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ORIGINAL RESEARCH

Assessment of clinico- epidemiological profile of snakebite victims

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ABSTRACT

Background: Snakebite is a neglected tropical disease that the World Health Organization (WHO) aimed to eradicate. The present study was conducted to assess clinico- epidemiological profile of snakebite victims.**Materials & Methods:**60 victims of snake bites of both genders were selected. Parameters such as the sociodemographic profile, bite location and timing, complaints made at the time, and the amount of time that passed between the snakebite and medical attention were all noted.**Results:** Out of 60 cases, 34 were males and 26 were females. The occupation of victims was worker in 20, farmers in 26 and students in 14. 42 were married and 18 were unmarried. Residential status was rural in 36 and urban in 24. The difference was significant (P< 0.05). The site involved was upper limb & chest in 39, and lower limb in 21 cases. Time of presentation was <24 hours in 38 and >24 hours in 22 cases. Type of snake was cobra in 17, python in 23, viper in 13 and Krait in 7 cases. Common symptoms were swelling in 26, local bleeding in 41, abdominal pain in 19, pain in 52, diplopia in 12, vomiting in 17, syncope in 11 and hematuria in 8 cases. The difference was significant (P< 0.05).**Conclusion:** Rural workers and farmers were frequently impacted. Localized bleeding, discomfort, edema, diplopia, hematuria, nausea, vomiting, and syncope were typical symptoms.

Key words:snakebite, Married, Cobra

INTRODUCTION

Snakebite is a neglected tropical disease that the World Health Organization (WHO) aimed to eradicate. Snake bites dramatically raise morbidity and mortality rates in developing countries. The extended wet season, the prevalence of agricultural occupations, rural upbringing, and the use of pathways through forests and rural areas make people more susceptible to snake bites. The WHO's 2010 and 2013 reports on neglected tropical diseases did not mention it. In addition to snakebite, neglected non-tropical illnesses including strongyloidiosis, scabies, mycetoma, etc. are currently included. The issue of snakebites has been disregarded by public health experts, physicians, and policy officials despite its extensive social and economic impacts.

Due to a shortage of antivenoms, millions of people are bitten by snakes every year, making this "one of the neglected health problems of the tropics." Even while most people strive to avoid contact with reptiles, such as snakes, on occasion they have cultural significance in addition to being important for survival. Interactions between humans and snakes have long been linked to various results. The mortality rate in impoverished countries is 100 times higher than in industrialized countries due to a number of factors, including inadequate medical equipment, transportation, management of complications, and public awareness of basic first aid.The majority of snake bite victims are from rural areas; they typically get bitten while working in the fields or sleeping outside.The present study was conducted to assess clinico- epidemiological profile of snakebite victims.

MATERIALS & METHODS

The present study comprised of60victimsof snake bites of both genders. The study was conducted in department of Forensic Medicine and Toxicology, Shri Krishna Medical college, Muzaffarpur from Sept 2019 to February 2020. All patients gave their written consent for participation in the study.

Data such as name, age, gender etc. was recorded. Parameters such as the sociodemographic profile, bite location and timing, complaints made at the time, and the amount of time that passed between the snakebite and medical attention were all noted.Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

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RESULTS

Table I Distribution of cases

Total- 60		
Gender	**Males**	**Females**
Number	34	26

Table I shows that out of 60 cases, 34 were males and 26 were females.

Table II Socio- demographic data

Parameters	Variables	Number	P value
Occupation	Worker	20	0.81
	Farmer	26	
	Student	14	
Marital status	Married	42	0.01
	Unmarried	18	
Residential status	Rural	36	0.05
	Urban	24	

Table II, graph I shows that occupation of victims was worker in 20, farmers in 26 and students in 14. 42 were married and 18 were unmarried.Residential status was rural in 36 and urban in 24.The difference was significant (P< 0.05).

Graph ISocio- demographic data

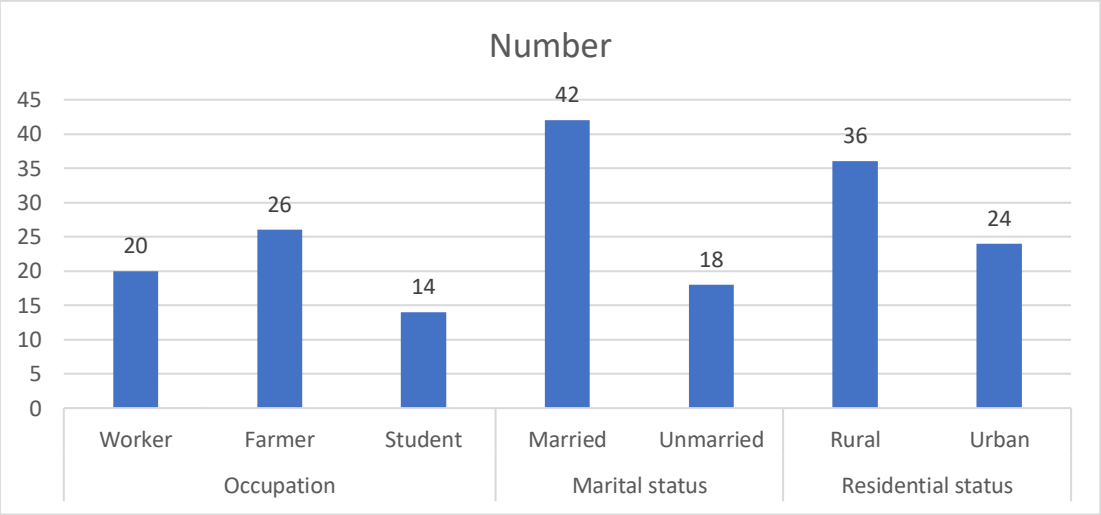

Table III Assessment of parameters

Parameters	Variables	Number	P value
Site	Upper limb & chest	39	0.01
	Lower limb	21	
Time of presentation	<24 hours	38	0.02
	>24 hours	22	
Type of snake	Cobra	17	0.58
	Python	23	
	Viper	13	
	Krait	7	
Symptoms	Swelling	26	0.05
	Local bleeding	41	
	Abdominal pain	19	
	Pain	52	
	Diplopia	12	
	Vomiting	17	
	Syncope	11	
	Hematuria	8	

Table IIIshows that site involved was upper limb & chest in 39, and lower limb in 21 cases. Time of presentation was <24 hours in 38 and >24 hours in 22 cases. Type of snake was cobra in 17, pythonin 23, viper

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DISCUSSION

Since most snake bites occur in rural areas, primary care physicians should be skilled in treating patients who have been bitten in order to lower the morbidity and death rates associated with envenomation.[8] Rising death and morbidity rates in tropical countries are caused by inadequate healthcare facilities, restricted access, and a deficiency of anti-snake venoms.[9,10] People in countries like India prefer traditional healers over qualified medical experts because of ignorance and budgetary restraints.[11,12] Because of this, 77% of snakebite victims in rural areas die without receiving medical attention. Shock, systemic bleeding, paralysis of the respiratory muscles, sudden renal failure, and necrosis of the tissue around the bite site are among the serious adverse effects of snake bites. Snake families Viperidae and Elapidae havea reputation for having greater negative effects.[13,14]The present study was conducted to assess clinico- epidemiological profile of snakebite victims.

We found that out of 60 cases, 34 were males and 26 were females. The occupation of victims was worker in 20, farmers in 26 and students in 14. 42 were married and 18 were unmarried. Residential status was rural in 36 and urban in 24. Kulkarni et al[15] enrolled six hundred and thirty- three cases of snake bite. Males (n = 433) were bitten more often than females (n = 200). Two hundred and fifty- six (40.4%) cases were in the age range of 11-15 years. The cases were seen during two periods, i.e., Oct, Nov, Dec (n = 210) and Apr, May, June (n = 199). Most (n = 506) were encountered in the lower limbs. Viper was the most common poisonous snake. Five hundred and seventy (90%) cases were from rural area. Coagulation time was prolonged in 371 (58.6%) cases, hemorrhagic syndrome was noticed in 354 (55.9%) cases, neurological involvement in 79 (12.5%) cases. Polyvalent anti snake venom (ASV) was given to 479 cases. Hypersensitivity to ASV was noted in 8 cases. Blood transfusion was given to 33 cases for the management of excessive bleeding. The death rate among snake victims was 5.2% (33 cases). The morbidity and mortality can be reduced substantially by increasing and maintaining confidence in good medical care and providing health education.

We observed that the site involved was upper limb & chest in 39, and lower limb in 21 cases. Time of presentation was <24 hours in 38 and >24 hours in 22 cases. Type of snake was cobra in 17, python in 23, viper in 13 and Krait in 7 cases. Common symptoms were swelling in 26, local bleeding in 41, abdominal pain in 19, pain in 52, diplopia in 12, vomiting in 17, syncope in 11 and hematuria in 8 cases.Singh et al[16]reported a case series of venomous snakebites in a military operational area of north India. Of 33 cases of snake bites presenting to the military hospital, 21 patients were envenomated. The median age of patients was 24 years; all were men. All of the envenomations were neurotoxic in nature. Abdominal pain (91%), headache (86%), dysphagia (86%), ptosis (77%), diplopia (72%), blurred vision (72%), dyspnea (67%), and vomiting (62%) were the predominant clinical presentation. Polyvalent AntiSnakeVenom (ASV) [mean 180 ml; range 90-320 ml] was given to all patients with systemic manifestations, and repeated as needed. Eleven (52%) patients received neostigmine with glycopyrrolate to counter cholinergic effects. Two patients were given ventilatory support. The average time of recovery from envenomation was 16 hours after administration of ASV. All patients recovered without sequelae. Soldiers during military exercise are vulnerable to snakebites. Neurotoxic snakebites predominate in our study and usually present with autonomic features along with headache, abdominal pain, ptosis, diplopia and dysphasia. Preventive measures to minimize snake bites and planned treatment regimens should be emphasized among medical and military personnel deployed in the field operations.

Rahman et al[17] discovered that 1409 snakebite incidents occurred throughout the villages they studied. 20% of the 1115 snakebite victims (or 3.9% of the sample) had been bitten more than once. Men were afflicted at a higher rate than women, with 4.8% of the male sample being affected compared to 3.0% of the female sample. 9 % (127 victims) of all bites ended in fatalities. In the studied villages, the number of deaths equals to 0.45% of the total population. 90 percent was determined to be the prevalence rate per 1000.

CONCLUSION

Authors found that rural workers and farmers were frequently impacted. Localized bleeding, discomfort, edema, diplopia, hematuria, nausea, vomiting, and syncope were typical symptoms.

REFERENCES

1. Pramila DeviR, Goornavar SM, Shreeram K, Umakanth B. Clinical profile of snake bite – 5 years study from North Karnataka, Bagalkot. Int J Med Health Sci 2012;1:61-70.
2. Brunda G, Sashidhar RB. Epidemiological profile of snake-bite cases fromAndhra Pradesh using immunological approach. Indian J Med Res 2007;125:661-8.
3. Nayar A, Singh HP, Leekha S. Pulp tissue in sex determination: A fluorescent microscopic study. J Forensic Dent Sci 2014;6:77-80.
4. Rao KV, Ramesh G, Acharya A. Clinico-epidemiology, clinical profile and outcome of venomous snake bite in children in Konaseemaregion

DOI: 10.69605/ijlbpr_13.9.2024.92

of Andhra Pradesh, India. Int J Contemp Pediatrics 2019;6:625.
5. 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.
6. A.K Ansari, SA Sheikh. Management of viperidae snake bite. Pak Armed Forces Med J 2000;50(1): 26–8.
7. Bhat RN. Viperine snake bite poisoning in Jammu. J Indian Med Assoc 1974;63:383-92.
8. Saini RK, Sharma S, Singh S, Gupta VK, Pathania NS. Primary pathological fibrinolysis insaw-scaled (Echis carinatus) viper bites. J Assoc Physicians India 1984;32:391-3.
9. Patel S, Patel A, Ganjiwale J, Patel D, Nimbalkar S. The study of clinical profile and outcome of patients with snakebite in a rural community. J Family Med Prim Care 2021;10:1661-5.
10. Bhatti AR, SattiAI, Khalid MA. Department of medicine, DHQTeaching Hospital Rawalpindi.Snake bite: Clinical profile and evaluation of effective anti-snake venom dose. Journal of Rawalpindi Medical College (JRMC) 2010;14:22-5.
11. Bawaskar H, Bawaskar P. Profile of snakebite envenoming in western Maharashtra, India. Trans R Soc Trop Med Hyg 2002;96:79-84.
12. Thapar R, Darshan BB, Unnikrishnan B, Mithra P, Kumar N, Kulkarni V, et al. Clinico-epidemiological profile of snakebite cases admitted in a tertiary care Centre in South India: A 5 years study. Toxicol Int 2015;22:66-70.
13. Yaqoob A, Ali Mufti S. A Study on the clinical, epidemiological profile and the outcome of the snake bite victims in Kashmir valley. J Family Med Prim Care 2022;11:680-4.
14. Sambyal V, Bharti D, Mahajan A. Clinical Profile of Snake Bite at A Tertiary Care Centre-One Year Study. JK Science. 2017 Oct 1;19(4):206-9.
15. Kulkarni ML Anees S. Snake venom poisoning–experience with 633 cases. Indian Pediatr 1994;31:1239–43.
16. Singh J, Bhoi S, Gupta V, Goel A. Clinical profile of venomous snake bites in north Indian Military Hospital. Journal of emergencies, trauma, and shock. 2008 Jul 1;1(2):78-80.
17. Rahman R, Faiz MA, Selim S, Rahman B, Basher A, et al. Annualincidence of snake bite in rural Bangladesh. PLoS Negl Trop Dis 2010; 4: 860.