

A Study of Clinical Profile of Patients with Snake Bite

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Abstract: Snakebite is an occupational hazard causing considerable morbidity and mortality worldwide, particularly so in tropical countries like India. Medically Important snakes of India include, Russel's viper, Cobra, Common Krait and Saw scaled viper throughout the country. The mortality due to venomous snakebite in India continuous to be high due to various social, economic and cultural reasons. Hence, present study was accept to create awareness regarding various clinical, environmental, social, and cultural factors which lead to snake bite and its complications.

1. Summary

In our study, 100 patients of snake bite were studied. Out of 100 patients, 70 patients had non-poisonous snake bites and 30 patients had poisonous snake bites. Maximum no. (51) of patients bitten were between the age-group of 31-50 years of age. Maximum incidence of snake bite was found in farmers (58%) than in any other occupation. Males (72%) were bitten more than females (28%) among poisonous bites. Most of the bites (84%) were encountered in rural area. Bites were commonly seen on the lower extremities (68%) than upper (27%). Maximum bites were in the night (62%) than day time (38%) among which 75% were poisonous bites at night and 25% were poisonous bites at day time. Higher incidence of snake bites was found in monsoon (50%) i.e. June to September. Most common complication was respiratory paralysis (16%) as more in neuroparalytic snake bite.

2. Introduction

Snakebite is a common acute medical emergency faced by rural populations in tropical and subtropical countries. In India, there are 216 species of snakes of which only four are venomous snakes. India is the world's heavily affected region, due to its high population density, widespread agricultural activities, numerous venomous snake species and lack of functional snake bite control programs. Poorly informed rural populations often apply inappropriate first-aid measures and vital time is lost before the victim is transported to a treatment centre, where cost of treatment can constitute an additional hurdle.

2.1 Aim and Objectives

Aim

Study of clinical profile of patients with snake bite .

Objectives

Study of demographic profile of patient with snake bite.

3. Material & Method

Source of Data

The study was conducted on patients with established thyroid dysfunction admitted in the medical wards or coming to outpatient department at Sir Takhtasinhji General Hospital, Bhavnagar.

Sample Size: 200 cases

Sample procedure: Observational cross-sectional study

Duration: 2018-2019

Inclusion criteria:

- All patients diagnosed with thyroid dysfunction
- Patients above the age of 12 years

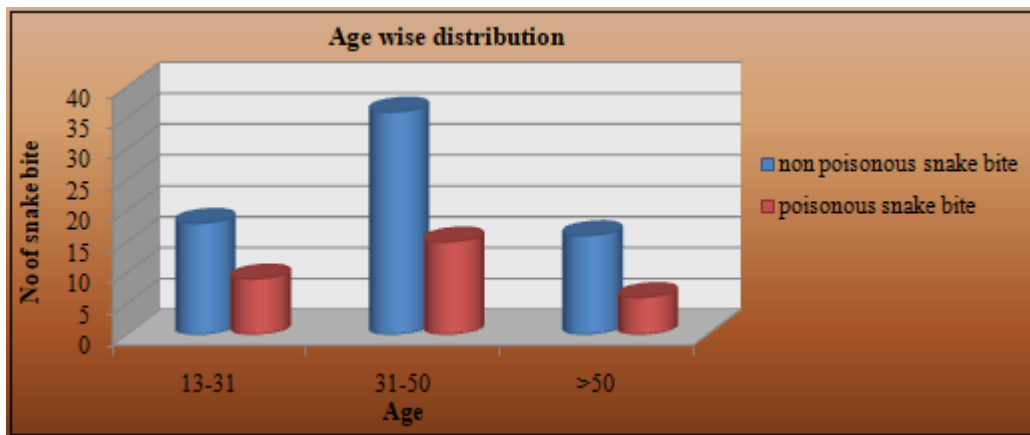
Exclusion criteria:

- Patient not giving consent
- Age < 12 years
- Pregnancy

4. Observation and Result

Table 1: Age Incidence of Non-Poisonous and Poisonous Snake-Bite Patients

Age (years)	Non poisonous snake bite	Poisonous snake bite	Total
13-30	18 (18%)	09 (9%)	27 (27%)
31-50	36(36%)	15 (15%)	51 (51%)
>50	16 (16%)	06 (6%)	22 (22%)
Total	70 (70%)	30 (30%)	100 (100%)

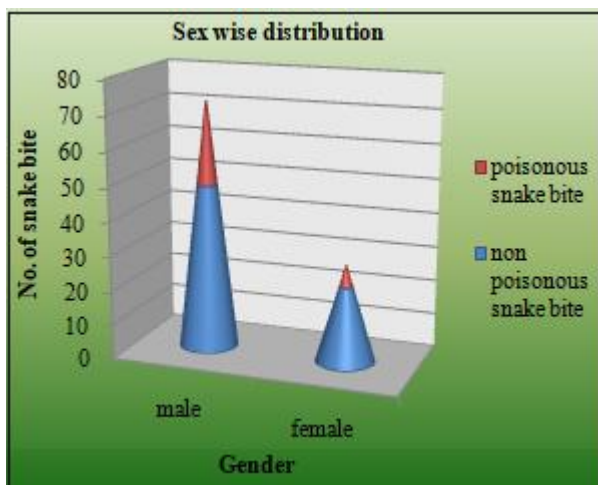


In the present study incidence of snake-bite (non-poisonous & poisonous) was highest in the age group of 31 – 50 years (51%) followed by 13 – 30 years (27%). Mean age is 39.65 years. Age group between 31-50years people are more susceptible, which is active age group involved in various outdoor activities, and so, is more prone for snake bites. Actively working age group has the risk of coming in contact with snakes.

Sex:

Table 2: Sex Incidence Of Non-Poisonous and Poisonous Snake-Bite Patients

Sex	Non-poisonous bite	Poisonous bite	Total
Male	48 (48%)	24 (24%)	72 (72%)
Female	22 (22%)	06 (6%)	28 (28%)

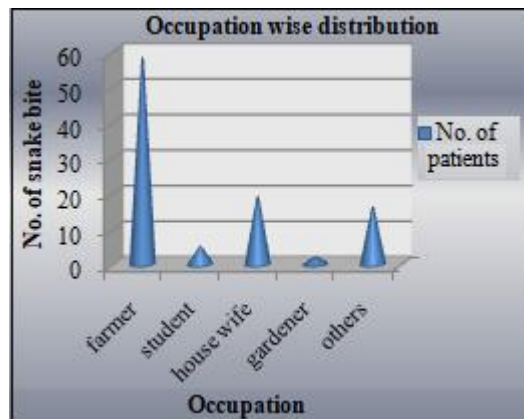


In present study male preponderance was noted (72%) Female was 28%. Male predominance involved in outdoor activities compared to female.

Occupation:

Table 3: Occupational incidence of patients with snake bite

Occupation	No. of patients	Percentage
Farmer	58	58%
Student	05	5%
House-wife	19	19%
Gardener	02	2%
Others	16	16%
Total	100	100%



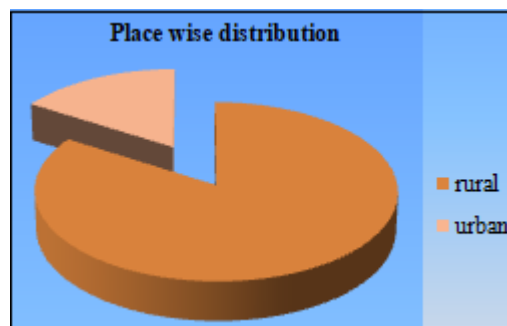
Farmers were the most commonly affected population (58%) compared to patients with other occupations.

These people are more risk to exposure to snakes during their activities. May they work in farm with barefoot. Apart from farm bites, other incidents took place in the house, reflecting people still having the habit of sleeping out of the house and fields due to poor housing conditions band to safeguard their farms.

Relation to Place

Table 4: Incidence of snake bite patients in relation to place

Place	No. of patients	Percentage
Rural	84	84%
Urban	16	16%



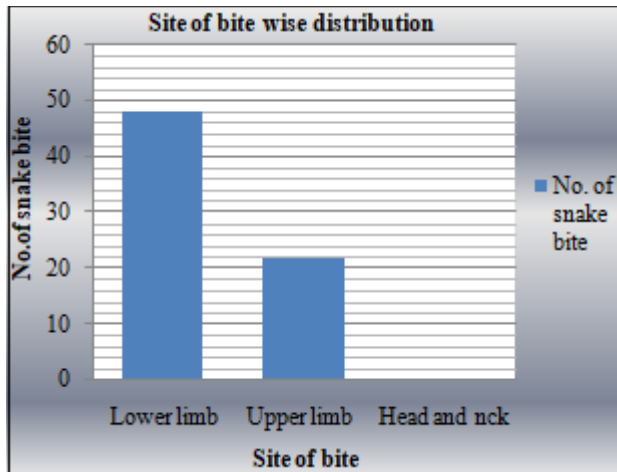
84% of patients were from rural area in the present study.

As the snakes are in abundance in rural areas and people living there come across snakes in their life often due to their living conditions, habits, working and walking bare footed and their occupation and collaborates.

Site of Bite

Table 5: Incidence of snake-bite in relation to site of bite

Site of bite	No. of non Poisonous bite	No. of poisonous bite	Total
Lower limb	48 (48%)	20 (20%)	68 (68%)
Upper limb	22 (22%)	05 (5%)	27 (27%)
Head and neck	00	05 (5%)	05 (5%)
Total	70 (70%)	30 (30%)	100 (100%)



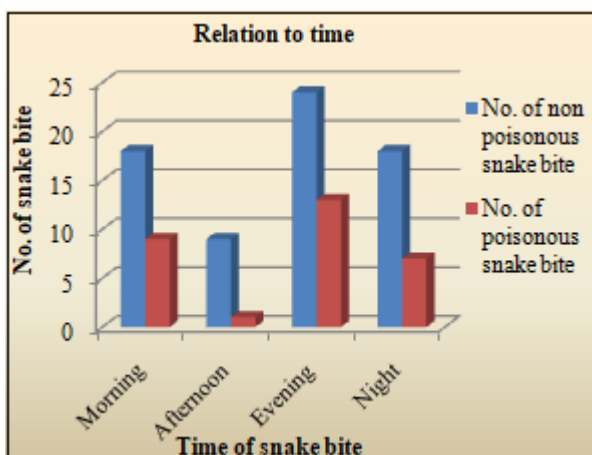
In the present study 68% patients had snake-bite on lower extremities followed by upper extremities (27%), and head & neck (5%).

Snakebite in lower limbs due to predominately determined by accidental or inadvertent contact of the reptile during the activities. While bites on the upper limbs occur because of accidental contact with snakes while trying to hold the grass during harvesting.

Relation with Time

Table 6: Relation of snake-bite with time

Time	No. of non Poisonous bite	No. of Poisonous bite	Total
Morning (6AM to 12PM)	18 (18%)	09 (9%)	28 (28%)
Afternoon (12PM to 4 PM)	09 (9%)	01 (1%)	10 (10%)
Evening (4PM to 8PM)	24 (24%)	13 (13%)	37 (37%)
Night (8PM to 6AM)	18 (18%)	07 (7%)	25 (25%)
Total	70 (70%)	30 (30%)	100 (100%)

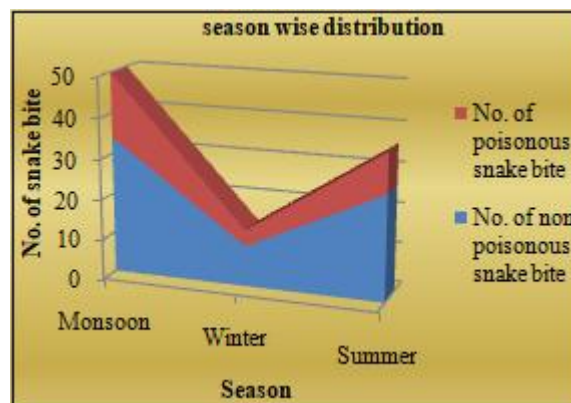


In our study maximum snake bite incidence (62%) had occurred in evening (4 PM to 8 PM) and night (8 PM to 6 AM), suggesting snakes are nocturnally active and are accidentally trodden upon by people walking along paths in the dark, followed by morning (28%) and afternoon (10%).

Relation to Season

Table 7: Incidence of snake-bite in relation to season

Season	No. of non – poisonous bite patients	No. of poisonous bite patients	Total
Monsoon (June to September)	34 (34%)	16 (16%)	50 (50%)
Winter (October to February)	10 (10%)	04 (4%)	14 (14%)
Summer (March to May)	26 (26%)	10 (10%)	36 (36%)
Total	70 (70%)	30 (30%)	100 (100%)



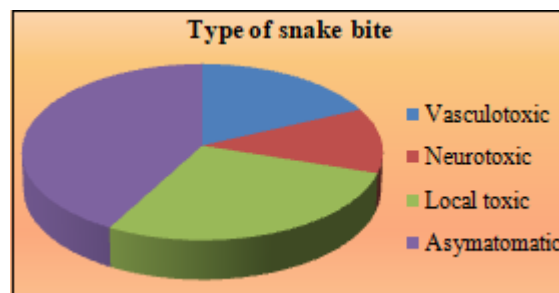
Higher numbers of snake-bite incidence was in monsoon (50%) followed by summer (36%) indicating increase in agricultural activity or seasonal rains, perhaps coinciding with unusual movement and activity by snakes during this months. Lower incidence (14%) of snake-bite was observed during winter in this study suggesting that people are less involved in agricultural activity and snakes are also reclusive during these cold months.

Clinical Presentation

Table 8: Clinical Presentation of Snake-Bite Victim

Clinical presentation	No. of patients	Percentage
NT	18	18%
VT	12	12%
LT	28	28%
Asymptomatic	42	42%
Total	100	100%

(VT = vasculotoxic, NT = neurotoxic, LT = local toxic)



42% of the patients were asymptomatic. 18% of the patients had neuroparalytic manifestations followed by vasculotoxic symptoms (12%).

28% the patients were local toxic presentation.

5. Conclusion

- Snake bite remains a common challenge in the rural and even urban parts of India.
- Having a knowledge of distribution of snake in a particular region, eases the probability of identification of snakes responsible for bite and helps in early treatment.
- Morbidity rate were proportional to time elapsed in administration of ASV. Antisnake venom is the boon for snakebite patients if it is given in appropriate time.
- Making snakebite notifiable could bring about accuracy in statistics which would help in better organization of existing health facilities.
- In the absence of a species specific snakebite diagnostic kit, a definite protocol for treatment of snakebite has to be devised.
- Finally, if the morbidity and mortality rate of snakebite has to be brought down there should be an improvement in general living conditions, education and general awareness of snakebite among people.

References

- [1] Harrison's Principles of Internal medicine, 20th edition; 2019.
- [2] David AW. Guidelines for the clinical management of snake-bites in the South-east Asia region. World Health Organization, Regional Office for South East Asia, New Delhi: 2005. p.1 – 67.
- [3] Warrell DA (2010) Guidelines for the management of snake-bites. Regional Office for South-east asia – Delhi. WHO 37.
- [4] Anjum A, Husain M, Hanif SA, Ali SM, Beg M, et al. (2012) Epidemiological Profile of Snake Bite at Tertiary Care Hospital, North India. J Forensic Res 3:146. doi:10.4172/2157-7145.1000146
- [5] Patil, et al. Clinical Profile and outcome of envenomous snake-bite at tertiary care centre Int. J. Med. Public health [www.ijmedph.org], 2011-10-2011-12, Vol. 1; Issue 4; 28-38.
- [6] Warrell DA. Guidelines for clinical management of snake bites in South East Asian region. SEAMEOTROPMED – Regional Centre for Tropical Medicine, WHO. 1999. Available from: http://www.searo.who.int/LinkFiles/SDE_mgmt_snake-bite.pdf.
- [7] Paul V, Pratibha S, Prahlad KA, Earali J, Francis S, Lewis F. High-dose anti snakevenom versus low dose antisnakevenom in the treatment of poisonous snake bites-A critical study. J Assoc Physicians India 2004; 52: 14 – 7.
- [8] Banerjee RN. Poisonous snakes of India, progress in, clinical medicine' in India. In: Ahuja MS, editor. 1st ed. 1987. pp. 136–177.
- [9] V B Singh et al. Clinical Profile and Complications of Snake BiteEnvenomation: Study from Tertiary Care Centre Bikaner; IJSR; 2015; vol 4; issue 6, pg. 1075-1078.
- [10] B D Gupta et al. Clinical profile, treatment and complications of snake bites; A one year prospective study; JIAFM, 2006: 026 (3); 102 – 104.
- [11] R Krishnappa et al, A study on demographic and clinical profile and outcome of snake bite victims in a tertiary care centre, IJMSPH, 2016, Vol:5, issue 09; 1818 – 1822.
- [12] B Jarwani et al, JETS, 2013, Jul-sep; 6(3): 199 – 202.