PATTERN OF SNAKE BITE CASES ADMITTED AND AUTOPSIED AT DISTRICT AND TEACHING HOSPITAL OF NORTH KARNATAKA

* Dr. Vinay. B. Shetty ** Dr. Gurudatta .S. Pawar *** Dr. E. S. Goudar **** Dr.Hanumantha

Abstract

Poisoning is a major problem all over the world, though the type of poison and the associated morbidity and mortality varies from place to place and changes over a period of time. Cases of snake bite are increasing day by day due to encroachment of their habitat by humans, in the form of residential layouts, resorts, agriculture, factories, mines etc. This is resulting in confrontation of human with the wild animals causing morbidity and mortality in the form of loss of life and limbs. It is very essential that we must know the profile of these unfortunate victims so as to enable the concerned authorities to resolve the glitches in the medical, medico legal, preventive and therapeutic aspects of the poisoning.

The present study is a prospective study conducted in District and Al - Ameen Medical college hospitals of Bijapur (North-Karnataka) during 2004-2005. All cases were analyzed with an objective of knowing the most vulnerable age group, sex variations, manner of poisoning, site of bite, occupation of the victims, urban and rural trends etc. Amongst the 54 cases autopsied, male (75.93%) predominated females (24.07%) with majority (53.70%)belonging to 21-30 yrs age group. Lower limbs (72.22%). were the commonest sites of bite than the upper limbs. Rural population was (96.30%) more affected than the urban (3.70%) . All the reported cases of snake bites were accidental in nature.

Key words: Snake bite, accident, poisoning , morbidity , mortality.

Introduction

Poisoning forms a major problem all over the world, though the type of poison, the associated morbidity and mortality varies from place to place and changes over a period of time[1]. In India every year around 2 lakh people are bitten by the snakes, out of which around 15000 die every year [2].Approximately 6000 – 8000 venomous snake bites per year in U.S. and many thousands more from non venomous species. Mortality from snake bites is quite rare in U S ,estimates ranging from 5 -15 per year[3]. Dr. Patrick Russell the "Father of Indian ophiology, who gave the earliest references to Indian snakes, the credit for distinguishing the venous from non venous snakes goes to him. It was he who focused attention on the viper, which was appropriately named after him[4].

During the last three decades, the study on pattern of poisoning cases has become an important subject for the forensic pathologists and the toxicologist worldwide. Myanmar seems to have highest mortality in Asia and 70% of the bites are by Russell's viper. Maharashtra has highest incidence of snake bite , reported 70 bites/100,000 population and mortality of 2.4 / 100,000 per year[5].The aim of the present study was to collect authenticated data of the snake bite poisoning cases and analyze them in all respects. These kinds of data are in turn helpful for the concerned authorities to look for solutions to the problem and evolve necessary steps to reduce or prevent them.

*Asst.Professor ,BIMS, Bidar
**Prof& H O D, Chennai Medical College, Trichy [T N]
***Prof & H O D ,Al-Ameen Medical College, Bijapur.
****Asst.Prof. Chennai Medical College, Trichy [T N]

Materials and methods

Study design- Descriptive

Study period- 01-11-2004 to 31-10-2005

Study Method- A total of 54 of Snake bite poisoning cases admitted and autopsied at District hospital & Al-Ameen medical College Hospital, Bijapur (North Karnataka) were analyzed.

The victims were studied from the time of OPD admission to wards and followed up till recovery or death. Data were collected in a format, from the history given by the patient, hospital records, police inquest reports, post mortem reports, FSL reports and also personal interview with the concerned relatives. The emphasis was on the age, sex, rural / urban, type of poison and manner of poisoning. All data was documented and statistically analyzed.

Results

Out of 229 cases of poisoning admitted and autopsied in District and Al-Ameen Hospital Bijapur during 1st November 2004 to 31st October 2005 , the snake bites cases were 54 (23.58%).

Among 54 cases studied the commonest type (Table No.1) of snake bite was due to Non-Poisonous snakes (75.93%) and 13 cases were due to Poisonous snakes (24.07%.). Majority of the of the victims belonged to the age group 21-30yrs (35.19%) (Table No.02) and were residents of (in and around) Bijapur.). Majority of the victims were males (75.93%) (Table No.3) .

Occupation wise (Table No 4) agricultural farmers topped the list 42 (77.78%). All the cases of snake bite (Table No.5) were accidental both in male (34) and female (20). Not a single case of homicidal or suicidal poisoning was observed in our study. Most of the victims belonged to rural area i.e. 52 (96.30%) compared to urban area (Table No.6).Most common site of bite (Table No.7) was seen in lower limbs 39 (72.22) followed by upper limb 14 (25.93). Only one case involving other body part was observed in the present study.

Discussion

Due to fast industrialization and urbanization the wild animals are losing their habitat and their feeding zone. When humans try to encroach their space it is natural that either they resist, harm or move away to another place. This confrontation will result in human fatalities in the form of snake bites or animal bites etc.

Out of 229 cases of poisoning admitted in Civil and Al-Ameen Hospital Bijapur during 1st November 2004 to 31st October 2005, the cases snake bites amounted for 54 (23.58%). The total number of hospital admissions during this period was 1684.

A similar study was conducted by Benerjee and Siddiqui[6]. Their incidence was 133 per 100, 000 patients. Higher incidence seen in our study may be due to the vast agricultural lands and the reservoirs in and around city of Bijapur are being converted for either domestic or developmental purposes. These places remained untouched for many years and were safe places for these animals. When humans try to enter these areas they sustain the resistance and the injuries.

It was observed in the present study that 75.93% of the total bites were due to non poisonous snakes, while 24.07% of the cases were by poisonous snakes. This is consistent with the studies conducted by other workers[6,7,8]. The incidence and type of snake bite may vary in different regions of the country according to the prevalent species of snake.

Maximum numbers of victims were between the age group 21 and 40 years (53.70%).

More than 50% of the cases were between 11-40 years age groups. Similar observation was made in other studies.

Males (62.96%) are more affected than the females (37.04%), 55.88% and 45% in age group 21-40 years respectively. A similar observation was made by Banerjee R.N, Siddiqui Z.A[6]. The higher incidence among males indicates that snake bites are more common in the active age and section of the population, who are the bread winners of the family.

In the present study 77.78% of the victims were farmers and labourers who work in out fields and majority (96.3%) belonging to the rural area. This is a high risk group due to their outdoor activities with frequent exposure to the dwelling of the reptiles. This is consistent with similar studies conducted in other parts of the country.

Snake bites are generally accidental, rarely homicidal and still rarely suicidal.[9]In the present study also all the cases examined were that of accidental snake bites. Not a single case was reported as homicidal or suicidal snake bite in our study similar to the other studies.

Present study shows that the maximum number of bites (72.22%) were located in lower extremities, while the involvement of upper extremities was 25.93%. This suggests that the site of bite was predominantly determined by accidental or inadvertent contact of the reptiles during the outdoor activities. Similar observations were made by Sawai et al[7] in their study.

Conclusion

Out of total 1684 cases, 229 poisoning cases were admitted and autopsied in Civil and Al-Ameen Hospital Bijapur were studied for the various parameters .The incidence of snake bites was 13.60%. The present study clearly highlights the profile of snake bite poisoning in North Karnataka area, showing that the males of 21-30 yrs age group are the major victims. It also points out that ,the commonest victims are agricultural farmers of rural area belonging to lower socio-economic strata with majority beaten at their lower limbs. The morbidity & mortality due to poisoning can be possibly curtailed by following means:

- Educating the risk group regarding the safety measures.
- Good treatment facilities (i.e. antidotes and antivenoms etc) at rural areas like P H C's & P H U's.
- Establishing Poison Information Centers.
- Proper & correct implementation of social & economic projects aimed for upliftment of the Rural poor & downtrodden.

References

1) Sharma B.R, Harish Dassari, Sharma Vivek , Vij Krishan, Poisoning in northern India: Changing trends, causes and prevention thereof, Med Sci. Law 2002; 42(3), 251-255.

2) Sharma R K ;Concise Text book of Forensic Medicine and Toxicology ,Elsevier ,New Delhi.2nd Ed.2008;276.

3) Robert Hoffman et al .Goldfrank's Manual Of Toxicological Emergencies ,McGraw – Hill companies.inc. U S.8th edition, 2006; 923 - 936.

4) Russel Patrick, An Account of Indian serpents collected on the coastal of Coramendel containing description and drawings of each species, together with experiments and remarks on their several poisons, 1976, London; 90 and 44 colored P/S.

5) Dikshit.P C.Text Book of Forensic Medicine and Toxicology. Peepee publishers & distributors (p) ltd.New Delhi.1st Ed.2007 ;495.

6) Benerjee R.N and Siddiqui ZA, Epidemiological study of snake bite in India, procedings of 5th international symposium on animal, plant and microbial toxins . 1974

7) Sawai Y., Yomma M., Snake bites in India, Publication of the Japan Snake institute Tokyo;1975, vol-7.

8) Gautam Biswas .Review of Forensic Medicine and Toxicology. Jaypee Brothers Medical Publishers (p) Ltd. New Delhi,1st Ed.2010;379.

9) Parikh. C .K , Parikh's Textbook of Medical Jurisprudence Forensic Medicine nad Toxicology .C B S Publishers and Distributors, New Delhi, 6 th Ed. 2008 ; 9.49.

Table -1 Type of snake site

Type	Cases	Percentage
Non Poisonous	41	75.93
Poisonous	13	24.07
Total	**54**	**100.00**

Table-2 Age group distribution of the cases

Age	No of patients	Percentage
0-10	8	14.80
11-20	9	16.67
21-30	19	35.19
31-40	10	18.52
41-50	3	5.56
51-60	2	3.70
61 and Above	3	5.56
Total	**54**	**100.00**

Table-3 Sex wise distribution of the cases

Age	Males		Females	
	No	%	No	%
0-10	6	17.65	2	10.00
11-20.	4	11.76	5	25.00
21-30.	11	32.35	8	40.00
31-40.	8	23.53	2	10.00
41-50.	2	5.88	1	5.00
51-60.	1	2.94	1	5.00
61 and Above	2	5.88	1	5.00
Total	**34**	**100.00**	**20**	**100.00**

Table -4 Occupation of the victims

	No of patients	Percentage
Farmers/Labourer	42	77.78
Others	12	22.22
Total	**54**	**100**

Table-5 Manner of snake bite

Manner	Males		Females	
	No	%	No	%
Accidental	34	100.00	20	100.00
Homicidal	0	0.00	0	0.00
Suicidal	0	0.00	0	0.00
Total	**34**	**100.00**	**20**	**100.00**

Table- 6 Urban and rural distribution

Areas	No of patients	Percentage
Urban	2	3.70
Rural	52	96.30
Total	**54**	**100.00**

Table -7 Site of snake bite

Areas	No of patients	Percentage
Lower limbs	39	72.22
Upper limbs	14	25.93
Other	1	1.85
Total	**54**	**100**