

**ORIGINAL ARTICLE**

## **Clinical presentation and outcome of snakebite cases in a teaching hospital**

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### **Abstract**

**Background:** Snake bite is an important but under recognised public health issue in Bangladesh. It is one of the important cause of mortality in our country specially in this southern part of Bangladesh.

**Objective:** This study was carried out to evaluate the common type of snake bite in local area with their clinical presentation and outcome of admitted patients in hospital.

**Methods:** Patients of snake bite diagnosed by history and clinical examination were consecutively selected for the study after fulfillment of inclusion criteria in the inpatient department of medicine ward, Khulna Medical College Hospital from July 2017 to June 2018. Data were collected and analysed afterwards.

**Results:** Among 54 snake bite patients 27 (50%) were female and 27 (50%) were male. Twenty nine (53.7%) were venomous snake bite and 25 (46.3%) were non venomous. The common victims were farmers 14 (25.9%) and housewife 19 (36.2%). The bites were commonly encountered during walking (30%) in rural area. Bite also occurred during sleeping (20%). The majority of the snake bite was observed during the month of June & July. Total 95% patient applied multiple tight tourniquet in the affected limb. A common local practice was to receive prehospital treatment from 'Ohzas'. Among 29 poisonous cases, drooping of the upper eyelid was present in 29 (100%) patients, External Ophthalmoplegia and broken neck sign were present in 19 (66.6%) patients. Among the venomous snake bite cases 25 (93%) patients recovered completely after getting antivenom.

**Conclusion:** Neurological manifestation (Ptosis, Ophthalmoplegia, Broken neck sign) are very common in venomous snake bite. Early detection and application of antivenom is needed for better outcome. Treatment of venomous snake bite with Polyvalent serum is successful and safe.

**Key Words:** Snake bite, Venomous, Antivenom

### **Introduction**

Snake bite is an important but under recognized public health issue in Bangladesh. It has been estimated that 5 million snake bite cases occur world wide every year causing about 100,000 death.<sup>1</sup> The true incidence of snake bite in rural Bangladesh is largely unknown. An epidemiological study estimated the incidence of snake bite in Bangladesh about 8000 per year with 22% mortality which has been identified to be one of the highest in the world.<sup>2</sup> Bangladesh supports approximately 80 species of snake. Among them only few are Venomous. These are Cobra, Krait, Russel's viper, Saw Scale viper, green snakes and sea snakes. Most bite occurs by non poisonous

snake and as many as 40% bites inflicted by venomous snakes do not produce sign of envenoming.

Biting occurs mostly when individual are at work, engaging in activities such as cultivation, fishing, plantation, wood collection, or tending crops or gardens. However bites are fairly common when victims are at sleep. During the bite it is unlikely, the people can identify the offending snake. Venomous snake bite can be presented with local or systemic features of envenomation which may be neurological, haematotoxicities, myotoxicities, organ failure and some non specific features. Frequently victims present with complication of

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treatment by traditional healer or self induced inappropriate application of tourniquet. The mainstay of management is anti snake venom

which although effective can cause anaphylaxis.<sup>3,4</sup> Only supportive treatment is sufficient for non poisonous bites. The interval between the bite and death is less than 12 hours in most cases.<sup>5,6</sup> So delay in diagnosis and treatment causes fatality. This study was conducted to determine common types of snake bites in local areas, and to find out the clinical presentation, complication and outcome of snake bite victims in hospital.

### Material and methods

This is an observational study. During, the study period of July 2017 to June 2018, fifty four cases of snake bite were included in this study who got admitted in medicine ward of Khulna medical college hospital. Informed written consent was taken from patient or their relatives. Patients of either sex, above 12 years of age who gave history of snake bite by seeing the snake or in whom bite mark was present or who developed feature of envenomation were included in this study. Patient were examined thoroughly, antivenom was given if sign of envenomation present. Outcome were recorded. Data were collected in a predesigned data sheet. After Collection, data were extrapolated in MS Excel and analysed in proportion and percentage.

### Results

Among 54 patients 27(50%) were female and 27(50%) were male. The common victims were housewife (36.2%) and farmers (25.9%) (Table I).

**Table I**

Demographic Characteristics of study population

	Number	Percentage
Gender		
Male	27	50.0
Female	27	50.0
Occupation		
Housewife	19	35.2
Student	9	16.7
Service	6	11.1
Farmers	14	25.9
Others	6	11.1
Marital Status		
Married	40	74.1
Unmarried	13	24.1
Widow	1	1.9

Total 29(53.7%) were venomous and 25(46.3%) were non venomous. The bite was commonly

encountered during rural foot walking (30%) followed by sleeping (20%).

**Table II**

Clinical features of Venomous snake bite cases

Clinical features	Number	Percentage
Ptosis	29	100
Broken neck sign	20	66.6
Nasal voice	14	49.5
Nasal regurgitation	12	19.5

Sixty five patient had snake bite in the lower limb. The majority (72%) of the snake bites were observed during the monsoon (Figure 1).

**Table III**

Treatment given to the patients

Treatment	Number	Percentage
Supportive	25	46.3
Antivenom	26	48.1
Ventilation	3	5.6
Total	54	100.0

Total 95% patient applied multiple tight turniquets in the affected limb. A common local practice (80%) was to receive prehospital treatment from 'Ohzas'.

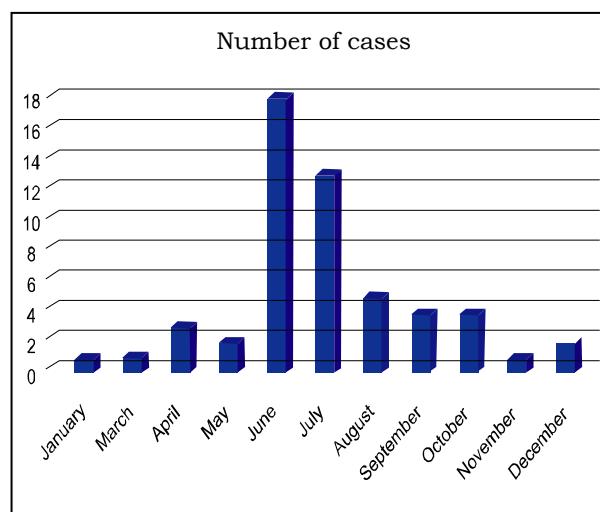


Figure 1: Distribution of cases according to months

Among 29 venomous cases drooping of the upper eyelid (100%) (Table II) and broken neck sign (66.6%) were the common feature (Figure-2).



Fig. 2 : Neurological feature of Venomous bite

Among 29 venomous snake bite cases, 93% recovered completely after getting polyvalent antivenom serum and 4 (7%) died after admission (Table III). Total 80% cases recovered with 10 vials of polyvalent antivenom serum per patient but others required upto 20 vials depending on severity of symptoms and its duration. No reaction to antivenom serum was noticed.

## Discussion

Snake bite is a major health problem in Bangladesh, where rural dweller, farmers working bare footed in fields or sleeping outdoors, are predisposed to frequent contact with poisonous snakes. In our study venomous snake bite is more than the non venomous snake bites which is in consistent with other study in Bangladesh.<sup>8-9</sup> It may be due to the fact that mostly venomous snake bite case, not cured by traditional treatment are admitted to the hospital.

Most snake bite occurs during the monsoon season because of flooding of the habitat of snakes and their prey. Our study is in conformity of the fact from other studies in Bangladesh that snake bites abound during the month of June to September.<sup>10,11</sup> The common site of bite was the lower limb. In a study in Chittagong it was 60% and in another study it was 57%.<sup>12</sup> After the bites, all applied tight tourniquet to their limbs which were not done in appropriate method and may cause ischemic damage to the limb, though fortunately none in this study population developed so. It should be applied loosely just to prevent spread of venom through lymphatic and

vein.<sup>13</sup> None of the cases had local tissue necrosis and bleeding from the site, which was common in Chittagong region.<sup>14</sup> The main clinical features here were neurotoxicity. Study in Bangladesh and India showed that predominant venomous snake bite were neurotoxic.<sup>13-16</sup>

In our study, among the poisonous snake bite cases, 4 cases died after admission. They were brought 12-24 hours after the bite in a critical condition and expire before anti snake venom could produce its effect. Death rate in our study (7%) is comparable with another study in Bangladesh where it was 6%. In our study we got good result with 10 vials of anti snake venom in majority of cases which was consistent with other studies.<sup>17,18</sup>

Our study had several limitations. Firstly, the sample size was small. Secondly, some non poisonous snake bite patient left hospital soon after admission, so these patient's data could not be included in this study. So the result of this study should be interpreted in the light of the above limitation.

## Conclusion

Neurological manifestation (Ptosis. Ophthalmoplegia, Broken neck sign) are very common in venomous snake bite. Early detection and application of antivenom is needed for better outcome. Treatment of poisonous snake bite with polyvalent antivenom serum is successful and safe.

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