cases (10.24%) each. Maximum cases are observed in 11 - 30 years age group and are 17 (43.59%). Maximum cases of male found in 21 - 30 years and maximum cases female found in 11 – 20 and 21 - 40 years.(Table 01 with bar chart)
3. Maximum number of deaths belong to rural area, comprising of 31 (79.49%) out of 39, while 8 (20.51%) deaths were belonged to urban area. It is seen that snakebite is common in rural area than urban area.
4. Maximum number of deaths occurs after 6 to 24 hours (46.15%). Within first 24 hours alone 27(69.65%) deaths were observed.

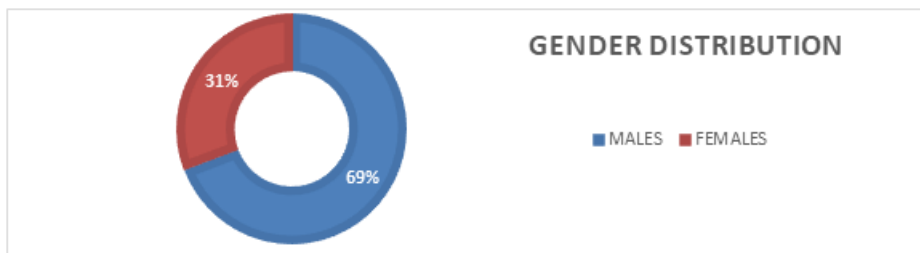


Figure 1: Distribution of Snake Bite cases according to Gender

Table 1: Distribution of Snake Bite cases according to Age

AGE GROUP (IN YEAR)	MALES		FEMALES		TOTAL	
	Cases	%	Cases	%	Cases	%
0-10	03	07.68%	01	02.56%	04	10.24%
11-20	05	12.80%	03	07.68%	08	20.48%
21-30	06	15.36%	03	07.68%	09	23.04%
31-40	03	07.68%	01	02.56%	04	10.24%
41-50	02	05.12%	02	05.12%	04	10.24%
51-60	04	10.24%	00	00.00%	04	10.24%
61-70	02	05.12%	01	02.56%	03	07.68%
71-80	02	05.12%	01	02.56%	03	07.68%
TOTAL	27	69.23%	12	30.77%	39	100%

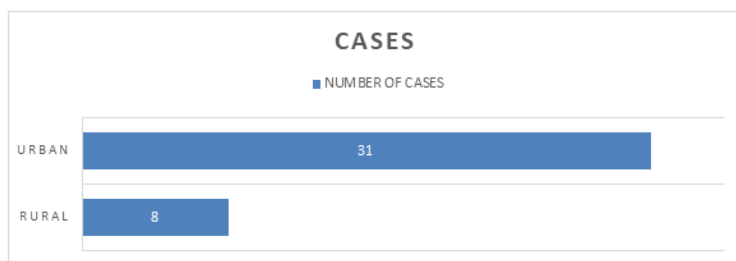
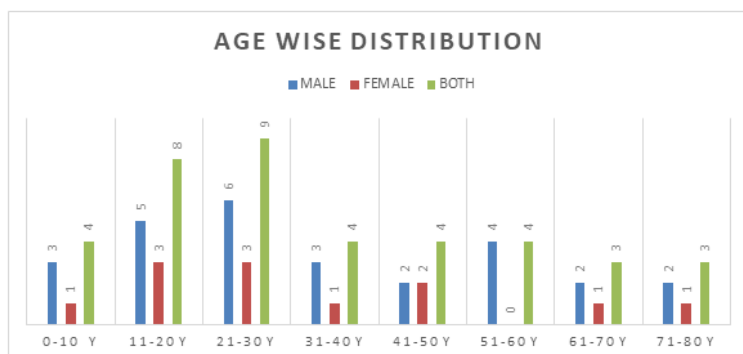


Figure 2: Distribution of Snake Bite cases according to area of residence

Table 2: Distribution of Snake Bite cases according to time of poisoning and time of death

TIME OF DEATH SINCE THE BITE (IN HOURS)	NUMBER OF CASES	%
<6	09	23.08 %
6-24	18	46.15 %
24-48	07	17.95 %
>48	05	12.82 %
TOTAL	39	100 %

Discussion

Table 3: Comparisons of snake bite poisoning cases:

Study/Author	Age Group	M:F	Area
Manigandan G et al [1]		1.5:1	-
Ganneru Brunda et al [2]	21-50	3:1	--
V Yogiraj et al [5]	13-40	1.5:1	Rural
Joshi Subhash et al [6]	21-30	1.62:1	
Gopal Shankar sahani [7]	-	2:1	Rural
Jasjitsingh et al [13]	18-38	-	-
Sandip Bhelkar et al [14]	Mean age 37.78 yrs.	-	Urban
I. F. Inamdar et al [15]	16-45	2:1	Rural
R.C. Kirte et al. [16]	21-40	2.2:1	Rural
VP Poudyal et al. [17]	15-45	-	-
M. Rajeshkumar et al. [18]	Mean age 38.14 yrs.	-	Rural
Sharma N et al [19]		4.25:1	Rural
Kiran Nagaraju et al [21]	30-39		Rural
Present study	11-30	2.25:1	Rural

Snake venom is probably the oldest known poison to mankind [1]. Snake bite is an important and serious health problem remains an underestimated cause of accidental deaths in modern India [5,6]. Snake bite is one of the important causes of occupational hazard in our country [7]. Despite tremendous progress, snakebite continues to be one of the major causes of morbidity and mortality in India. In India, Swaroop reported about 200,000 bites and 15,000 deaths in India due to snake bite poisoning as far back as 1954 [8,9]. Based on an epidemiological survey of 26 villages with a total population of nearly 19,000 individuals in Burdwan district of West Bengal state in India, Hati et al worked out an annual prevalence of 0.16% and mortality rate of 0.016% per year [10]. Mortality rate in present study is 2.50 %. Mortality rate in study conducted by V Yogiraj et al was 2.62 % [5]. In the present study out of total 1437 autopsies 229 cases (15.91%) of various poisoning including snake bite were noted. Comparison between different studies on cases of poisoning including snake bite brought for post-mortem is difficult because of pattern of poisoning in different in various

regions of India... From the study of various authors more prevalence of snake bites seen in rural area. The table indicates maximum snake bite victims mostly seen in 15-40 years of age group [2,5,6,11,12,13,14,15,16,17 & 18]. In present study also, maximum victims seen in age group of 0-40 years in males and 21 – 30 in females. 15-40 years age group is most active working group engaged with field & all type of work related to farm & outside the home for earning.... Snake bite is more common among the male than female & ratio in present study is 2.2.5:1 & in most other studies also male: female ratio is around 2:1 [1, 5, 6, 11, 12, 15, 16] except Ganneru Brunda et al [2], Sharma N et al [19] & Mulay D.V et al [20] where M: F ratio was 3:1, 4.25:1 & 3.2:1 respectively. As mentioned above snake bite common among 15-45 years of age which age group of responsible people of family. It was reported

Conclusion

In the present study most of the deaths are occurred during 6 to 24 hours. Most author also reported same pattern. Majority of patient could not reach the hospital in time because of lack of transport facilities and inability to afford transportation. Death was common among the patients who did not receive first aid measure. The importance of immediate specific treatment, and hence the need to strengthen our peripheral health centres is paramount to reduce mortality due to snake bite. Ready availability and appropriate use of anti-snake venom, close monitoring of patient, and timely institution of ventilator support help in reducing the mortality.

Recommendation

1. Use lamp at night time
2. Do not walk bare foot in the field, use above ankle boot.
3. Early transportation of the cases to the nearest hospital
4. Timely diagnosis
5. Availability of ASV & Trained Non-Medical Staff.
6. Early administration of ASV

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