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Assessment of clinico- epidemiological profile of snakebite cases

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Abstract---The problem of snakebites has been persistently neglected by public health personnel, clinicians and policy makers even though its social and economic impact are wide spread. The present study was conducted to assess clinico- epidemiological profile of snakebite cases at BBMCH, Balangir, Odisha. 86 cases of snake bites of both genders was recorded. Parameters regarding sociodemographic profile, time and site of the bite, presenting complaints and time interval between snakebite and receiving medical treatment was recorded. Out of 86, males were 56 and females were 30. Common symptoms were local bleeding in 52, pain in 46, swelling in 51, diplopia in 22, hematuria in 34, abdominal pain in 68, vomiting in 76 and syncope in 24. The difference was significant ($P < 0.05$). The site involved was lower limb in 48 and upper limb & chest in 38. Time of presentation was <24 hours in 52 and >24 hours in 34. Type of snake was cobra in 25, python in 27, viper in 18 and Krait in 16 cases. The difference was significant ($P < 0.05$). Common symptoms were local bleeding, pain, swelling, diplopia, hematuria, abdominal pain, vomiting and syncope.

Keywords---diplopia, hematuria, snakebite.

Introduction

Snakebite is one of the neglected tropical diseases that World Health Organization (WHO) aimed to eradicate. Snake bite causes great morbidity and mortality in

developing countries.¹ Long rainy season, agriculture predominant occupations, rural background, and population using paths traversing rural and forest lands makes people prone to snake bites. However, it has been excluded from WHO report of 2010 and 2013 on neglected tropical diseases.² Currently, snakebite has been included along with other neglected non-tropical diseases such as strongyloidosis, scabies, mycetoma, etc. The problem of snakebites has been persistently neglected by public health personnel, clinicians and policy makers even though its social and economic impact are wide-spread.³

Their bites, apart from causing panic reaction and local injury, do not harm the patient. However, there are 13 known species that are poisonous and of these four, namely common cobra (*Naja naja*), Russell's viper (*Daboia russelii*), saw-scaled viper (*Echis carinatus*), and common krait (*Bungarus caeruleus*) are highly venomous and believed to be responsible for most of the poisonous bites in India.^{4,5} Most snakes found in Kashmir valley are nonvenomous of colubridae family (*ptyas mucosa* or grass snake).⁶ The majority of bite occur in rural areas, primary care physicians should be well versed with management of snake bite patients to decrease morbidity and mortality associated with snake bite envenomation.^{7,8} The present study was conducted to assess clinico-epidemiological profile of snakebite cases at BBMCH, Balangir, Odisha.

Materials and Methods

The present study comprised of 86 cases of snake bites of both genders. This study was conducted in BBMCH, Balangir, Odisha. The duration of the study was January 2021 to December 2021. The consent was obtained from all enrolled patients. Data such as name, age, gender etc. was recorded. The case records were reviewed and detailed information regarding sociodemographic profile, time and site of the bite, presenting complaints and time interval between snakebite and receiving medical treatment was recorded.

Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table 1
Distribution of cases

Total- 86		
Gender	Males	Females
Number	56	30

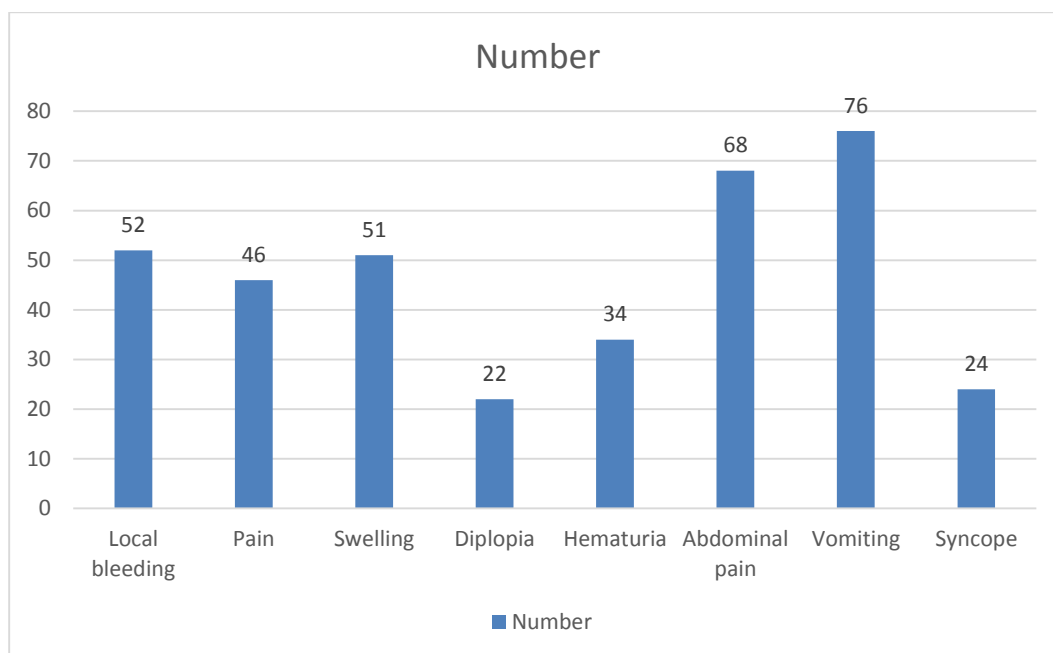
Table 1 shows that out of 86, males were 56 and females were 30.

Table 2
Profile of symptoms in patients

Symptoms	Number	P value
Local bleeding	52	0.12
Pain	46	

Swelling	51
Diplopia	22
Hematuria	34
Abdominal pain	68
Vomiting	76
Syncope	24

Table II, graph I shows that common symptoms were local bleeding in 52, pain in 46, swelling in 51, diplopia in 22, hematuria in 34, abdominal pain in 68, vomiting in 76 and syncope in 24. The difference was significant ($P < 0.05$).



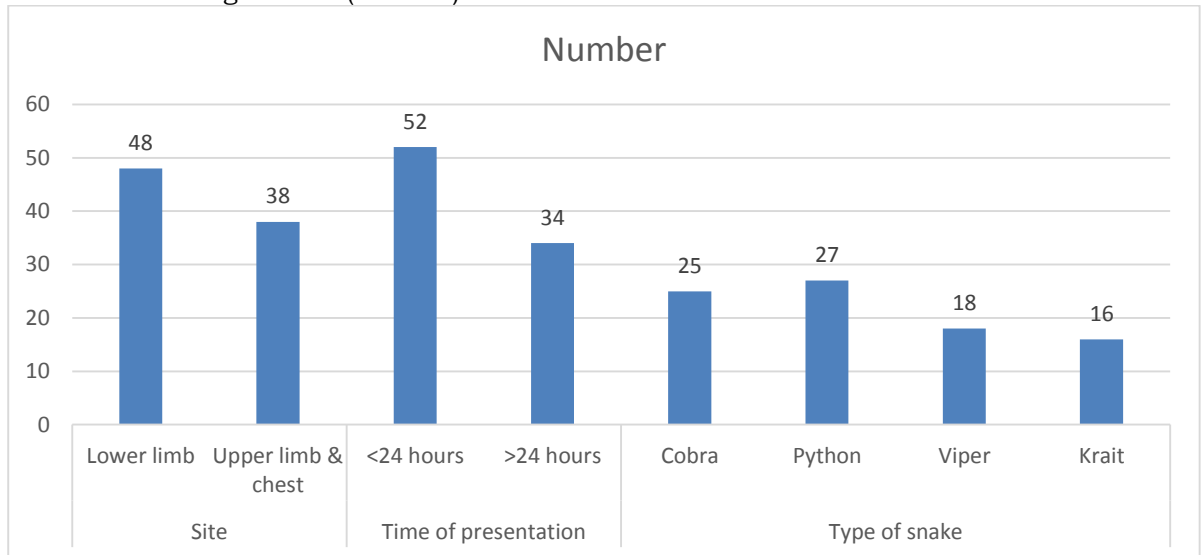
Graph 1. Profile of symptoms in patients

Table 3
Assessment of parameters

Parameters	Variables	Number	P value
Site	Lower limb	48	0.17
	Upper limb & chest	38	
Time of presentation	<24 hours	52	0.05
	>24 hours	34	
Type of snake	Cobra	25	0.02
	Python	27	
	Viper	18	
	Krait	16	

Table 3, graph 2 shows that site involved was lower limb in 48 and upper limb & chest in 38. Time of presentation was <24 hours in 52 and >24 hours in 34. Type

of snake was cobra in 25, python in 27, viper in 18 and Krait in 16 cases. The difference was significant ($P < 0.05$).



Graph 2. Assessment of parameters

Discussion

The increased mortality and morbidity in tropical countries is attributed to the scarcity of anti-snake venoms, minimal access and poor quality of healthcare services.^{9,10} People in countries like India prefer traditional healers rather than trained doctors, mainly because of ignorance and monetary issues as a result of which 77% of the snakebite victims in rural areas die outside the health care set up.¹¹ Snakebites can cause severe complications like shock, systemic bleeding, respiratory muscle paralysis, acute renal failure and necrosis of tissue at the site of the bite. Snakes from the family Viperidae and Elapidae are known to cause more severe consequences.¹² The present study was conducted to assess clinico-epidemiological profile of snakebite cases.

We found that out of 86, males were 56 and females were 30. Sambyal et al¹³ assessed the clinical profiles and manifestations of snakebite patients in the Shivalik hills of Jammu division. 45 (45%) patients were in the age group of 31-45 years which is the most common presenting age group in our study and the number of male patients were 57 (57%) and female patients were 43 (43%). All the cases recorded presented in the months of April to November. Not a single case was recorded in the month of January, February and December. The most frequently bitten sites was the lower limbs 47 (47%). 13 (13%) of the patients presented without any features of envenomation. Hematoxicity with local toxicity was the commonest presentation in 34 (34%) patients followed by neuroparalysis in 22 (22%) patients. Allergic reactions in the form of early anaphylaxis were noted in 4% patients. Snake bite is a neglected tropical disease affecting poor villagers in rural areas.

We found that common symptoms were local bleeding in 52, pain in 46, swelling in 51, diplopia in 22, hematuria in 34, abdominal pain in 68, vomiting in 76 and syncope in 24. Thapar et al¹⁴ included 198 cases of snakebite victims. The majority of the cases were males (68.2%). The mean age of the study population was 34.8 years. Maximum numbers of snakebite cases were reported during the month of September to December (47.9%). The peak time of snakebite was between 18.01 and 24.00 hours which was reported in 40.5% of the cases. Lower extremities were the most common site of bite in more than three-fourth of the cases (80.9%). The most common symptoms were a pain (45.9%) and swelling (44.9%). The case fatality rate was observed to be 3.0%.

We observed that site involved was lower limb in 48 and upper limb & chest in 38. Time of presentation was <24 hours in 52 and >24 hours in 34. Type of snake was cobra in 25, python in 27, viper in 18 and Krait in 16 cases. Yaqoob et al¹⁵ in their study among a total of 108 cases of snake bite, majority were males (57.40%) and mostly 20 to 50 years of age (68.51%). Majority of victims were from rural areas (93.5%) and most of the bites occurred during day time (87.96%) mainly on the lower limbs (63.88%). Highest number of cases occurred from May to October (98.14%). Most of the victims were farmers. Bleeding was present in 13.88% patients and coagulopathy (International normalized ratio (INR)>1.2) in 63.88% of patients. Neuroparalytic features were present in 8.33% patients. Mortality in our study was 2.8%.

Conclusion

Authors found that common symptoms were local bleeding, pain, swelling, diplopia, hematuria, abdominal pain, vomiting and syncope.

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