IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 19, Issue 11 Ser.7 (November. 2020), PP 08-12
www.iosrjournals.org

"A study on Clinical Profile in Patients with Snake Bite in a Teritiary Care hospital".

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Date of Submission: 08-11-2020 Date of Acceptance: 21-11-2020

I. Introduction

Snake bite is a common occupational hazard in developing countries like India which is a land of exotic snakes[1].Most snake bites occur in temperate and tropical climates in which majority of population depend on agriculture and fishing[2].About 1.2-5.5 million snake bites occur worldwide each

year,out of which 20000-94000 patients die. In India, mortality due to snake bite is nearly 1300 to 50,000 patients per year[1].

Such a wide ranging estimates the need of collecting accurate data in the regions most affected by

venomous snakes. In south India,out of 216 species, common poisonous snakes we encounter are cobra,russells viper,saw scaled viper and krait[3]. Snake bites are neglected public health problem in all tropical countries and associated with mortality and morbidity[4]. Majority of victims donot seek

medical attention because of various reasons.

AIMS AND OBJECTIVES
The present study is conducted to study the clinical profile in snake bite patients in a tertiary care

hospital

METHOD OF STUDY

STUDY DESIGN :
A hospital based observational study.

STUDY SUBJECTS :
Fifty patients attending and admitting to medical casualty and wards of Sri Venkateswara Ramnarain Ruia Government General Hospital, will be studied.

STUDY SETTING :
Medical wards, OPD and casualty in SRI VENKATESWARA RAMNARAYAN RUIA GOVERNMENT

GENERAL HOSPITAL,TIRUPATI.
STUDY PERIOD:
JUNE 2019 to AUGUST 2019.

STUDY METHOD :
•Data has been collected from each patient as per a prepared proforma
•History,signs and symptoms, clinical examination and outcome of the patients has been studied.

INCLUSION CRITERIA :
•All patients coming to casualty, medical wards and ICU with history of snake bite

•Patients with presence of fang masks of snake

EXCLUSION CRITERIA :
•Patient with bites other than snake bite.
•Known case of bleeding disorder
•Patient with acute and chronic liver disease.
•Pregnant females.
•Patient on anticoagulant therapy.
•Patient with prior neurological illness.

II. Results And Statistical Analysis

A total of 50 snake bite cases were analysed. In our study, youngest patient was 16 years old and oldest patient was 70 years. Most of them were males compared to females. Most of them fell in the age group of 31 to 45 years (46%) and next commonly affected are between 16-30 years (28%). This higher incidence in these younger age groups may be contributed to their occupational activities. The age wise distribution of patients is shown in table 1.

Table 1. Age wise distribution of snake bite patients

AGEGROUP(YEARS)	MALE	FEMALE	TOTALNO.OFPATIENTS
16-30	8	6	14
31-45	14	9	23
45-60	6	4	10
Above 60	2	1	3
Total	30	20	50

Out of all cases , maximum cases were recorded in the month of August. In our study, snake bites were mainly from rural areas constituting 64% and 26% from urban areas. This can be explained as agriculture being the main occupation in rural areas and snakes usually habitat in agricultural areas. Out of 50 patients,snake bite has occurred to 41 patients mostly during outdoor activities constituting around 82%.
In our study, maximum snake bites has occurred during 12pm to 6pm ,that is in 18 patients (36%) corresponding to maximum outdoor activity and agricultural work. 16 patients (32%) have snake bites during 6pmto 12 am. Overall maximum snake bites occurred between 12pm to 12 am, as shown in the table 2.

Table 2. Distribution of snake bites by time of bite

Timeofsnakebite	No.ofpatients	Percentage
6 AMto 12 PM	11	22%
12 PM TO 6 PM	18	36%
6 PM TO 12 AM	16	32%
12 AMTO 6 AM	5	10%
TOTAL	50	100%

In almost 46 patients(92%) ,snake bites were common on limbs as shown in table 3. Among the limbs, lower limbs are more commonly involved, constituting 31 patients(62%), followed by upper limb in 15 patients(30%). Bite at unusual sites like face and back were also noted in rest of the patients (8%).

Table 3 .Distribution of site of snake bite

SITEOFBITE	NO.OFPATIENTS	PERCENTAGE
Lower extremity	31	62%
Upper extremity	15	30%
Other areas	4	8%
TOTAL	50	100%

Among all the snake bites, majority of them were due to poisonous snakes around 36 patients(72%) and 14 patients(29%) due to non poisonous snakes. It was observed that only few patients attended medical attention within 1 hour of bite. Majority of them (44%), attended hospital between 1st to 6th hour as shown in the the table 4. 8 patients (16%) arrived at our hospital after 12 hours of bite, who were either referred from near by health centre or arrived late with the appearance of symptoms or with complications.

Table 4. Time taken between snake bite and presentation to hospital.

TIMEOFPRESENTATION	NO.OFPATIENTS	PERCENTAGE(%)
Within 1 hour	3	6%
1-6 hours	22	44%
6-12 hours	17	34%
>12 hours	8	16%

Difficult topography,delayed transportation along with lack of awareness of the hazards of snake bite and initial seeking of alternative systems of medicine are the main reasons for delay in arrival as reported[5]. The bite to treatment delay varies greatly in studies from different health care centres in India[(6-8)].

Most of the patients presented with both local and haematological manifestations followed by hematoxicity. Detailed clinical presentation is depicted in table 5. Out of 10 patients with neuroparalytic features, 7 patients recovered and 3 patients required mechanical ventilation. Acute kidney injury was observed in 7 patients and they were under hemotoxic or hemotoxic with local manifestations group as depicted in table 7. All these above patients received polyvalent ASV. Deaths were due to ventilator associated pneumonia in 1 , refractory shock with cardiac arrestin 1and the other was due to massive upper GI bleed and haematuria.

Table 5 . Clinical presentation of snake bite patients

PRESENTATION	MALE	FEMALE	NO.OFPATIENTS	PERCENTAGE(%)
NO ENVENOMATION	4	2	6	12
NEUROPARALYSIS	3	1	4	8
HEMOTOXIC	5	4	9	18
LOCAL MANIFESTATIONS	4	4	8	16
LOCAL AND NEUROPARALYTIC MANIFESTATIONS	3	3	6	12
LOCAL AND HEMOTOXIC MANIFETATIONS	9	8	17	34

III. Discussion

In this study, majority of the cases occurred in august, which corresponds to rainy season,where vegetation is more and people are involved in intense agricultural activities. This interpretation is important to prevent and take maximum precautions against snake bites. In the present study, bites are more in males and young rural population.Area wise distribution of patientsisshown in the table 6. incidence of 83.3% snake bites were reported during outdoor activities in the present study. The above mentionedfindings are consistent with Bhat RN study[10]. The predominance of young male victims suggests that more ambulant population is at the highest risk for snake bite in this region and has been reported in studies from different places in India.

Table 6. Showing area wise distribution of patients

AREA(MANDAL)	NUMBEROFPATIENTS
Puttur	4
Tirupati urban	8
Varadhaipalem	3
Chandragiri	10
Yerpedu	5
Renigunta	6
Nagari	6
Palamaneru	3
srikalahasthi urban	5

Maximum patients were in the group 16-45 years,constituted 74% patients which is comparable to study by Sawai[11] (70.28%) and Nigam P[12] (83.3%). Biyajenee Mohapatra et al.;also concluded that deaths due to snake bites are more in the age group of 15-29 years. Maximum number of cases were observed in 10-39 years in their study.

Our study showed maximum snake bites occurred between 12 noon to 6pm(36%), followed by 32% during 6pm to 12am which is similar to findings of sawai study . Bites during afternoon corresponds to peak agricultural activity and in evening corresponds to both activity and poor lighting.

In our study, maximum number of bites occurred on lower limbs(62%). Bites over both lower and upper limbs constitute around 92%. 8% of unusual bite sites like over head and trunk happened when the person was asleep. This suggests bites were predominantly determined by accidental and inadvertent contact with snakes during the field work. The incidence in our study was similar to Sawai study.

In our study, 98% of the snakebite patients have one or the other signs and symptoms and all of them received antisnake venom injections.

Local and haemotoxicityoccured in majority (34%) of the patients, followed by haemotoxicity(18%). Local manifestations occur mainly in the form of local swelling, redness, ecchymosis, bleeding from bite site etc.

Out of 10 neuroparalytic patients due to snake bite, 2 patients required mechanical ventilation, out of which 1 patient died and the other recovered. out of all patients with snake bite, 7 patients got acute kidney injury, out of which 3 patients required haemodialysis as shown in the table 7.Total number of patients requiring mechanical ventilation were 5, out of which 2 patients expired.

Table 7. Showing number of patients requiring intervention

INTERVENTION	MECHANICALVENTILATION	HEMODIALYSIS
NUMBER OF CASES	5	3

IV. Conclusion

•Snake bite is a neglected occupational hazard affecting mainly rural population in tropics.
•Patients may land up in severe forms of the illness, if they didnot seek medical attention as early as possible.
•Lack of awareness ofseriousness of the consequences of snake bite, superstitious beliefs, seeking local unnecessary treatments, delay in transportation to hospital are the main reasons for the patients landing into acute renal failure and other complications.
•This interprets the need of proper health education to the people and to strengthen up primary health care facilities especially at rural level.
•Further research focussing on understanding epidemiology and its determinants of snake bite is required.

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