

## Epidemiology, Clinical Profile of Snake Bite Cases Treated in theni Medical College Hospital, in South India:

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### Abstract:

**Background:** In India approximately 1 person is affected by Snake bite every 10 seconds. 1 person dies of Snake bite every 2 hours. Similarly, Snake bite is a common problem in and around Theni district. All the four main kind of snakes namely Cobra (*Najanaja*), Common krait (*Bangarusceruleans*), Saw scaled viper (*Echiscarenatus*) and Russel viper (*Daboiarusselii*) are present in this region. Though people are aware of the availability of treatment for snake bites in hospital, still some superstitions prevail in these people. There is also lack of uniformity in treating such cases. This study was done to address these issues.

**Keywords:** Envenomation, Consumption coagulopathy

### I. Aim

To study

1.Epidemiology and clinical manifestations of snake bite

### II. Materials And Methods

This study is a prospective observational study done between April-2016 to September-2016 at Theni GH. All patients who gave history of snake bite, who presented with signs of envenomation and for whom ASV was used were included in this study. As the patient gets admitted all the details as per the proforma (age, occupation, place of bite, clinical examination & clotting time) are recorded and he is followed up during his stay in the hospital..

### III. Conclusion

Snake bite is a common life threatening emergency so as the ASV anaphylaxis. Consumption Coagulopathy, neurotoxicity, and cellulitis warrants ASV administration. Progression to renal failure requires dialysis. Early administration of ASV in adequate amounts definitely saves the patient from complication.

### IV. Result

Snake bite is common in rural areas around Theni. Totally 85 patients were studied in our hospital. Among the 85 snake bites 68 patients (80%) had signs of envenomation. Age groups above 30 are more affected. Male are affected more than female. (Male – 61 Persons 71.7%) (Female – 24 persons 28.2%)

Table 1

Description	Years	With Envenomation	Without Envenomation
Age Distribution	14 - 30	16 Persons (19%)	5 Persons (6%)
	31 - 50	26 Persons (30.5%)	6 Persons (7%)
	> 50	26 Persons (30.5%)	6 Persons (7%)

Males had majority of bites and day time bites in fields are common. Bites in the Lower limb (58 Persons – 68%) is more than the upper limb (27 Persons – 32%)

Table 2

Description	Time in hours	No. of persons
Time of bite	6 am to 6 pm	46 (54%)
	6pm to 6am	39 (45.8%)

Most of the Patients report to hospital between 1 to 6 hrs after snake bite. Earliest reporter is 20 min and one patient reported at 32 hrs.

**Table 3**

Description	Time in hours	No. of persons
Time delay in reporting to hospital	0-1	23 (27%)
	1-6	50 (58.8%)
	6-24	10 (11.7 %)
	>24	2 (2.3%)

64 patients had hemotoxic and 4 had both hemotoxic and neurotoxic manifestation. 48 Persons had local envenomation. 17 Persons had no signs of toxicity. One Patient had Hematuria and one Patient had Hemoptysis. Hemotoxic snake bites are common and renal failure in these patients is around 5 %. Only 4 patients suffered neurotoxicity and none of them required ventilator support.

**Table 4**

Description	Type	No. of persons
Toxicity	Hemotoxic	64 (75%)
	Neurotoxic	4 (4.7%)
	Local envenomation	48 (56.5%)
	No toxicity	17 (20%)

Maximum no. of Bites were in the field during the Day time.

**Table 5**

Description	Place of bite	No. of persons
Places	House	27 (31.7%)
	Field	50 (58.8 %)
	others	8 (9.4%)

Maximum ASV used for a patient is 29 vials and minimum ASV used is 5 vials. Out of 56 patients who received ASV, 10 patients (18%) had anaphylaxis. 3 patients developed AKI (acute kidney injury), 1 was conservatively managed and 2 were referred to GRH, Madurai for hemodialysis. Only 8 Patients needed surgical intervention in the form of I & D and fasciotomy.

**Table 6**

Description	Outcome of Snake bites		No. of persons
Outcome	Discharge	Without surgical intervention	74
		With surgical intervention	8
	Referral		2
	Death		1

## V. Discussion

In India, approximately 1 person is affected by snake bite every ten seconds. 1 person dies of snake bite every 2hrs. Nearly 4,00,000 people are bitten by snakes in a year. Among those 82,000 suffer envenomation and 11,000 die. Rural: Urban ratio is 9:1. Our Government is spending huge sum of money in procuring and applying ASV. Gaurav et al study [1] which was done in western Maharashtra, showed incidence of poisonous snake bite is 50.6% while night time snake bite was 72%. So compared to this study, our study showed increased incidence of poisonous snake bite (80% vs 50.6%), increase in daytime bite (54% vs 27%). Arshad et al study [2] done at Uttar Pradesh showed results of increased Elapidae bite (15.4% vs 4.7%), increased incidence of night time bite (55.1% vs 46%) & increased mortality (8% vs 1.1%). Harshavardhana et al study [4] done at KIMS, Bangalore revealed similar incidence of Viperidae bite (70% vs 73%) with mortality of 4% (vs 1.1%).

Rekha et al study done at Kasturba medical college, Mangalore showed similar incidence of Viperidae bite (73.2% vs 72%) but with increased incidence in night time bite (48.1% vs 46%). The percentage of ASV usage was 69% (vs 65%) with mortality of 3% (vs 1.1%). The study done by Nagaraju et al & Gopinath et al [3] conducted in Coimbatore & Bangalore showed increased incidence of nocturnal snake bite (64% vs 46%) with mortality of 10% (vs 1.1%)

So on comparison with other studies our study showed increased incidence of day time bite. More over incidence of Viperidae snake bite was found to be similar when compared with South Indian studies. Also mortality was low in our study (1%). Prevention is always better than cure. Deaths due to snake bite can be prevented by following simple steps by public and/ or health care provider when they see snake bite.

1. When they are walking at night, they can wear hard soled footwear and make heavy stamping steps .Snakes will sense the vibrations and stay away from that way.
2. Carrying sticks to separate the bushes and piles of stones in order to give time for snakes to move away.
3. Rubbish should be kept away from houses because it may attract rats and in turn snakes.
4. Plants should be grown away from doors and windows, as this may help snakes to climb into the house.
5. In the hospital patient should be well hydrated so as to prevent renal injury.
6. Appropriate antibiotics definitely help in bringing down the local envenomation (i.e. Cellulitis)
7. Early institution of ASV helps in removing the circulating venom and curing the patient
8. Silent killer in snake bite is neurotoxicity. Early identification and treatment is important.

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