

## CLINICO-EPIDEMIOLOGY AND THERAPEUTIC OUTCOME OF SNAKE BITE IN KONASEEMA REGION OF ANDHRA PRADESH

Sai Krishna K<sup>1</sup>, Narasimha Raju A. V<sup>2</sup>, Anand Acharya<sup>3</sup>

<sup>1</sup>3<sup>rd</sup> Year Post Graduate, Department of Medicine, Konaseema Institute of Medical Sciences, Amalapuram, Andhra Pradesh.

<sup>2</sup>Associate Professor, Department of Medicine, Konaseema Institute of Medical Sciences, Amalapuram, Andhra Pradesh.

<sup>3</sup>Professor & HOD, Department of Pharmacology, Konaseema Institute of Medical Sciences, Amalapuram, Andhra Pradesh.

### ABSTRACT

#### INTRODUCTION

Snake bite is a common and frequently devastating environmental and occupational problem, especially in rural areas of tropical developing countries. Snake bite incidence is high in Andhra Pradesh. With the onset of monsoon the incidence of snake bite used to increase.

#### METHODS

Present study is a retrospective study in which all the data of snake bite cases admitted in the Konaseema Institute of Medical Sciences was collected in last two years; details of the patient was obtained from bed head ticket.

#### RESULTS

In two years of data collection, 46 snake bite cases are found as per our record. Out of 46 patients, twenty seven were male and nineteen were female. Maximum twenty two (22) patients were between ages 20 to 40 years. Out of forty six patients, forty four recovered and only two patients died, cause of death was acute pulmonary oedema with cardiac arrhythmia.

#### DISCUSSION

Most of the patients were given ASV (anti-snake venom), out of that only four patients developed reaction to ASV. Most of the patients who have received ASV were recovered. Only two deaths were reported which was due to acute pulmonary oedema with cardiac arrhythmia.

#### CONCLUSION

Awareness and education about snake is required.

#### KEYWORDS

Snake bite, Clinico-epidemiology, Konaseema.

**HOW TO CITE THIS ARTICLE:** Krishna SK, Raju NAV, Acharya A. Clinico-epidemiology and therapeutic outcome of snake bite in Konaseema region of Andhra Pradesh. J. Evid. Based Med. Healthc. 2016; 3(29), 1314-1316.

DOI: 10.18410/jebmh/2016/302

**INTRODUCTION:** Snake bite is a common and frequently devastating environmental and occupational problem, especially in rural areas of tropical developing countries.<sup>(1)</sup> Snake bite incidence is high in Andhra Pradesh. With the onset of monsoon, the incidence of snake bite used to increase. In 2012, around 26,862 cases of snake bite cases were reported in the state out of which 135 persons died. Highest number of cases were reported from Chittoor district and Mahabubnagar district has highest number of deaths.<sup>(2)</sup> The snake species which is most commonly associated with human mortality in India are cobra (*Naja Naja*), krait (*Bungarus caeruleus*), Russell's viper (*Vipera russelli*) and saw scaled viper (*Echis carinatus*).<sup>(3)</sup>

There is regional variation in the incidence of snake bite and type of snake. It depends upon the natural habitat of particular snake and human coming in contact with them. Konaseema region is the delta of Godavari River with good irrigation system. So rice cultivation and fish farming is good. There is dense coconut plantation. So that is a good habitat for cobra and krait. Present study is desired to study the epidemiology, clinical presentation and treatment outcome of snake bite in Konaseema region.

**MATERIAL AND METHODS:** Present study is a retrospective study in which all the data of snake bite cases admitted in the Konaseema Institute of Medical Science was collected in last two years; details of the patient was obtained from bed head ticket. All the information about the patient, clinical presentation, age, sex, site of bite, region from where patients belong, ASV (anti-snake venom) treatment, outcome of treatment were obtained. Before start of the study, written permission from Institutional Ethics Committee was obtained and also permission from medical superintendent was obtained in written format.

*Financial or Other, Competing Interest: None.*  
*Submission 15-03-2016, Peer Review 29-03-2016,*  
*Acceptance 05-04-2016, Published 11-04-2016.*  
*Corresponding Author:*  
*Dr. Anand Acharya,*  
*Professor & HOD, Department of Pharmacology,*  
*Konaseema Institute of Medical Sciences,*  
*Amalapuram, Andhra Pradesh.*  
*E-mail: anand\_kims@yahoo.co.in*  
*DOI: 10.18410/jebmh/2016/302*

**RESULTS:**

Sex	Male	27
	Female	19
Age	0-20 yrs	12
	20-40 yrs	22
	> 40 yrs	12
Locality	Urban	6
	Rural	40
Month of bite	Jan - Apr	8
	May - Aug	28
	Sep - Dec	10
Site of bite	Upper limb	9
	Lower limb	34
	Others	3
Bite mark	Present	40
	Absent	6
Type of snake	Cobra	18
	Krait	8
	Viper	4
	Not identified	10
	Non poisonous	6

**Table 1: Age, sex and epidemiological character of snake bite**

In two years of data collection 46 snake bite cases are found as per our record. Out of 46 patient twenty seven were male and nineteen were female. Maximum twenty two (22) patients were between ages 20 to 40 years. Snake bite incidence was more in rural than urban. Maximum number of bite incidence was between May to August that is during monsoon. Lower limb was major site of bite and in around forty (40) patient bites mark was present. Out of 46 snake bite cases, 18 bites were by cobra (Naja Naja), 10 by krait and 4 by viper, six was non-poisonous and in 10 snake was not identified.

Anxiety	30
Pain	40
Selling	28
Oedema	12
Ecchymosis	10
Bleeding from site	10
Haemorrhagic blister/bleb	8
Ptosis	16

**Table 2: Clinical presentation of the patient -(Local)**

1	Cellulitis	28	
2	Haematological disorder	Change in BT/CT	12
		Haematuria	6
		Blood transfusion given	4
3	Cardiologic abnormalities	ECG abnormalities	10
		Arrhythmia	6
		Myocarditis	4
		CPK changes	6

4	Respiratory abnormality	Dyspnoea	6
		Acute pulmonary oedema	4
5	Nephrotoxicity	ARF	1
6	Shock		4

**Table 3: Systemic manifestation of snake bite**

Total no	46
Recovered	44
Death	2
Cause of death	Acute pulmonary oedema with cardiac arrhythmia

**Table 4: Outcome of the snake bite**

No of PT given ASV	38
Reaction to ASV	4

**Table 5: ASV treatment and reaction to it**

Regarding clinical presentation, pain and anxiety was the most common presentation. There was swelling and oedema, ecchymosis were also common, Bleeding from biting site was in 10 patients. Haemorrhagic blisters were also found in 8 patients. Sixteen patients were presented with ptosis.

Regarding systemic manifestation, cellulitis was the major clinical presentation that is in 28 patients. In haematological presentation, changes in BT/CT, haematuria were present in 12 and 6 patients. Four patients required blood transfusion. Cardiovascular presentation was in the form of ECG abnormality in ten patients, arrhythmia in six patients, myocarditis in four patients, and CPK changes in six patients. Out of all, six patients developed dyspnoea and four developed acute pulmonary oedema. Out of all patients, one developed acute renal failure and four patients went to shock. Around thirty eight patients received anti-snake venom treatment but four developed reaction to it.

Out of forty six patients, forty four recovered and only two patients died. The cause of death was acute pulmonary oedema with cardiac arrhythmia.

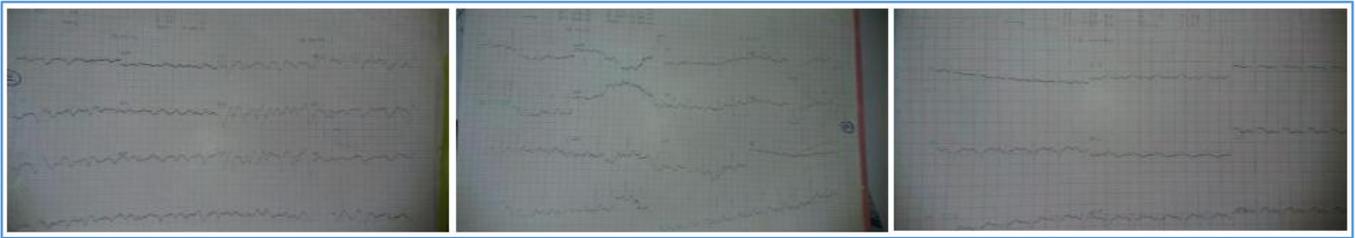
**DISCUSSION:** Snake venom is a complex cocktail of proteins, peptides, carbohydrate, lipids, amines, and other non-protein toxins. Snake venom is mainly characterised as neurotoxic and hemotoxic. The venom enzymes include hydrolytes, hyaluronidase, kininases, DNAase, NAD-Nucleosides, l-amino acid oxidase, phospholipids, A2 peptidase, zinc metalloproteinase, haemorrhagins, etc.<sup>(4,5)</sup>

As per study, there is variation in the age, sex, site of bite, season, and locality. We found that bite incidence is more in male, in active age group, during monsoon season and in rural areas, which is as per other studies, G Brande and Sashidhar et al.<sup>(6)</sup>

Most common type of snake was cobra and most common site of bite was leg.<sup>(6,7,8)</sup> Anxiety and pain was the common symptom followed by swelling and oedema was

also common.<sup>(7,9,10)</sup> Regarding systemic presentation, cellulitis was the most common presentation, followed by

haematological disorder. The patient presented with change in bleeding time and haematuria.



**Figure 1**

Cardiologic presentation was also common.<sup>(11)</sup> Most of the patients were given ASV (anti-snake venom). Out of that, only four patients developed reaction to ASV. Most of the patients who received ASV were recovered, only two deaths were reported which was due to acute pulmonary oedema with cardiac arrhythmia.

**CONCLUSION:** Incidence of snake bite is high in Andhra Pradesh. This may be due to habitat of snake and also a blind faith that snake bite is a curse of god, so the people go to a village healer and they kill valuable time and death rate increases. Awareness and education about snake is required. Preventive measures have been suggested by Dr. H. S. Bawaskar, that is fire wood, cow dung, cattle shed and rubble should be kept away from residential house. Old storage rubble, particularly in an old house, should be handled in full sunlight. Bare-foot walking in darkness, in grown-up grass should be avoided or one should go out with a torch. No attempt should be made to catch snake or to kill it. Killed snake should not be handled; even sheared head may inject venom. Thick electrician gloves with rubber shoes should be worn at the time of handling the Jowar or paddy or sugarcane husk.

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