

ORIGINAL ARTICLE**Evaluation of cases of snake bite in forensic department**

Rajesh Kumar Baranwal

Associate Professor, Department of Forensic Medicine, BRD Medical College, Gorakhpur -273013, Uttar Pradesh, India

ABSTRACT:

Background: Snake bite is a common medical emergency and an occupational hazard. The present study was conducted to evaluate cases of snake bite. **Materials & Methods:** The present study was conducted on 186 patients of snake bites of both genders. A thorough patient examination was performed. Occupation of victims, site of bite etc. was recorded. **Results:** Out of 186 patients, males were 110 and females were 76. Age group 10-20 years had 18, 20-30 had 25, 30-40 had 34, 40-50 had 45 and >50 years had 64 patients. The difference was significant ($P < 0.05$). The site of bite was hand in 28, foot in 132 and other parts in 26. The difference was significant ($P < 0.05$). Farmers were victims in 106, labourers in 50 and other in 36. The difference was significant ($P < 0.05$). **Conclusion:** Most commonly males were the victims and patients with age above 50 years were mostly involved.

Key words: Snake bite, Foot, Victim

Corresponding author: Dr. Rajesh Kumar Baranwal, Associate Professor, Department of Forensic Medicine, BRD Medical College, Gorakhpur -273013, Uttar Pradesh, India

This article may be cited as: Baranwal RK. Evaluation of cases of snake bite in forensic department. J Adv Med Dent Sci Res 2014;2(3):260-263.

INTRODUCTION

Snake bite is a common medical emergency and an occupational hazard, more so in tropical India, where farming is the major source of livelihood.¹ Every year 50,000 Indians die in 2,50,000 incidents of snake bite, despite the fact that India is neither home for the largest number of venomous snakes in the world, nor there is shortage of anti-snake venom in the country.²

It is one of the commonest public health related problem in all over the country. The incidence of snake bite is much higher in the rural areas, as most of them are farmers or field-workers by profession.³ Most of the case fatalities are due to delay in the initiation of definitive management, negligence of patient or relatives, superstitions and lack of education and poor transport system. Sometimes there is hesitation to start the definitive treatment i.e. anti-snake venom (ASV) on the part of health care providers.⁴

Snakes are absolutely paramount to the health of many ecosystems, the environment and to biodiversity.

They are extremely valuable components to the ecological communities in which they live; playing several complex roles, including that of predators and prey. Human-wildlife conflicts have resulted to human fatalities and injuries and retaliatory killing of wildlife which is the major threat to the survival of many wildlife species.⁵ The present study was conducted to evaluate cases of snake bite.

MATERIALS & METHODS

The present study was conducted in the department of Forensic Medicine. It comprised of 186 patients of snake bites of both genders. Ethical clearance was obtained prior to the study. Patient's relatives were informed and written consent was obtained.

General data such as name, age, gender etc. was recorded. A thorough patient examination was performed. Occupation of victims, site of bite etc. was recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS**Table I Distribution of patients**

Gender	Males	Females
Number	110	76

Table I shows that out of 186 patients, males were 110 and females were 76.

Graph I Distribution of patients

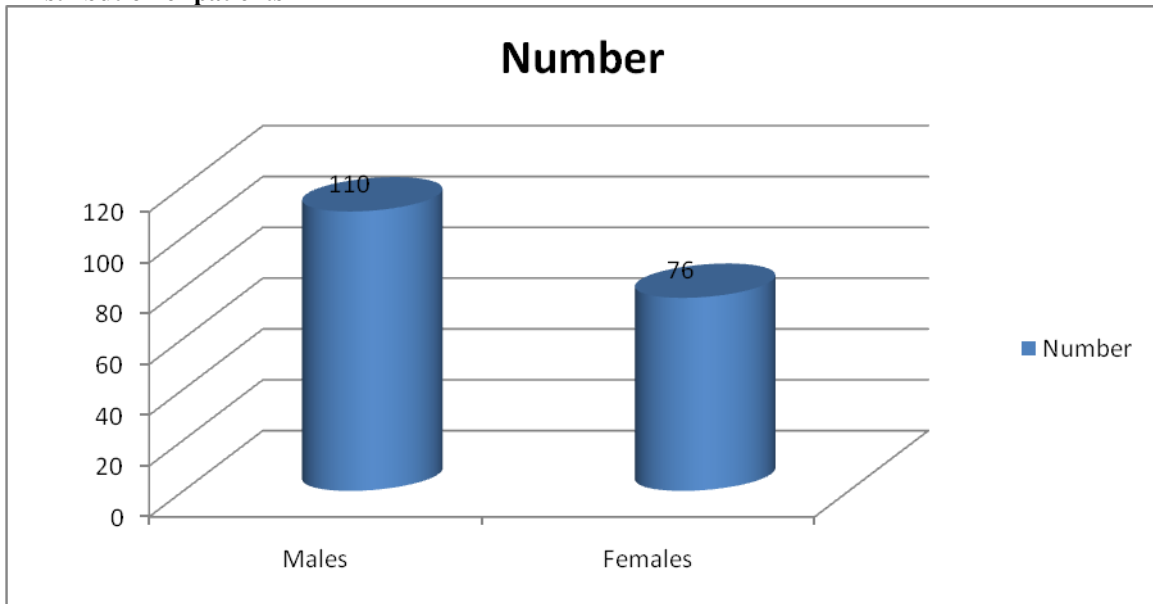


Table II Age wise distribution of patients

Age group (Years)	Number	P value
10-20	18	0.01
20-30	25	
30-40	34	
40-50	45	
>50	64	

Table II, graph II shows that age group 10-20 years had 18, 20-30 had 25, 30-40 had 34, 40-50 had 45 and >50 years had 64 patients. The difference was significant ($P < 0.05$).

Graph II Age wise distribution of patients

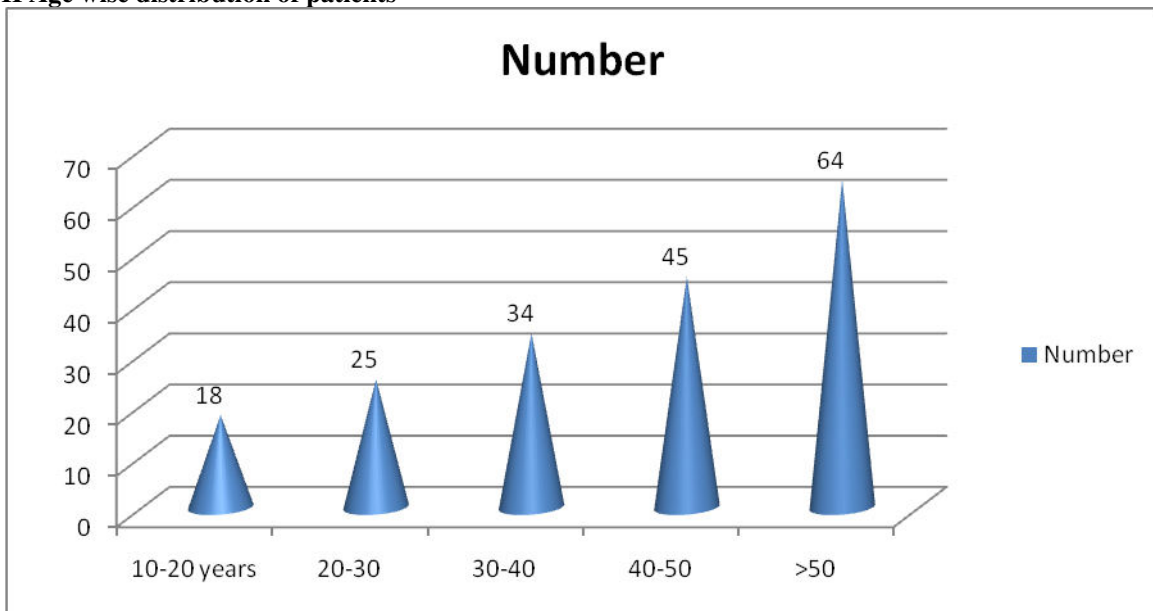


Table III Site of bite

Site	Number	P value
Hand	28	0.01
Foot	132	
Other parts	26	

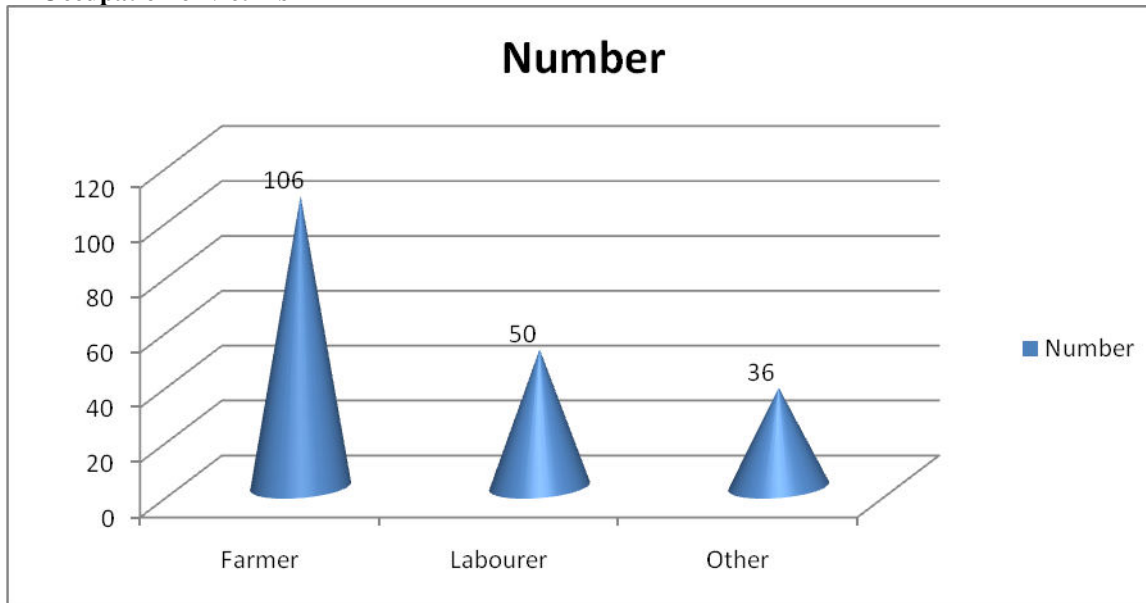
Table III shows that site of bite was hand in 28, foot in 132 and other parts in 26. The difference was significant (P< 0.05).

Table IV Occupation of victims

Occupation	Number	P value
Farmer	106	0.01
Labourer	50	
Other	36	

Table IV, graph III shows that farmer were victims in 106, labourers in 50 and other in 36. The difference was significant (P< 0.05).

Graph III Occupation of victims



DISCUSSION

Venomous snakes are seen in all over the world, so snake bites are also prevalent worldwide. Globally the non-venomous species predominate over the venomous ones.⁶ India has the highest mortality from snakebite in the world. Roughly 200000 people are bitten by venomous snakes in India annually.⁷ The case fatality rate is around 35000 to 50000 every year from venomous snake-bite in India, which is nearly half of the global figure (approximately 125000 annually).⁸

Over 2,000 species of snakes are known worldwide, of which around 400 are poisonous. These snakes belong to the families Elapidae, Viperidae, Hydrophiidae and Colubridae. Viper bites are more common than other poisonous snakebites in human beings.⁹ Of the different

varieties of vipers, the Russell’s viper (*Vipera russelli*) commonly inhabits the Southern Asian countries and its bite is regarded as an occupational hazard for the farming community.¹⁰ The present study was conducted to evaluate cases of snake bite.

In present study, out of 186 patients, males were 110 and females were 76. Age group 10-20 years had 18, 20-30 had 25, 30-40 had 34, 40-50 had 45 and >50 years had 64 patients. McGain et al¹¹ found that among the total 113 cases of neuroparalytic snake bite victims (56.63%) were males aged 21-40 years. Majorities of the victims were bitten outdoor (63.71%) and most of the bites occurred on the lower limbs (83%). The highest number of cases occurred during the monsoon season of July-September. Most of the victims were farmers (53.44%) and labourers

(30.55%), which suggested that snake bite was an occupational hazard. Mean dose of ASV administered was 16.99 vials. The percentage of patients requiring intensive care and ventilatory support were (40.70%) and the total percentage of patients showing recovery was (84.07%). The most important positive prognostic factor was reaching hospital within 7 hours.

We found that site of bite was hand in 28, foot in 132 and other parts in 26. Farmers were victims in 106, labourers in 50 and other in 36. A et al found that of the 63 venomous bite patients, most (82.5 %) were diagnosed to have features of neurotoxic envenomation. All of them (100%) received anti-snake venom (ASV). There was no incidence of anaphylactic reaction as well as any serious adverse drug reaction following ASV administration. Two patients developed acute renal failure, needed haemodialysis. Overall percentage of mortality was 3.2%.

Ansari et al¹² found that 63% of the snakebite victims were male while 37% were female. Snakebite was highest among 21- 30 years while the least were among 51 years and above. The result also shows that farmers has the highest percentage of snakebite with the least being civil servants. The records indicate that most of the snakebite were on the farm 74(49.3%) while 4(2.7%) falls under others. Majority of the victims 123 (82%) were bitten in their legs while 27(18%) were bitten in their hands. Viper (*Echis ocellatus*) has the highest number of victims while python has the least. Result also shows that most of the snakebite occurs during rainy season with the month of April having the highest number of victims.

CONCLUSION

Authors found that most commonly males were the victims and patients with age above 50 years were mostly involved.

REFERENCES

1. Al-Homrany M. Acute renal failure following snake bites: A case report and review of the literature. *Saudi J Kidney Dis Transpl* 1996; 7:309–12.
2. Basu J, Majumdar G, Dutta A. Acute renal failure following snake bites (viper). *J Assoc Physicians India* 1977; 25:883–90.
3. Bhat RN. Viperine snake bite poisoning in Jammu. *J Indian Med Assoc* 1974; 63:383– 92.
4. Seneviratne U, Dissanayake S. Neurological manifestations of snakebite in Sri Lanka. *J Postgrad Med* 2002; 48:275-78.
5. Sharma N, Chauhan S, Faruqi S. Snake envenomation in a north Indian hospital. *Emerg Med J* 2005; 22:118-20.
6. Harsoor SS, Gurudatta CL, Balabhaskar. Ventilatory management of patient with neuromuscular envenomation. *Indian J Anaesth* 2006; 50:452–455.
7. Malasit P, Warrell DA. Prediction, prevention and mechanism in early complication antivenom reaction in victim of snakebite. *Br Med J* 1986; 292:17-20.
8. Rahman R, Faiz MA, Selim S, Rahman B, Basher A, et al. Annual incidence of snake bite in rural bangladesh. *PLoS Negl Trop Dis* 2010; 4: 860.

9. Kochar DK, Tanwar PD, Norris RL, Sabir M, Nayak KC, et al. Rediscovery of severe saw-scaled viper (*Echis sochureki*) envenoming in the Thar desert region of Rajasthan, India. *Wilderness Environ Med* 2007; 18: 75–85.
10. Cheng AC, Winkel KD. Antivenom efficacy, safety and availability: measuring smoke. *Med J Aust* 2003;180:5–6.
11. McGain F, Limbo A, Williams D, Didei G, Winkel KD. Snake bite mortality at Port Moresby General Hospital, Papua New Guinea 1992–2001. *Med J Aust* 2004;181:687–91.
12. A.K Ansari, SA Sheikh. Management of viperidae snake bite. *Pak Armed Forces Med J* 2000;50(1): 26–8.