A Study of Pattern of Snake-Bite Cases Admitted to Hospitals in Bagalkot

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Abstract

Objectives: The present study was under taken to know the Sociodemographic profile of snake bite victims. **Methods:** This is a Hospital based case series study which included snake bite cases of both sex groups and all age groups who presented with history of snake bite or history of unknown bite with clinical features suggestive of snake bite admitted to HSK Hospital and all private Hospitals of Bagalkot city in one year duration from 15th April 2010 to 14th April 2011. **Results:** Of the 75 cases, maximum victims were males 61.4%. Maximum 60% victims belonged to 20-49 yrs age group. There was a statistically significant difference in the occurrence of cases in the age group of 20-49yrs and also among males of the same age group. Majority of victim 93.3% belonged to rural region which was statistically significant and 60% of the victims were farmers by occupation. Most of the bites 60% occurred in fields. Bites were more 37.3% between 12.01PM to 6PM and during monsoon season 60.1%. Most common site of bite was foot 45.3%. Krait was the most commonly identified snake and most of its bites were between 12.01AM to 6AM.

Keywords: *Snake bite; Sociodemographic profile; Krait, season.*

Introduction

Snake bite is an important socio-economic and medico-legal problem. It is an occupational hazard in many parts of the world especially in South Asian tropical countries such as India. In developed countries the frequency of snake bites is increasing amongst those who unlawfully keep snakes as pets. Whereas hazardous snake bites occur mainly in developing countries especially among rural population active in agricultural works, laborers, herders, professional snake handlers, trekkers, snake charmers and fishermen.1

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Aims and Objectives

To know the Sociodemographic profile of snake bite cases referred to Hospitals in Bagalkot city.

Methodology

Study design:

The study was a hospital based case series study conducted for duration of one year from 15th April 2010 to 14th April 2011. The subjects for the study comprised all of 75 patients of snake bite admitted to HSK hospital and other private Hospitals in Bagalkot city namely Kerudi Hospital, Daddenavar Hospital and Subhash Patil Hospital.

Source of data:

The data for this study was collected from following records and/or format.

1) In-patient case records of snake bite victims.

2) Proforma which was designed to collect information regarding the incidence.

3) Police inquest and post mortem reports in cases where death occurred.

Inclusion criteria:

1) The study includes cases of snake bite of both sex groups of all ages with history of snake bite.

2) Cases with history of unknown bite responding to ASV.

3) Cases with no history of snake bite but presenting with symptoms of snake bite and responding to ASV treatment.

4) Snake bite cases admitted to Shri Kumareshwara Hospital, Kerudi Hospital Daddenavar Hospital and Subhash Patil hospital of Bagalkot city irrespective of their native place.

Exclusion criteria: Cases of unknown bite not responding to ASV management were excluded from the study.

Method of collection of data:

A proforma was designed to collect relevant information regarding the incident, the snake (if seen), first aid measures taken and sociodemographic profile from the patient and/or relatives. All the data thus collected was tabulated and analysed statistically with SPSS (17.0 version) and Epi Info softwares.

Discussion

Age and Sex

In the present study, maximum victims 60% belonged to 20 – 49 yrs age group. Among 46 males and 29 females, 67.39% and 48.27% victims belonged to 20- 49 yrs age group respectively. In both the sex groups, a statistically significant difference was found in occurrence of snake bite among 20– 49 yrs age group.

Of both the sex groups, males were predominant 61.3% as compared to females 38.7%, with male to female ratio of 1.6:1.

Similar observations were made in studies conducted by Kulkarni ML & Anees S (1994)[11] in Karnataka, Ganneru B & Sasidhar RB (2007)[15] in Andra Pradesh and Suchitra N et al. (2008)[17] in Kerala.

This observation is not consistent with the findings recorded in the study conducted by Monterio NP et al. (2010)[19] in Manipal, where female predominance was recorded with male to female ratio of 1:1.5.

The probable reason for predominance in males and 20-49 yrs age group is increased agricultural activity among these individuals.

Occupation

In present study, maximum victims 60% were farmers by occupation. Among the male victims, majority 63.04% were farmers. Similarly among female victims, majority 55.17% were farmers followed by housewives constituting 31.03%.

The above observations made in the study are consistent with the studies conducted by Lal P et al. (2001)[12] in JIPMER Hospital Pondicherry, Chauhan S et al. (2005)[14] in PGIMER Hospital Chandigarh and Shetty AK & Jirli SP (2010)[20] in Belgaum.

The predominance of farmers can be attributed to increased frequency of human confrontation with snakes in agricultural fields owing to the snakes habits, habitat and prey preferences.

Education

In this study, 46.7% were illiterates and the rest 53.3% were literates having different levels of education. Majority 25.3% had primary education followed by 20% had secondary education and 6.7% had PUC level education. None of the victims were graduates.

The above observation depicts that illiterate victims and victims with non technical (unskilled) education are more involved in agricultural works, hence more exposed to snake bites. The low literacy level also leads to lack of knowledge regarding precautions to be taken to avoid snake bites.

Region

In our study, maximum victims 93.3% belonged to rural region. A statistically significant association was noted between snake bite occurrence and rural region.

This finding is consistent with the observations in the studies made by Kulkarni ML & Anees S (1994)[11] in Karnataka, Ganneru B & Sasidhar RB (2007)[15] in Andra Pradesh, Shetty AK & Jirli SP (2010)[20] in Belgaum and Mohapatra et al. (2011)[4] in India.

Place of Occurrence

In this study, maximum victims 60% had snake bites in the fields followed by 36.1% snake bites at home.

Similar finding was noted in the study conducted by Suchithra N et al. (2008)[17] in Kerela, Monterio NP et al. (2010)[19] in Manipal and Shetty AK & Jirli SP (2010)[20] in Belgaum.

Time of occurrence

In this study, maximum percent 37.3% of snake bites occurred between 12.01PM to 6 PM followed by 32% between 12.01 AM to 6AM.

Similar finding was observed in the study conducted by Bawaskar HS et al. (2008)[16] in rural Maharashtra and Monterio NP et al (2010)[19] in Manipal.

Relationship between Place of occurrence and Time of occurrence of the incident

In this study an effort was made to correlate the place of occurrence and the time of occurrence. Of the 45 bites that occurred in the field, maximum 55.5% occurred during 12.01PM to 6PM. Of the 27 bites that occurred at home, maximum 81.5% bites occurred during 12.01AM to 6AM.

Seasonal variations in the incidence of snake bite

In this study, maximum bites 60.1% occurred during June to September (monsoon season) followed by 24.1% during October to January (winter season).

Similar observations were made in the study conducted by Lal P et al. (2001)[12] in JIPMER Hospital Pondicherry, Bawaskar HS (2002)[13] in Mahad region of Maharashtra, Bawaskar HS et al. (2008)[16] in rural Maharashtra, Shetty AK & Jirli SP (2010)[20] in Belgaum and Mohapatra B et al (2011)[4] in India.

Whitekar R (2005)[7] in his study conducted in Kerala, observed that the month of May had highest incidence of snake bite. However in our study, the highest incidence of snake bite was in the month of July 18.7%.

Table 1 - Age and Sex wise distribution of cases

Age in years	Male		Female		Total	
	n	%	n	%	n	%
0-9 yrs	1	2.17	1	3.45	2	2.7
10-19 yrs	7	15.22	7	24.14	14	18.7
20-29 yrs	13	28.26	5	17.24	18	24
30-39 yrs	11	23.92	5	17.24	16	21.3
40-49 yrs	7	15.22	4	13.79	11	14.7
50-59 yrs	3	6.52	2	6.90	5	6.7
60-69 yrs	3	6.52	5	17.24	8	10.7
> 70 yrs	1	2.17	0	0.00	1	1.3
Total	46	100	29	100	75	100

Table 2 - Occupation and Sex wise distribution of cases

Occupation	Male		Female		Total	
	n	%	N	%	N	%
Farmer/Farm wage workers	29	63.04	16	55.17	45	60
House wife	0	0.00	9	31.03	9	12
Snake charmer	1	2.17	0	0.00	1	1.3
Student	8	17.39	4	13.79	12	16
Others*	8	17.39	0	0.00	8	10.7
Total	46	100	29	100	75	100

Table 3: Education and Sex wise distribution of cases

Table 4: Distribution of cases according to time of incident

Time	Male		Female		Total	
	n	%	n	%	n	%
6.01AM-12 noon	5	10.87	6	20.69	11	14.7
12.01PM-6 PM	20	43.48	8	27.59	28	37.3
6.01PM- 12mid night	6	13.04	6	20.69	12	16.0
12.01AM-6AM	15	32.61	9	31.03	24	32.0
Total	46	100	29	100	75	100

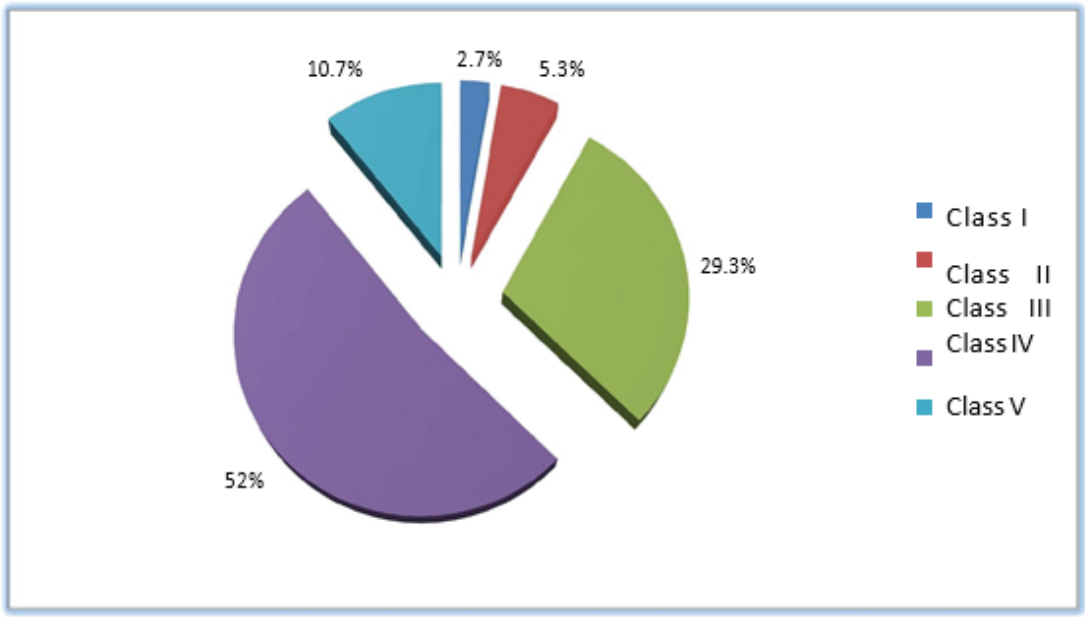

Figure 1 – Distribution of cases according to socio economic status.

Conclusion

Snake bite is a common medical emergency encountered by medical faculty all over the country. This study included snake bite casa summitted to hospitals of Bagalkot city. Rural adult male were more prone to snake bites as they are more commonly involved in agricultural activities. 12% morality was observed which is considerably high when compared to other studies.

Lack of transportation facilities, lack of easy accessibility to health care centres, more faith in traditional treatments, unaffordable cost of ASV, lack of knowledge about ancillary treatment modalities in snake bites among the medical faculty are the reasons observed for high morality in this study.

Incidence and morality due to snake bite can be prevented by following simple measures. Education of the rural population about the snake species prevalent in the respective regions, their habits and public health education regarding the recommended first aid could reduce the incidence of snake bite among rural population.

Training of medical faculty about correct methods of management of snake bite cases can be under taken. As neurotoxic envenomation was seen more commonly in this region, emphasis on management of patients with respiratory failure should be done such as assisted with ambu bag or mechanical ventilators without administration of ASV.

Strengthening of snake bite surveillance through the nation gives us an accurate perception of magnitude of the problem of the problem which would help in framing the snake bite control programmes.

Ethical Clearance - Taken

Source of Funding - Self

Conflict of Interest – Nil

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