



SNAKE BITE; FREQUENCY OF VARIOUS CLINICAL PRESENTATIONS OF ADMITTED PATIENTS AND AVERAGE TIME TO REACH HOSPITAL

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ABSTRACT... Objective: To determine the frequency of various clinical presentations of snake bitten admitted patients. Study design: Descriptive case series study. **Place and duration of study:** This study was carried out in General Medicine ward, at Medical department of Peoples Medical University & Hospital Nawabshah, from September 2011 to March 2012. **Methodology:** This study consisted of 55 patients admitted through the outpatient department, as well as from casualty department of Peoples Medical University & Hospital Nawabshah. Detailed History was taken from all the patients with special regard to type of snake, age, sex, site, time of bite, time lapsed between bite and reaching to hospital. Detailed clinical examination of local features were fang marks, swelling, bleeding from wound, pain and systemic features like nausea, vomiting, ecchymosis, drowsiness, discharge from wound, hematuria, ptosis, respiratory failure of envenomation. Systemic review was also done to see any co-morbidity. All patients underwent for base line and specific investigations especially clotting time (CT). Inclusion criteria were that all diagnosed patients of snake bite, aged > 12 year of either sex admitted with the history of snake bite with irrespective of toxicity were included. Patients with history of thorn prick, insect bite were excluded criteria. Results were prepared with help of tables and graphs. Data was analyzed through SPSS software. **Results:** Out of 55 patients included in this study, 39 were men (70.9%) and 16 patients were female (29%); with male to female ratio of 2.4:1. There was wide variation of age ranging from a minimum of > 12 year to 60 year. The mean age was 39±5.8 years. In our study mostly patients 35(63.63%) reached hospital within 60 minutes followed by 12(21.88%) patients within 30 minutes. 5(9%) patients reached within 90 minutes and one patient reported more than 120 minutes. Symptoms of patients were pain at the bite side in 55(100%), ecchymosis in 18(32.72%), discharge from wound in 9(16.36%), bleeding from gum in 8(4.4%) Nausea and vomiting in 7(12.72%), hematuria in 11(20%), ptosis in 8(14.54%), drowsiness in 5(9%) and respiratory failure in 5(9%). **Conclusions:** We conclude that males are commonly affected than females and the farmers and labourers are the most vulnerable section of the population for snake bites. In this study age, presence signs and treatment by faith healers is independent predictors of death in case of snake bite. This may provide important evidence to formulate preventive strategies especially health education.

Key words: Snake bite, venom, ecchymosis,

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INTRODUCTION

Snakes bite are common in farming communities¹. Snake bites remain a public health problem in many countries even though it is difficult to be precise about the actual number of cases². It is estimated that more than five million bites by venomous snakes occur worldwide, with 1, 25000 deaths annually³.

The largest number of fatalities from snake bite occur in Asia and the sub region of South Asia is world's most affected region. Factors responsible for high incidence of snake bite in Asia are ecological conditions i.e. temperate weather and socioeconomic factors i.e. high population density, wide spread agricultural activities in rural areas, lack of functional snake bite control

program and numerous venomous snake species⁴.

Snake bite is common medical emergency in Pakistan. According to WHO mortality rate due to snake bite in Pakistan is 1.9 per 10,000 population. In Sindh, records of secondary health centers had shown that snake bite is amongst the five commonest causes of admission to hospital. Based on anti venoms, it is estimated that 40,000 episodes of snake bites occur annually in sindh⁵.

Poisonous species of snakes are included in five families: viperidae (vipers), elapidae (cobras), Colubridae, Atractaspididae and hydrophidae (sea snakes). Out of them vipers and cobras are common species in South East Asia. Snake venom is complex mixture of proteins and small polypeptides with enzymatic activity⁶. Snake bites have two major effects locally the venom causes an intense inflammation and destroys the tissues by proteolytic enzymes the vascular walls, including edema, sometime over the large area, often with blood loss. The venom proteins, when in high concentration in the blood, cause shock, generalized symptoms such as hypotension and abdominal cramps, allergic sensation, coagulopathy and rarely death⁷. Haematological changes both local as well as systemic are some of the commonest features of snake bite poisoning. Bleeding (17.5%) may occur from multiple sites including gums, injection sites and even as multiple petechiae and purpurae. There may be haematemesis (12.5%), melaena (12.5%) and haematoma (7.5%). In addition cerebral haemorrhage and extradural haematoma have also been reported⁴. The delayed arrival of patients to health facilities is directly proportional to the high rates of complications.

The rationale of this study is to determine the magnitude of various presentations of snake bite presenting at Peoples Medical College Hospital Nawabshah.

MATERIAL AND METHODS

This study was carried out at Medical department of Peoples Medical University & Hospital

Nawabshah, from September 2011 to March 2012. This study consisted of fifty five patients admitted through the outpatient department, as well as from casualty department of Peoples Medical University & Hospital Nawabshah. Detailed History was taken from all the patients with special regard to type of snake, age, sex, site, time of bite, time lapsed between bite and reaching to hospital. Detailed Clinical examination of local features were fang marks, swelling, bleeding from wound, pain and systemic features like nausea, vomiting, ecchymosis, drowsiness, discharge from wound, hematuria, ptosis, respiratory failure of envenomation. Systemic review was also done to see any co-morbidity. All patients underwent for base line and specific investigations especially clotting time (CT). Inclusion criteria were that all diagnosed patients of snake bite age ≥ 12 year of either sex admitted with the history of snake bite, irrespective of toxicity were included. Patients with history of thorn prick, insect bite were excluded criteria. Results were prepared with help of tables and graphs.

RESULTS

This study was conducted on 55 patients with history of snake bite admitted at Peoples University of Medical Health Science Hospital Nawabshah. Out of 55 patients included in this study, 39 were men (70.9%) and 16 patients were female (29%); with male to female ratio of 2.4:1 (Fig No:1). There was wide variation of age ranging from a minimum of >12 year to 60 year. The mean age was 39 ± 5.8 years (Fig No:2). In our study mostly patients 35(63.63%) were reached hospital within 60 minutes followed by 12(21.88%) patients within 30 minutes. 5(9%) patients reached within 90 minutes and one patient reported in more than 120 minutes (Table I). Symptoms of patients were Pain at the bite side in 55(100%), ecchymosis in 18(32.72%), discharge from wound in 9(16.36%), bleeding from gums in 8(14.54%) Nausea and vomiting in 7(12.72%), hematuria in 11(20%), ptosis in 8(14.54%), drowsiness in 5(9%) and respiratory failure in 5(9%) (Fig-3).

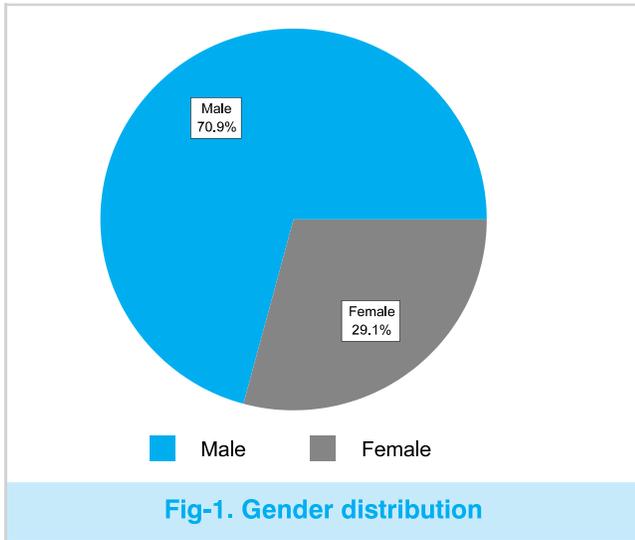


Fig-1. Gender distribution

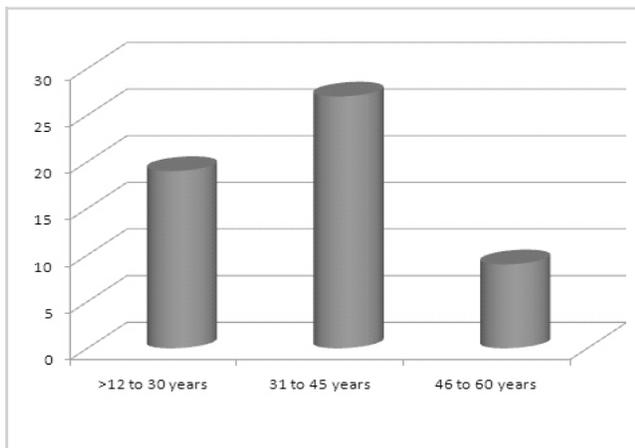


Fig-2. Age distribution

Time interval between bite and reaching hospital	No. of Patients. (n=55)	%age
Within 30 Minutes	12	21.88%
31 to 60 Minutes	35	63.63%
61 to 90 Minutes	05	09%
91 to 120 Minutes	02	3.6%
>120 Minutes	01	1.8%

Table-I. Time interval between bite and reaching hospital

DISCUSSION

Snake bite is a common medical emergency encountered in South Asia. The largest numbers of fatal snakebites occur in South Asia and Africa.

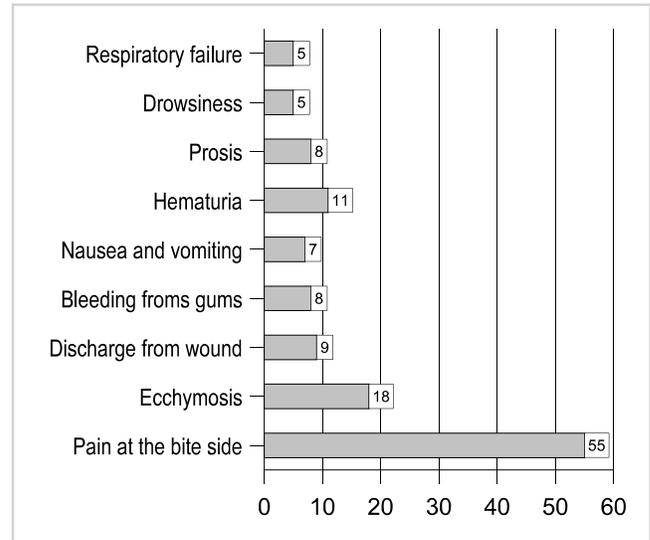


Fig-3. Symptoms at the time of admission and during the initial 24 hours

In South Asia, there are 25,000–30,000 deaths each year from snakebite. Estimated annual mortality rate due to snake bite in Pakistan is around 1.9 per 100,000 populations⁸.

Snake bite millions of people annually creating ‘one of the neglected health problems of the tropics’ due to a lack of antivenoms⁹. Contributing to this in developing nations, there is also deficiencies in the management of complications, transportation, hospital equipments and public knowledge of appropriate first aid, which result in a mortality rate one hundred fold higher than in developed countries^{6,8}. The victims of snake bites are mainly of the rural population, who are bitten during field work and when sleeping outdoors^{8,10}.

This study was conducted on 55 patients with history of snake bite. Out of 55 patients included in this study 39 were men (70.9%) and 16 patients were female (29%); with male to female ratio of 2.4:1. However in the study of Hayat AS⁹ reported out of 100 cases, 70 (70%) were men, 25 (25%) were women and 5 (5%) were children. Most of the cases were young rural men. The urban to rural ratio was 1:4.5 and the male to female ratio was 4:1. The place of bite was close to the home (25%) and the rest in or around the fields. Some 40 (40%) of snakebites occurred at night when the victims

were asleep and 60 (60%) during the afternoon siesta. The most frequently bitten site was the legs below knee (80%)⁹.

In our study was wide variation of age ranging from a minimum of >12 year to 60 year with mean age was 39±5.8 years. The peak age group in our study were 3rd and 4th decade of life which is comparable to other study where peak incidence was in the 3rd decade of Life and also reported Age of the patients ranged from 10-70 years and peak incidence 74 (39.36%) was in 10-20 years age group¹¹.

The low rate of complications during this study appears to be due to public recognition of the value of early presentation to tertiary care hospital and to standardised regimen of therapy, enacted regardless of shortage of medical personnel and deficiencies in medical infrastructure. However in the study of Hayat AS⁹ reported 50% patients received ASV within 3 hours of bite, whereas in one north Indian hospital, the median time for arrival to hospital was 9 hours¹², while in our study mostly patients 35(63.63%) were reached hospital up to 60 minutes followed by 12(21.88%) patients within 30 minutes. In Pakistan there is shortage of medical facilities in rural area which may also the cause of delayed consultation so more health centers throughout the country need to be developed for the management of this public health problem.

The most common and earliest symptom following snake bite is fright and may produce psychological shock and even death. It was seen in all of our patients and reassurance is the mainstay of its management. In our study the pain at the bite side in 55(100%) was the main presentation followed by ecchymosis in 18(32.72%), discharge from wound in 9(16.36%), bleeding from gum in 8(4.4%) Nausea and vomiting in 7(12.72 %), hematuria in 11(20%), ptosis in 8(14.54%), drowsiness in 5(9%) and respiratory failure in 5(9%). However in study of Sheikh MZ¹³ reported twenty-seven (54%) had visible fang marks, nineteen (38%) had distorted fang marks due to local cuts while four (8%) had no

visible bite or cut mark, thirty-five (70%) of them showed the signs and symptoms of toxicity; 34 of these were having vasculotoxicity / hematological derangement. All of these patients had local signs of envenomation, eight of these had enlarged tender regional lymph nodes and twelve had hematological derangement. All patients with enlarged regional lymphnodes had evidence of systemic toxicity. One (2%) patient had severe disseminated intravascular coagulation and died. Only one case was proved to have neurotoxic complications and developed ptosis followed by diplopia¹³.

CONCLUSIONS

This community based survey indicates that still majority of the Sindh rural population are using different local/traditional methods in the management of snake bite cases. Males are commonly affected than females, the farmers and labourers are the most vulnerable section of the population for snake bites. In this study age, presence signs and treatment by faith healers is independent predictors of death in case of snake bite. This may provide important evidence to formulate preventive strategies especially health education.

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REFERENCES

1. Addo V, Kokroe FA, Reindorf LR. **Broad ligament haematoma following a snake bite.** Ghana Med J 2009;43(4):181-2.
2. Bhattacharya P. **Neurotoxic snake bite with respiration failure.** Indian J Crit Care Med 2007;11(3):161-4.
3. Kasturiratne A, Wickermasinghe AR, Silva DN, Gunwardena NK. **The global burden of snake bite: a literature analysis and modeling based on regional estimate of envenoming and deaths:** POLS Med 2008;5:218.
4. Shaikh MZ, Maken GR, Satti SA. **Clinical Spectrum of snake bite and therapeutic challenges.** Pak Armed Forces Med J 2008;58(3):331-6.
5. Mehta SS, Kelkar PN, Parikh NN. **Respiratory failure after snake bite poisoning successfully treated with prolonged artificial ventilation.** Indian J Anaesth 2006;16:273-5.

6. Bhatnagar NS. **Artificial respiration in snake bite.** J Indian Med Assoc .1969;52:476-8.
7. Mohammad K, Naqvi IH, Talib A, Salkeen S, Abbasi B, Akhter T, Iftikhar N, Ali A. **Clinical course and outcome of snake envenomation at a hospital in Karachi.** Singapore Med J.2010;51(4):300-5.
8. Hayat AS, Khan AH, Shaikh TZ, Ghouri RA, Shaikh N. **Study of snake bite cases at liaquat university hospital Hyderabad/Jamshoro.** J Ayub Med Coll Abbottabad 2008;20(3):125-7.
9. WHO. **“Animal Sera”.** Retrieved December 30, 2005.
10. Cheng AC, Winkel KD. **Antivenom efficacy, safety and availability: measuring smoke.** Med J Aust 2003;180:5–6.
11. Abu Bakar, Nazmul Ahasan, Manwar Ahsan. Snake bite in Bangladesh Pak Armed Forces Med J Mar 2006;56(1):68-72.
12. Sharma N, Chauhan S, Faruqi S, Bhat P, Varma S. **Snake envenomation in a north Indian Hospital.** Emerg Med J 2005;22:118–20.
13. Sheikh MZ, Maken GR, Satti SA. **Clinical spectrum of snake bite and therapeutic challenges.** Pak Armed Forces Med J Sep 2008;58(3):331-6.



Coming together
is a **beginning**,
staying together is progress,
and working together is success

Henry Ford

