

ORIGINAL ARTICLE

CURRENT SCENARIO OF POISONING AND SNAKE BITE PATIENTS ADMITTED IN SYLHET MAG OSMANI MEDICAL COLLEGE HOSPITAL

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Abstract:

Background: Poisoning cases are still neglected in our society. Recent studies have revealed the increasing trend of poisoning and snake bite patients, which may be a big challenge shortly. This study was carried out to observe the epidemiological profile of acute poisoning and snake bite in northeastern Bangladesh and to evaluate the risk factors, patterns and mortality. **Methods:** Data was collected from the emergency admission registrar of Sylhet MAG Osmani Medical College Hospital with a history of poisoning or snake bite from 1st January 2022 to 30th September 2022. Then indoor ward registers were used to see the outcomes. **Results:** 774 patients were admitted in the last nine months. Among them, 707 were poisoning cases (406 males and 301 females), and 67(48 males and 19 females) were snake bites. We found 201 (28%) patients with unknown poisoning, and 167 (24%) were OPC poisoning. Other poisoning types were drug overdose (sedative, paracetamol, antipsychotic, anti-depressant and anti-hypertensive) and corrosive poisoning (Herpic, Dettol, Savlon, Detergent, Soap, Household Cleaning Materials, and paraquat). Though less frequent (11 cases), parquet poisoning was the most fatal. Regarding, Snakebite, 16 (24%) were venomous, and 44 (66%) were non-venomous. At last, we observed 45 deaths (Poisoning 40 and Snakebite 5). **Conclusion:** Both poisoning and snake bite cases are important in the clinical context of every tertiary care hospital like ours. To reduce this burden, we should focus on the risk factors. At the same time, proper treatment guideline is necessary even in the rural setup to ensure initial life-saving care.

Keywords: Poisoning, Snakebite, Outcome

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Introduction:

Our healthcare system continues to ignore incidents of poisoning and snake bites. In rural places where widespread beliefs prevent patients from receiving appropriate medical attention, it is more difficult. A global issue that is getting worse every day is acute poisoning. The majority of fatal poisoning cases, according to the World Health Organization, take place in developing nations. Acute poisoning is an issue in

developed nations as well. 10–20% of all acute medical hospitalizations in the UK are due to it¹. It is a frequent medical emergency and the ninth most frequent cause of in-hospital mortality in Bangladesh. The most frequent causes of poisoning are pesticides, herbicides, rodenticides, chemicals, medications, alcohol, travel-related poisoning, and various kinds of bites. The first two days are extremely important and can call for high-dependency care. It is

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particularly challenging for Bangladesh's tertiary care hospitals to treat those patients due to the shortage of segregated wards.

According to recent research from several Asian nations, there may be 300,000 intentional pesticide ingestion suicides per year. Adult females make up about 44% of all fatalities in Bangladesh, and medical wards at tertiary hospitals account for 8 to 10% of all fatalities ^{2,3}. In Bangladesh, a tropical nation, snake bites are extremely typical. Rain is nearly always a given in Sylhet. Flooding is a common, natural tragedy in this area. These two elements help explain why snake bites are on the rise during a given season. In addition, the forests and tea gardens of Sylhet are home to a few unique venomous snakes. So, it is important for us to get ready for the early care of snake bites. National statistics from the 1999 Bangladesh Health and Injury Survey (BHIS) showed that the annual incidence of snake bites was 10.98/100000 people. An estimated 15,372 people are bitten by snakes each year, and 1,709 deaths have been reported. According to a national mortality survey conducted in India, roughly 4.1/10,000 people each year pass away from snakebites ⁴.

In order to determine the pattern and frequency of poisoning in a tertiary care level government hospital, this study counted all poisoning and snake bite cases. Additional specific goals were classifying venomous and non-venomous snake bites and locating lethal poisonings. Lastly, the results were recorded by adding the number of discharges, deaths, and ICU support requirements.

Methods:

Data was collected from the Emergency Admission registrar because all the poisoning and snake bite patients were admitted through the emergency department. Every patient was counted with a history of poisoning and snake bite from 1st January 2022 to 30th September 2022. After initial data collection, indoor ward registers were used to see the outcomes. A semi-structured questionnaire form was filled with previous data and information from a short telephone interview with the patients or their attendants.

Results:

In this study total of 774 (male 454 and female 320) patients were observed who was admitted with a history of either poisoning or snake bite from January to September. In Table 1 showed that 707 were poisoning cases (406 males and 301 females), and 67(48 males and 19 females) were snake bites. In poisoning cases, 406 (57%) were male, and 301(43%) were female. Besides this, 48(72%) were male, and

19(28%) were female among the snake bite cases. Urban habitats were 113(poisoning 101, snake bite 12), whereas 661 patients were from the rural (606 and 55 for poisoning and snake bite, respectively) . The observation is clear that most cases are from the countryside due to inadequate treatment facilities. The number of male patients was more than the female, and most cases were from 18-30 years old (poisoning 430, 61% and snake bite 16, 24%) . In Table: 2 observed that in March 2022, the highest number of poisoning cases (131) was admitted, whereas the lowest number of patients was admitted in June 2022. Surprisingly, no snake bite patient was hospitalized till May 2022, and in July, the number rose to its maximum (44). It was probably due to the flood. In Table 3: showed that the distribution of cases regarding their age, the number of cases more in the age 18-30 years as they were the main working force. InTable:4 demonstrated that suicidal poisoning is more common in male(261), and female(223). In Table: 5 demonstrated that there are 12 major categories of poisoning, among which unknown poisoning cases are 201 (28%), and the second highest is OPC poisoning, which is 167(24%). Patients used different medications, likely antipsychotic, antihypertensive, aspirin, beta-blocker, etc., to harm. The lowest number came from the alcohol intoxication group, and the no is 5(0.7%). In Table-VI observed that types of bites regarding venom potentialities. There were different types of snake bites. Most snakes were non-venomous (44, 66%). Of the venomous snakes, 16 (24%), whereas 7(10%) cases were locally venomous. In Table-VII demonstrated that outcome of poisoning patient admission in terms of cure and death

In the case of poisoning, 667(94%) patients were cured, 40(06%) died, and 45 needed ICU admission. We saw 62(93%) patients with snake bites get cured, 5(7%) die, and 9 need ICU support. Regarding total mortality, the number was 45. Among them, 40 cases were poisoning and five from snake bites. Most of the poisoning cases are paraquat; other causes are OPC and unknown poisoning. All the deaths from snake bites were venomous snake bites.

Table I: Summary of total observed patients

Variables	Poisoning	Snake Bite	Total
Male	406	48	454
Female	301	19	320
Urban	101	12	113
Rural	606	55	661

Table II : Monthly distribution of patients according to their admission

Month	Month-wise Patient Admission		Total
	Poisoning	Snake Bite	
January	98	0	98
February	102	0	102
March	131	0	131
April	64	0	64
May	97	0	97
June	49	5	54
July	50	44	94
August	55	12	67
September	61	6	67
Total	707	67	774

Table III : Distribution of cases regarding their age

Age Group	Poisoning	Snake Bite
<18	119	12
18-30	430	28
31-50	105	16
>50	53	11
Grand Total	707	67

Table IV: Mode of poisoning.

Cause (Total 707)	Male (707)	Female (301)
Suicidal (484)	261	223
Homicidal (141)	95	42
Accidental (81)	45	36

Table V: Types of poisoning cases

Types of Poison	
Types	Number of Patients
Unknown	201
OPC	167
Drug	134
Harpic	77
Sedative	44
Corrosive	30
Household Products	14
Paraquat	11
TCA	10
Rat Killer	7
Street	7
Alcohol	5
Total	707

Table VI : Types of Bites regarding venom potentialities. Types of Bite

Types	Count
Locally Venomous	7
Non-Venomous	44
Venomous	16
Grand Total	67

Table VII : Outcome of poisoning patient admission in terms of cure and death

Outcome			
Types	Poisoning	Snake Bite	Total
Cured	667	62	729
Death	40	5	45
ICU	45	9	54

Discussion:

In this study, poisoning in men was more than the women; this finding was very similar to some Bangladeshi and Indian studies ^{5,6,7}. On the other hand, women’s predominant findings were seen in Turkey and Japan ^{8,9}. The higher incidence of poisoning in men may be due to stress following the financial crisis and job-related pressures. Most patients were from 18 to 30 years old, which is similar to a study by Chowdhury et al. in Bangladesh ¹⁰. Studies in other countries also showed a similar pattern of age distribution ^{6,7,8}. Moreover, young adults are more vulnerable to this health problem due to emotional and social disharmony and occupational problems. The majority of poisoning cases were found suicidal, where males are slightly more in number than females. However, Chowdhury et al. also observed a higher suicidal tendency among females ³. Here, we found that the highest number of snake bites occurs during the rainy season and the flood (June to September). This is probably because most agricultural activities occur during this season. These changed conditions are likely to force snakes to come out of their shelters, which might cause an increased risk of a snake bite during the monsoon season. Similar findings were reported from other studies ⁴. We observed 16 (24%) venomous, 7 (10%) locally venomous snake bites, and the rest, 44 (66%), were non-venomous. Krait and Cobra were the commonest snakes, and green pit viper was the most common locally venomous. Most patients had tight tourniquets during admission, and some had local maltreatment. Some of the venomous snake bites

had a local invasion. There were some unknown snakes that the patient could not identify. This study had a similarity to the study done by Mymensingh Medical College, Bangladesh¹⁰. Regarding total mortality, the number was 45. Among them, 40 cases were poisoning and five from a snake bite. Most of the poisoning cases are paraquat poisoning, a herbicide commonly found in Sylhet. Despite having ICU support for a long period patient expired of respiratory and renal complications. The proper management protocol is still elusive regarding this issue. Again, the death rate from unknown street poisoning is also higher because of late presentation and proper initial management. Our observation was that if poison could not be identified earlier, the outcome would be poor later. In the case of venomous snake bite, it is more rewarding with anti-venom and ICU support. We found five deaths where there was no ICU availability in time. All venomous snake bite patients received ant venom; some had more than one dose to recover. The above findings are also similar to an Indian study¹¹.

Conclusion:

There were various poisoning cases, some of which were extremely rare and difficult to treat. Measures to provide immediate treatment at initial encounter may be effective in reducing mortality in fatal poisoning and venomous snake bite.

Limitations:

Small sample size and this single hospital based study did not reflect exact scenario of the whole community. Patients from all socioeconomic status and all parts of the country did not come to seek medical attention in the study place.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee from Sylhet MAG Osmani Medical College.

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