

A RETROSPECTIVE STUDY OF CLINICOEPIDEMIOLOGY AND TREATMENT OUTCOME OF SCORPION STING IN KONASEEMA REGION OF ANDHRA PRADESH

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ABSTRACT

INTRODUCTION

Scorpions live in warm, dry regions throughout India. They inhabit commonly the crevices of dwellings, underground burrows, under logs or debris, paddy husk, sugar cane fields, coconut and banana. Scorpion stings are primarily due to accidental contact with scorpion. Konaseema region of Andhra Pradesh is delta of Godavari river. Because of good irrigation there is rich cultivation of banana and paddy and there are plenty of coconut plantations, so that is a good habitat for scorpions.

METHOD

Present study is a hospital based retrospective study. All the data related to the scorpion sting in Konaseema Institute of Medical Sciences admitted during Jan 2012 to Jan 2016 has been collected.

RESULT

Total 54 patients of all the age group and both the sexes were included in to the study. Out of 54 patients, 32 were male and 22 were female. Regarding signs of scorpion sting, tachycardia was present in 40 patients, ten patients developed hypertension. Six patients developed arrhythmia. Dyspnoea and convulsion was present in 6 and 2 patients respectively.

DISCUSSION

Scorpion venom is classified as per its structure, mode of action and binding site. Regarding complications of scorpion sting, four patients developed pulmonary oedema and 3 having convulsion. Out of all 54 patients, 53 were recovered and 1 patient died.

CONCLUSION

With the availability of potent vasodilators like prazosin and good ICU facilities, the incidence of death and complication due to scorpion bite has reduced.

KEYWORDS

Scorpion Sting, Clinicoepidemiology, Konaseema.

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INTRODUCTION: Scorpion sting is a public health problem in all parts of world according to most recent studies, seven areas were identified as at the risk, North Sahara Africa, South Africa, Near and Middle East, South India, Mexico and South Latin America. These involve 2.3 billion at risk population.¹ Scorpions live in warm, dry regions throughout India. They inhabit commonly the crevices of dwellings, underground burrows, under logs or debris, paddy husk, sugar cane fields, coconut and banana.² Scorpion stings are primarily due to accidental contact with the scorpions. Konaseema region of Andhra Pradesh is delta of Godavari River. Because of good irrigation there is rich cultivation of banana and paddy and there are plenty of coconut

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plantations, so that a good habitat for scorpions. There are various species of scorpions found in different parts of world, but Mesobuthus Tamulus, the Indian red scorpion is the major species responsible for stings in South India.³



Fig. 1

High incidence of scorpion sting occurs during summer when there is increased agriculture activity. The venom of scorpion is a cocktail of several low molecular weight protein toxins. Multiple toxins may be present in one species of scorpion so capable of producing synergistic effect.^{4,5,6} With

the availability of care, vasodilators and good intensive care facility, fatality has been reduced.^{3,7,8}

MATERIAL AND METHOD: Present study is a hospital based retrospective study. All the data related to the scorpion sting in Konaseema Institute of Medical Sciences admitted during Jan 2012 to Jan 2016 has been collected. All the information about the patient was obtained from the bed head ticket. Before start of the study, a written permission was obtained from competent authority of the hospital. Only those cases were considered for study where scorpion was seen and identified by the patient.

RESULT: Total 54 patients of all age groups and both the sexes were included in to the study. Out of 54 patients, 32 were male and 22 were female. 12 patients were between age group 0-15 years, 32 patients were between 15 to 45 years and 10 were above 45 year of age. Most of the patients were from rural areas than the urban areas and foot is the most common site of sting, leg and hand after that respectively. Incidence of sting was more during May to August, between 12 PM to 12 AM. 42 patients were present with sting mark. From table 2, it is clear that pain was present in 52 patients. 50 patients were anxious, sweating and salivation was present in 42 and 10 patients. 8 patients were presented with vomiting; dyspnoea and palpitation was present in 10 and 6 patients. 8 patients presented with cold extremities, pain in abdomen and visual disturbance was common in four and six patients.

Regarding signs of scorpion sting, tachycardia was present in 40 patients, ten patients developed hypertension. Six patients developed arrhythmia. Dyspnoea and convulsion was present in 6 and 2 patients respectively.

Regarding complication of scorpion sting, four patients developed pulmonary oedema and 3 having convulsion. Out of all 54 patients, 53 recovered and 1 patient died.

		NUMBER	%
Age	0-15	12	22.20%
	15-45	32	59.25%
	45 and above	10	18.51%
Sex	Male	32	59.25%
	Female	22	41%
Locality	Rural	42	77.80%
	Urban	12	22.20%
Site of Sting	Foot	20	37%
	Leg	12	22.20%
	Hand	10	18.51%
	Arm	8	14.81%
	Others	4	7%
Time of Sting	12 PM to 12 AM	36	66.66%
	12 AM to 12 PM	18	33.33%
Month of Sting	Jan to April	8	14%
	May to August	38	70.37%
	Sept to December	8	14.80%
Sting Mark	Present	42	77.80%
	Absent	12	22.20%

Table 1: Epidemiological feature of scorpion sting

Character	Number	Percentage
Pain	52	96%
Anxiety	50	94%
Sweating	42	78%
Swelling At Site	26	48%
Salivation	10	18.50%
Vomiting	8	14.80%
Dyspnoea	10	18.50%
Palpitation	6	11.10%
Cold Extremities	8	14.80%
Pain in Abdomen	4	7.4%
Visual Disturbance	6	11.10%

Table 2: Symptoms of scorpion sting

Character	Number	Percentage
Tachycardia	10	74.0%
Hypertension	10	18.5%
Arrhythmia	6	11.1%
Dyspnoea	6	11.1%
Convulsion	2	3.7%

Table 3: Signs of scorpion sting

Myocarditis	4	7.4%
Pulmonary oedema	6	11.1%
Convulsion	3	5.5%

Table 4: Complication of scorpion sting

Recovered	53	98.1%
Death	1	1.9%

Table 5: Outcome of treatment

DISCUSSION: Scorpion uses its venom for both prey capture and defence, the venom constitutes of mucopolysaccharide, hyaluronidase, phospholipase, serotonin, histamine, enzyme inhibitors and neurotoxic peptides.^(5,9) Scorpion venom is classified as per structure, mode of action and binding site. Each class consists of several peptides. Long chain toxin effecting sodium channels have been subdivided primarily in two major subtypes, α and β toxin.^{10,11} These toxins are responsible for clinical manifestation of scorpion sting.

In our study, we have found that sting is more common in age group 15 to 45 years and male, that is 59% each. Incidence was high in rural areas and during agriculture season. Foot was the most common site. Sting mark was present in most of the patients.^{7,12,13,14}

Pain and anxiety was the most common presentation that is in 96% and 94% of the patients respectively. Sweating, salivation and sweating at the site of the bite was other presentation which was 42%, 26% and 18% respectively.^(15,16) Dyspnoea (18.5%), palpitation (6%), cold extremities (8%) was also the presentation in some patients. Pain in abdomen and visual disturbance was also present, which was also found in the study of others.

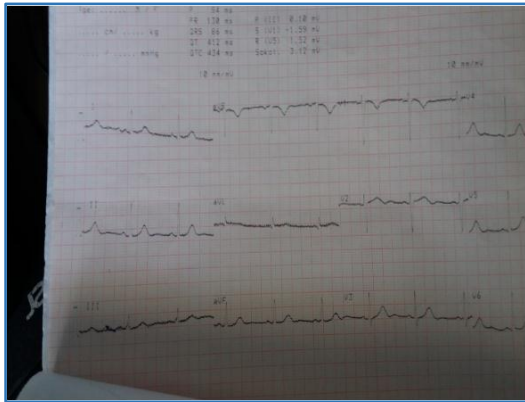


Fig. 2

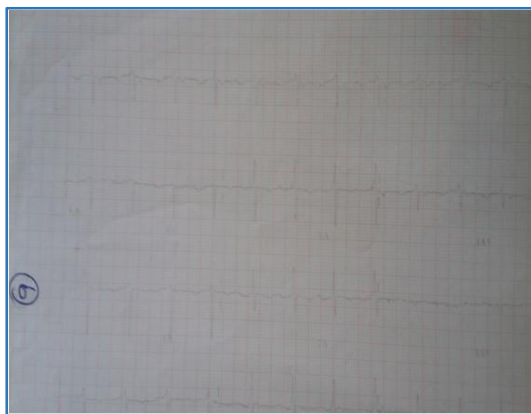


Fig. 3

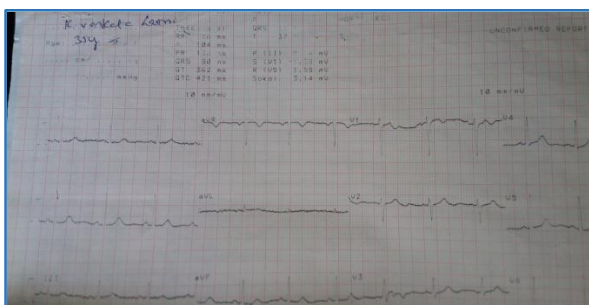


Fig. 4

In our study, we found that a good number of patients presented with cardiovascular manifestation like tachycardia 74%, hypertension in 18.5% and arrhythmia in 11.10%. Myocarditis was another cardiovascular manifestation which was present in 7.4% of patients which was similar to the study of Bawaskar et al.⁷ Convulsion was present in 5.5% patients which is similar to study of other authors.^{15,16} Out of 54 patients, one patient died due to myocarditis and acute pulmonary oedema.

CONCLUSION: With the availability of potent vasodilators like prazosin and good ICU facilities, the incidence of death and complications due to scorpion bite has reduced. Now, scorpion antivenom and early treatment has reduced the death rate.

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