



**ORIGINAL RESEARCH PAPER**

**Medicine**

**A CLINICO- EPIDEMIOLOGICAL STUDY OF SNAKE BITE AT A TERTIARY CARE CENTRE**

**KEY WORDS:** Snake bite, clinic-epidemiological study

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**ABSTRACT**

**Background:** Snake bite has been recognised as a major public health problem. **Objective:** The present work was conducted for the purpose of evaluating snake bite with reference to its clinic-epidemiological profile. Material and **Methods:** The present work was designed as a tertiary urban hospital based, observational, clinico-epidemiological study during the period from June 2018 to May 2019. **Results:** Out of 76 patients, maximum no. of patients (n=37, 48.68%) bitten were in the age-group of 20-40 years. Maximum incidence of snake bite was found in farmers (79.48%, n=62). Males (67.10%, n=51) were bitten more. Out of 76 patients, 37 patients (47.43%) had non-poisonous snake bites and 39 patients (52.57%) had poisonous snake bites. Neurotoxic bite was seen in 34 patients (43.58%). Fifty-two patients (66.67%) came with tourniquet application as first aid. Eleven cases (14.10%) had received non-medical treatment before admission. In the present study, 12 (15.38%) patients were admitted within first 6 hours and forty two (53.84%) patients were admitted within the first 24 hrs. Ptosis (100%) was the commonest and earliest manifestation of neuroparalytic snake bite. Commonest vasotoxic snake bite manifestation was local bleed (71.42%, n=5) followed by cellulitis (57.14%). **Conclusions:** The present study offers insight into the current status of the snake bite. Population awareness programs regarding prevention, first-aid and the importance of the early transfers to be emphasized.

**INTRODUCTION**

As our country is agricultural based, the encounter between man and snake is a frequent occurrence. Common poisonous snakes are Cobra, Russell's Viper, Saw Scaled Viper, and Krait.[1] Largest number of deaths reported in India are from Bengal, Uttar Pradesh (UP), Tamil Nadu, Bihar, and Maharashtra. [2] It is a fact that in spite of heavy morbidity and mortality, very little attention is paid on the epidemiology of snake bite.

**MATERIALS AND METHODS**

The present work was designed as a tertiary urban hospital based, observational, clinico-epidemiological study during the period from June 2018 to May 2019. A total of 76 cases of snake bite were admitted in medicine wards during the study period. After obtaining consent, data was collected on predesigned questionnaire by interviewing the study subjects who were hospitalized during the study period. Information regarding demographic and epidemiological parameters such as age, sex, residence, occupation, site of bite and place of bite, type of snake if identified, was obtained. Time interval to reach the health facility after snake bite and first aid received if any was also asked. Clinical examination was also carried out in each case. Identification of type of snake bite (Vasculotoxic (VT), Neuroparalytic (NT), and Non-poisonous) was observed.

**RESULTS**

Out of 76 patients, maximum no. of patients (n=37, 48.68%) bitten were in the age-group of 20-40 years. [Table: 1] Maximum incidence of snake bite was found in farmers (79.48%, n=62). Males (67.10%, n=51) were bitten more. Maximum incidence of snake bites was found in rural areas 85.89% (n=67). Bites were commonly seen on the lower extremities (82.05% n=64). Maximum bites were in the night time (80.76%, n=63). Higher incidence of snake bites was found in rainy season (52.56% n=41). Out of 76 patients, 37 patients (47.43%) had non-poisonous snake bites and 39 patients (52.57%) had poisonous snake bites. Neurotoxic bite was seen in 34 patients (43.58%). Fifty-two patients (66.67%) came with tourniquet application as first aid. Eleven cases (14.10%) had received non-medical treatment before

admission. In the present study, 12 (15.38%) patients were admitted within first 6 hours and forty two (53.84%) patients were admitted within the first 24 hrs.

Neuroparalytic snake bites (43.58%, n=34) were more common than vasotoxic snake bite. Ptosis (100%) was the commonest and earliest manifestation of neuroparalytic snake bite followed by ophthalmoplegia (70.58%, n=24). Commonest vasotoxic snake bite manifestation was local bleed (71.42%, n=5) followed by cellulitis (57.14%). Hematuria (42.85%) was the commonest manifestation in those patients who developed ARF. Seven patients died because they came late to seek medical treatment and by that time, complications were beyond control and were associated with systemic infection.

**Table :1**

| CHARACTERISTICS | PERCENTAGE        |               |
|-----------------|-------------------|---------------|
| AGE             | <20 Years         | 10.52% (n=08) |
|                 | 20 -40 Years      | 48.68% (n=37) |
|                 | >40 Years         | 40.78% (n=31) |
| SEX             | Male              | 67.10% (n=51) |
|                 | Female            | 32.05% (n=25) |
| OCCUPATION      | Farmer            | 79.48% (n=62) |
|                 | Snake charmer     | 01.31% n= 01) |
|                 | House wife        | 11.53% (n=09) |
|                 | Student           | 07.69% (n=06) |
| RESIDENCE       | Rular             | 85.89% (n=67) |
|                 | Urban             | 14.10% (n=11) |
| TIMING OF BITE  | Day               | 19.23% (n=15) |
|                 | Night             | 80.76% (n=63) |
| SITE OF BITE    | Upper extrimities | 14.10% (n=11) |
|                 | Lower extrimities | 82.05% (n=64) |
|                 | Other part        | 03.84% (n=03) |
| SEASONS         | Summer            | 38.46% (n=30) |
|                 | Winter            | 08.97% (n=07) |
|                 | Rainy             | 52.56% (n=41) |
| TYPE OF SNAKE   | Neurotoxic        | 43.58% (n=34) |

|                   |               |               |
|-------------------|---------------|---------------|
|                   | Vasotoxic     | 08.97% (n=07) |
|                   | Non poisonous | 47.43% (n=37) |
| TYPE OF FIRST AID | Non medical   | 14.10% (n=11) |
|                   | Medical       | 15.38% (n=12) |
|                   | Torniquet     | 66.67% (n=52) |
|                   | None          | 03.84% (n=03) |

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**DISCUSSION**

In the present study, 76 cases of snakebite were studied from June 2018 to May 2019. In the present study, maximum no. of patients (n=37, 48.68%) bitten were between the age-group of 20-40 years of age which correlated closely with studies conducted by Hati et al.[3] Snake bite was more common in male (67.10%, n=51) in our study, may be contribute to the fact that males ware more involved in outdoor activities.

Among occupation farmer (79.48%, n=62) were most common. As in our country most of the population are of farmer and they do more outdoor field work may contribute for higher snake bite. Study conducted by Warrell et al also showed the higher incidence of snake bite in farmers.[4]

Lower etrimities (82.05%, n=64) were most common site of snake bite and snake bite incidence took place in night time (80.76% n=63) similar to the study conducted by Sharma et al.[5] In the present study maximum numbers (52.56%, n=41) of patients were admitted during rainy season. Naik et al also reported that 60.6% cases occurred between June to November.[6]

Fifty-two patients (66.67%) came with tourniquet application as first aid. In a study conducted by George Watt et al, tourniquet was applied in 94% of patients.[7]

In the present study, 12 (15.38%) patients were admitted within first 6 hrs and forty two (53.84%) patients were admitted within the first 24 hrs. Kulkarni et al. also found that out of the 633 cases, 42 (6.6%) were admitted within 1 hour of bite and 22% of the patients came to hospital after 24 hours.[8]

Out of 76 patients, 37 patients (47.43%) had non-poisonous snake bites and 39 patients (52.57%) had poisonous snake bites. Neurotoxic bite was seen in 34 patients (43.58%). In this study, 100% patients developed ptosis among 34 cases of neuroparalytic bite followed by ophthalmoplegia (70.58%, n=24). Seneviratne et al observed ptosis in 85.7% patients and ophthalmoplegia in 75% of patients of neurotoxic bite.[9] Commonest vasotoxic snake bite manifestation was local bleed (71.42%, n=5) followed by cellulitis (57.14%) which corroborates with the study done by Gaurav et al.[10]

**CONCLUSION**

The present study offers insight into the current status of the snake bite. Population awareness programs regarding prevention, first-aid and the importance of the early transfers to be emphasized.

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