



Original Research Article

Clinical Profile and Outcomes of Scorpion Sting Envenomation Cases in a Tertiary Care Centre in Northern India

Authors

Saxena Piyush¹, Pathak Yashaswi²

¹Associate Professor, Department of Medicine, Motilal Nehru Medical College, Allahabad

²Senior Resident, Department of Medicine, Motilal Nehru Medical College, Allahabad

Abstract

Introduction: *scorpion sting is an acute emergency condition commonly occurring in tropical countries like India. This study was conducted to study the pattern of presentation and outcome in scorpion sting envenomation cases in a tertiary care centre in Northern India.*

Materials and Methods: *This study was conducted on 52 cases admitted to a tertiary care centre between January 2017 and June 2018. Relevant history and physical examination was conducted on all the cases and the outcome was noted.*

Results: *Of the 52 cases, 32 (61.54%) were under 12 years of age and 34 of 52 cases (65.4%) were male. The most common clinical presentation was local pain (88.46%), dyspnea and tingling at site of sting. Acute Pulmonary edema was found in 34.62% and hypotension in 11.5% of cases. Seizures occurred only in 2 of the 52 cases. 4 of the 52 cases died during hospital stay, all had acute pulmonary edema and shock and 3 of these 4 cases had presented to the hospital 6 hours after the sting.*

Conclusion: *Scorpion sting is an acute life-threatening emergency with age, acute pulmonary edema, shock, seizures and time to presentation being major contributors to mortality.*

Introduction

Scorpion sting envenomation is an acute life threatening time limited medical emergency. Most of the children with severe envenomation die due to the toxin, whereas it is a relatively less serious condition in adults. Case fatality rates of 3-22% were reported among children hospitalized for scorpion stings in India, Saudi Arabia and South Africa.¹

After a sting the venom enters the circulation very rapidly, with a tissue distribution half life of 5-6 minutes and peak tissue concentration is reached in 37 minutes.² It induces complications in almost

all the organ systems. In Asia epidemiological data on scorpion stings is scarce. India is the most affected, with a reported incidence of 0.6%. Higher incidence of scorpion sting occurs during hot months attributed to increase in agriculture activities.³ The present study was done to observe the pattern of presentation and also the outcome in scorpion sting envenomation in patients who were admitted at tertiary care center.

Material and Methods

This is a prospective study conducted on all scorpion sting cases admitted to the cardiac care

unit of a tertiary care centre between January 2016 to July 2017. Relevant history and physical examination was conducted for all patients. The history included age and sex of the patient, the duration since scorpion sting and the chief complaints. Clinical examination included pulse rate, blood pressure, blood sugar levels, local examination for tenderness and swelling, relevant cardiac and respiratory system examination to evaluate for evidence of pulmonary edema and evidence of priapism.

Results

A total of 52 cases of scorpion sting were included in the study. The age group of the cases ranged from 4 years to 32 years, majority under 12 years of age (61.54%). Majority of cases, i.e. 34 of 52 (65.4%), were males. Maximum cases were admitted in the months of May to September, which is during the hot and humid climate. All the cases presented to the hospital within 12 hours of the scorpion sting. The clinical features of the cases are summarized in table 1. The most common symptom among the cases was pain at the site of sting that was present in 88.46% of the cases followed by dyspnea in 42.31% and tingling at the site of scorpion sting in 32.69% cases. Seizure occurred in 2 of the 52 cases and hypoglycemia also occurred in only 2 cases. Out of the 22 cases who had dyspnea, pulmonary edema was found in 18 of them being the most common complication. Cold extremities were seen in 73.08% of the cases. Hypertension was seen in only 6 of the 52 cases being more common than hypotension that was seen in 11 of the 52 cases. 10 of the 34 male cases also had priapism

Table 1: Clinical features of Cases

Clinical features	Number of Cases (n=52)	Percentage (%)
Pain	46	88.46
Tingling	17	32.69
Tachycardia	34	65.38
Dyspnea	22	42.31
Cold Extremities	38	73.08
Hypotension	6	11.5
Hypertension	11	21.54
Priapism	10	19.23 (29.41% of males)

Pulmonary edema	18	34.62
Seizures	2	3.84
Hypoglycemia	2	3.84

Of the 52 cases that were admitted, 4 cases died while the remaining 48 cases were relieved and discharged. All the 4 cases were 6 years of age or less and all of them had pulmonary edema with shock. Both the cases that had seizures died. 3 of the 4 cases that died presented to the hospital 6 hours after the scorpion sting.

Table 2: Outcome of the cases

Outcome	Number of cases (n=52)	Percentage
Relieved	48	92.31
Death	4	7.69

Discussion

In our study, scorpion sting occurred more commonly among males, in the pediatric age group and during the summer and rainy season. These findings are similar to those found in a study conducted by G Ramesh et al⁴ in which 81.8% of the cases were males and 72.7% of cases occurred in the months of may to august.⁴ In another study conducted by R Pol et al⁵, most cases were males with peak occurring during summer months. The most common symptom among the cases in this study was pain at the site of sting, which was also true in the study by G Ramesh et al⁴, in which 91% cases presented with pain. In the study by Kumar et al⁶, 96% of cases had pain at sting site while only 72% of cases in study by Pol et al⁵ had local pain or irritability. Cold extremities, an evidence of peripheral circulatory failure, were found in 73.08% of the cases. Similar prevalence of this feature was also found in studies conducted by Kumar et al⁶ (72%) and by Pol et al⁵ (85%). However, in the study conducted by Ramesh et al⁴, only 18% of cases had this feature. Priapism was seen in 29.41% of the male cases in this study. In a study by Arivoli et al⁷, 30% of the male cases had priapism. Acute Pulmonary edema (APE) as a complication was seen in 34.62% of cases. Pol et al⁵ found APE in 18.2% cases while in the study by Biswal et al⁸

30% of cases had APE. Mortality rate in this study was 7.69% with 4 of the 52 cases dying while in hospital. All these 4 cases had pulmonary edema with shock. Similarly in study by Pol et al⁵ the mortality rate was 7.5% and Biswal et al⁸ reported death in 4% cases. In these studies as well APE and shock were major contributors to the mortality. Another major contributor to mortality in the study conducted by Biswal et al⁸ and Pol et al⁵ was time since scorpion sting. In both these studies cases that presented to the hospital 6 hours after the sting had higher risk of mortality. Similarly in our study 3 of the 4 cases who died had presented to the hospital 6 hours after the sting.

Conclusion

Scorpion sting envenomation is an acute life threatening condition especially in the pediatric population. It is more common in hot and humid climates. Acute pulmonary edema, shock and encephalopathy, as evidenced by seizures are major contributors for mortality in a case of scorpion sting envenomation. Timely treatment of a case, especially in the younger patients, can help in reducing complications associated with this condition.

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