Original Article

Snake Bite: Pattern and Prevalence in DHQ Hospital Barkhan Balochistan

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ABSTRACT

Objective: To examine the frequency and pattern of snake bite in District Barkhan Balochistan and its surrounding areas in Pakistan.

Study Design: Retrospective study

Place and Duration of Study: This study was conducted at the DHQ Hospital District Barkhan Baluchistan from 1st January 2010 to 31st December 2012.

Materials and Methods: In this study total 811 patients of both genders were included during the study period. Patients detailed history including age, sex, socio-economic status and residency, types of snakes identified, site of bite and time of bite to hospital visit time duration was examined.

Results: There were 492 (60.67%) males while rest 39.33% females, Mostly patients were ages 20 to 40 years. Most of the patients 96.92% of incidences prefer treatment from DHQ Hospital while 3.08% use the different modalities. 39.95% were bitten by Eristicophis, 10.97% Cobra, and 30.95% by viper and 18.13% Krait. Lower limb was the most frequent site of the snake bite (70.03%).

Conclusion: Snake bite is one of a important problem in this district. We also concluded that Anti-snake venom shows better result and early treatment after snake bite can reduce the mortality rate.

Key Words: Snake bite, Frequency, Anti snake venom (ASV), Snake types

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INTRODUCTION

Snake bite is the most common problem in worldwide and mostly incidences found in rural areas. About 1.9/100000 deaths are estimated annually from snake bite.[1] Mostly rural areas has high rate of snake bite because of lack of health facilities and low literacy level, due to these factors mortality rate is high in rural areas as compared to urban populated areas. Worldwide, there are four families of venomous snakes Atractaspididae, Elapidae, Hydrophildae and Viperidae and in these four families contain different five hundred species and the fifth family of venomous snakes the Colubridae has fourty species. It is reported that about two hundred species are most poisonous and caused high rate of mortality and severe complications.[2]

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In Pakistan, Cobra, Krait and viper are the most common poisonous snakes found mostly in rural areas.[3] In rural areas the prevalence of snake bite cases is high and most of the deaths are recorded due to snake bite and the most common reason for high mortality rate is the delay in getting the victims to a well equipped medical health care center for better treatment and the 2nd most common reason is to use other treatment modalities. Most of the researches regarding snake bite reported that mostly cases of snake bite happen when the people working in theirs cultivating fields or when people sleeping in open area.[4]

The identification of risk factors associated with a fatal outcome of snake bite would be very helpful to better target intervention measures. Several previous studies described clinical and epidemiologic features of fatal elapid snake bites but none, to our knowledge, identified true risk factors of death by comparing groups of victims with fatal and non-fatal outcomes.[5-8]

In District Barkhan, where more than 90% of the population is engaged in agricultural activities and in summer rainy seasons mostly people were effected with snake bites. This hospital based study was conducted to examine the frequency and pattern of snake bites in people of District Barkhan and surrounding areas aimed to provide better and quick treatment and to aware people of early treatment and to reduce the mortality rate in this area due to snake bites.

MATERIALS AND METHODS

This retrospective study on the treatment of snake bite envenomation was conducted at DHQ Hospital District

Barkhan Baluchistan during the year 2010 to 2012. In this study total 811 patients of both genders who were visited first time to seek treatment for the snake bite were included during the study period. This Hospital has the better treatment facilities of snake bite such as Anti Snake Venom. Patients having history of previous snake bite treatment and those whom were bitten from other species except snake was excluded from this study. Patients detailed history including age, sex, socio-economic status and residency, types of snakes identified, site of bite, and time of bite till time to hospital admission was examined. All the statistical data was analyzed by SPSS 17.0**.**

RESULTS

Out of 811 victim's record of 319 (39.33%) females and 492 (60.66%) were males with ages 10 to 60 years. 191 (23.56%) patients had ages less than 20 years, 446 (55%) patients had ages 20 to 40 years and 174 (21.45%) were ages between 41 to 60 years. 642 (79.16%) patients had rural residency and 20.84% had urban residency. Most of the patients 571 (70.41%) patients had low social economic status while 29.59% had middle socio-economic status (Table 1).

Table No.1: Demographical details of all the patients

Variable	No.	%
Gender		
Male	492	60.67
Female	319	39.33
Age (years)		
< 20	191	23.55
20 – 40	446	55
41 – 60	174	21.45
Residency		
Urban	169	20.84
Rural	642	79.16
Socioeconomic status		
Low	571	70.41
Middle	240	29.59

Table No.2: Time to incidence to hospital visit

Time (hours)	No.	%
> 4	268	33.05
4 – 12	333	41.06
13 – 24	179	22.07
> 24	31	3.82

Most of the patients 96.92% of incidences prefer treatment from DHQ Hospital while 3.08% use the different treatment modalities. Time of incidence to time to visit hospital is the most important factor and was noted as < 4 hours, 4 to 12 hours, 13 to 24 hours and > 24 hrs as 268 (33.05%), 333 (41.06%), 179 (22.07%) and 31 (3.82%) respectively. 85% of the people know about the Anti Snake Venom (ASV) while 15% do not know about it. 39.95% were bitten by Eristicophis, 10.97% Cobra, and 30.95% by viper and 18.13% Krait. Lower limbs were the most common sites of the snake bite and found in 70.03%. In our study, 4 (0.49%) patients were died and those were visited hospital after 72 hours of snake bite (Tables 2-4).

Table No.3: Types of snake and site of snakes bite

Variable	No.	%
Type		
Eristicophis	324	39.95
Cobra	89	10.97
Viper	251	30.95
Krait	147	18.13
Site bite		
Lower Limb	568	70.03
Other	243	29.97

Table No.4:ASV given to patients and mortality rate

Characteristics	No.	%
ASV		
Yes	786	96.92
No	25	3.08
Mortality		
Yes	4	0.49
No	807	99.51

DISCUSSION

Worldwide, snake bite is the most significant problem and most of the cases reported in rural areas. In our study, we observe that snake bite incidences were most common in rural areas of District Barkhan Balochistan Pakistan as compared to urban areas. The main reason was most of the people was farmers and worked in the fields and in rainy season most of the cases reported with snake bites. Many of other studies regarding prevalence and patterns of snake bite reported that most of the cases were found in rural areas.[7-9] In Our study, mostly patients were ages between 20 to 40 years and the rate of male patients population was high as compared to females, these results was similar to some previous studies in which the main age range was 18 to 40 years and males patients rate was high as compared to females.[10,11]

In our study we found 492 (60.67%) victims were male while 39.33% patients were females and most of the patients 70.41% had low socio-economic status. A study conducted regarding snake bite shows similar results.[12] In this study, mostly patients recognize the type of snake and only few patients didn't recognize due to darkness and fear. In the present study few of patients brought dead snake with him to the hospital. A study conducted on pattern of snake bite demonstrated that many of people brought dead snake specie to hospital for identification.[13] this may helps to identify the snake species and the frequency of that species in this area. In recent study, Time of incidence to time to

visit hospital is the most important factor and was noted as < 4 hours, 4 to 12 hours, 13 to 24 hours and > 24 hrs as 268 (33.05%), 333 (41.06%), 179 (22.07%) and 31 (3.82%) respectively. We found that many of victims first consult with traditional practitioner and than visit to hospital. Many of other studies demonstrated that 80% of snake bite victims first consult with traditional practitioner and not to prefer the quick and timely visit to hospital,[14-16]

In our study, we found that 39.95% were bitten by Eristicophis, 10.97% Cobra, and 30.95% by viper and 18.13% Krait, these results shows similarity to other study in which Eristicophis, krait and viper was the most common type of snakes found in Pakistan rural areas.[17] Patients who arrived late had higher severity scores, poor outcome and higher number of complications like renal failure, breathing difficulty, and cellulitis. In our study, 4 (0.49%) patients were died and those were visited hospital after 72 hours of snake bite. A study conducted by Bhatti et al in which mortality was found in 2 patients.[18]

In rural areas of Pakistan there is lack of medical facilities and it may also the main cause of delay in treatment and this major problem may lead to increase the mortality and morbidity rate. Moreover, Government should provide better facilities in these areas and there is a great need to be developed for the management of this problem.[19]

CONCLUSION

Snake bite is one of a significant problem in this population area. It is concluded that most of the patients were ages above than 20 years and eristicophis, krait and viper was the most common types of snakes found in this area. We also concluded that Anti-snake venom shows better result and early treatment after snake bite can reduce the mortality rate. Moreover, people must have to aware the ASV for better and quick treatment.

Author's Contribution:

Concept & Design of Study:	Samina Rehman
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Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Hanstia MF, Malik GQ, Memon S. Snakebite. In: Illiyas M. Lhan IA, Malik GQ, Mubashar M, editors. Community Medicine and Public Health. 5th ed. Karachi: Time Publishers 2000;1011-29.
2. Strickland GT. Hunters tropical medicine and emerging infectious disease. 7th ed. Philadelphia: WB Saunders; 1988.
3. Iliyas M, Ansari MA. Community medicine. 4th ed. Bombay: Elsevier; 1997.
4. Hayat AS, Khan AH, Shaikh TZ, Ghouri RA, Shaikh N. Study of Snake Bite Cases at Liaquat University Hospital. J Ayub Med Coll Abbottabad 2008;20(3):125-7.
5. Sharma SK, Khanal B, Pokhrel P, Khan A, Koirala S.Snakebite-reappraisal of the situation in Eastern Nepal. Toxicon 2003;41:285–289.
6. Trevett AJ, Lalloo DG, Nwokolo N, Kavau IH, Warrell DA. Analysis of referral letters to assess the management of poisonous snake bite in rural Papua New Guinea. Trans R Soc Trop Med Hyg 1994;88:572–4.
7. Bawaskar HS, Bawaskar PH. Profile of snakebite envenoming in western Maharashtra, India.Trans R Soc Trop Med Hyg 2002;96:79–84.
8. Looareesuwan S, Viravan C, Warrell DA. Factors contributing to fatal snake bite in the rural tropics: analysis of 46 cases in Thailand. Trans R Soc Trop Med Hyg 1988; 82: 930–34.
9. Punde DP. Management of snake-bite in rural Maharashtra: a 10-year experience. National Med J Ind 2005; 18(2): 71-5.
10. Ribeiro LA, Pires de Campos VAF, Albuquerque MJ, et al. Epidemiological and clinical aspects of accidents due to poisonous snakes in the State of São Paulo, Brazil, from 1986 to 1988. Toxicon 1990;28:621-3.
11. Simpson ID. The worldwide shortage of anti-snake venom: Is only right answer produce more or is it also use to smarter. Wilders Environ Med 2008; 19: 99-107.
12. Kerrigan KR. Venomous snakebite in eastern Ecuador. Am J Trop Med Hyg 1991; 44: 93-9.
13. Hansdak SG, Lallar KS, Pokharel P, Shyangwa P, Karki P, Koirala S. A Clinico-epidemiological study of snake bite in Nepal. Tropical Doctor 1998; 28: 223-6.
14. Chippaux JP. Snakebite epidemiology in Benin (West Africa). Toxicon 1988;27:37.
15. Snow RW. The prevalence and morbidity of snake bite and treatment-seeking behaviour among a rural Kenyan population. Ann Trop Med Parasitol 1994; 88: 665-71.
16. Theakston RDG, Phillips RE, Warrell DA, et al. Envenoming by the common Krait (Bungarus-scaerulus) and Sri Lanka Cobra (Najanajanaja): efficacy and complications of therapy with Haffkineantivenom. Trans Roy Soc Trop Med Hyg 1990;84:301-8.
17. Rukhsar S, Sajda A. Pattern of snake bite in rural areas of Sindh. AFMD 2015; 68 (2): 54-7.
18. Bhatti AR, Satti AI, Khalid MA. Snake bite: clinical profile and evaluation of effective anti-snake venom dose. JRMC 2010; 14(1):22-5.
19. Quraishi NA, Qureshi HI, Simpson ID. A Contextual approach to managing snake bite in Pakistan: snake bite treatment with particular reference to neurotoxicity and the ideal hospital snake bite kit. J Pak Med Assoc 2008;58(6): 325-31.