

BRIEF REPORT

Report of 267 Cases of Scorpion Bite Referring to an Emergency Department during One Year

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Abstract

Scorpion bite is a common health problem in many parts of the world, including the Iran's tropics. There are thousands of cases and a number of deaths due to scorpion bite every year in the country. The present study aims to provide further data regarding the details, complications and outcomes of scorpion bite cases referring to Razi Hospital, Ahwaz, from March 2011 to April 2012. 267 patients (56.3% females) with a mean age of 35.2±15.8 years were included in the study. The most common genus of scorpion involved was *Hemiscorpius* (69.3%) and the most frequent body part involved was the lower limb (38.9%). The frequency of hemolysis-induced renal insufficiency and death after scorpion bite were 1.9% and 1.1%, respectively. Of all the factors evaluated in this series only the old age was associated with higher possibility of renal insufficiency ($P<0.001$).

Key words: Bites and stings; scorpion, hemolysis; environmental; poisoning

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Introduction:

Scorpion bite is a common health problem all over the world, including the Iran's tropics (1, 2). In Iran, Khouzistan and Hormozgan Provinces are regions with a lot of scorpions and there are thousands of reports each year about scorpion bite with a number of related deaths (3). In rural areas of Khouzistan scorpion envenomation is the fourth common cause of death (4). The scorpions in Iran belong to three families, 18 genera, 29 species and 5 subspecies (5). One study in Khouzistan reported *Mesobuthus*, *Androctonus*, and *Hemiscorpius* are responsible for 89.1% of bites (6). Of all these families Scorpionidae and Buthidae are the most important ones; in this context, *Hemiscorpius* is responsible for 95% of deaths and *Androctonus Crassicauda* (black scorpion) is the most dangerous type (7, 8). Considering what discussed above, it is necessary to increase the knowledge of the health and treatment system about the details of scorpion bite, complications and outcomes of patients in these regions. Therefore, the present study aimed to report

the characteristics of scorpion bite in patients referring to the emergency unit of a hospital in Ahwaz city.

Methods:

The present case series has evaluated the victims of scorpion bite, who had been hospitalized in Razi Hospital, Ahwaz city, from March 2011 to April

Table 1: Details of scorpion bite victims [↑](#)

Particulars	Number (%)
Location of incident	
City	196 (73.5%)
Village	71 (26.5%)
Scorpion family	
<i>Hemiscorpius lepturus</i>	185 (69.3%)
<i>Androctonus crassicauda</i>	26 (9.7%)
<i>Mesobuthus eupeus</i>	3 (1.1%)
Not known	53 (19.9%)
The body part involved	
Head and neck	31 (12.1%)
Trunk	33 (12.8%)
Abdomen	1 (0.4%)
Upper limb	88 (34.2%)
Lower limb	100 (38.9%)
Multiple	4 (1.6%)

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Table 2: Demographic data of patients with acute renal insufficiency [↑](#)

Variables	Cases				
	1	2	3	4	5
Sex	Female	Female	Male	Female	Male
Age	28	19	30	79	86
Location	City	City	City	Village	Village
Involved body part	Upper limb	Lower limb	Trunk	Lower limb	Head and neck
Scorpion family	Hemiscorpius	Not known	Hemiscorpius	Androctonus	Hemiscorpius
hospitalization (days)	7	1	6	5	4
ICU ¹ (days)	5	1	6	5	4
Need for dialysis	+	-	-	+	+
Need for blood	+	-	-	-	-
Anti-venom	+	+	+	+	+
Outcome	Death	Discharge	Discharge	Death	Death

¹ Intensive care unit**Table 3:** Details of laboratory results of patients with acute renal insufficiency [↑](#)

Laboratory Tests	Cases				
	1	2	3	4	5
Urine protein (mg/dl)	3	0	0	0	1
Urinary WBC ¹ (1/mm ³)	10	2	12	42	60
Urinary RBC ² (1/mm ³)	6	2	4	12	8
Hematuria	4+	1+	1+	3+	3+
Creatinine (mg/dl)	3.1	1.7	1.7	2.3	1.8
BUN ³ (mg/dl)	164	19	17	28	16
Platelet (×1000)	103	203	169	105	98
PTT ⁴ (/second)	37	31	43	52	58
PT ⁵ (/second)	18	12	12	17	17
WBC (/mm ³)	24.3	14.9	5.2	17.8	19.1
Hemoglobin (mg/dl)	7.9	8.2	11.6	9.8	9.2

¹ White blood cell; ² Red blood cell; ³ Blood urea nitrogen; ⁴ Partial thromboplastin time; ⁵ Prothrombin time

2012. Data collected from the patients files, retrospectively, consisted of age, gender, location of the incident, the body part involved, the type of the scorpion involved, duration of hospitalization, clinical symptoms and signs, laboratory findings, type of the treatment rendered and patients' status at discharge. Data was registered in the database designed to this end and analyzed with SPSS 18. After providing a descriptive analysis, to examine the relationship between variables chi-square test was used. P value < 0.05 was considered as significant.

Patients:

During the period of study, 267 patients (56.3% females) were referred to the emergency unit due to scorpion bite. The mean age of the patients was 35.2±15.8 years (range: 14-86). [Table 1](#) presents details about the incidents. The most common type of scorpion involved was Hemiscorpius (69.3%). 188 (73.1%) bites had occurred in limbs (lower limb, 38.9% and upper limb, 34.2%) and only four

(1.6%) patients had been received multiple bites in the limbs and trunk. The patients had been hospitalized for a mean period of 3.0±1.5 days (range: 1-11). 22 patients had been hospitalized to the intensive care unit (ICU) for a mean period of 4.3±2.2 days. 76 (28.4%) patients simultaneously had a positive urinary test tape and a urinary RBC≤ 5/mm², as an indicator of hemoglobinuria. Finally, five (1.9%) patients had suffered from hemolysis-induced acute renal insufficiency during the hospitalization period and three (1.1%) of them had required dialysis ([Tables 2](#) and [3](#)). No significant relationship was found between the type of involved scorpion and the chances of hemolysis and incidence of hemoglobinuria and renal insufficiency (P>0.05). In addition, of the factors of age, gender, the body part involved, anemia and leukocytosis, only age had a significant relationship with renal insufficiency (P<0.001). Finally, eight patients had required injection of blood products after hemodialysis. All the patients



had received anti-venom and 50.7% antibiotics and 43.6% corticosteroids. Finally, 245 patients (91.8%) had been discharged without any specific complications and three (1.1%) died. 19 (7.1%) patients had left the hospital against medical advice before completion of diagnostic and therapeutic procedures.

Discussion:

The most common type of scorpion in these series was Hemiscorpius and the most common body part was the lower limb. The frequency of renal insufficiency and mortality due to the scorpion bites were 1.9% and 1.1%, respectively. Of all the factors evaluated in this study, only the old age was associated with a higher incidence of renal insufficiency. Of course, it should be pointed out that sufficient data was not available in relation to other possible concomitant diseases in these victims. The mean ages of victims reported did not the same in different studies (9-12). Given the fact that hospital evaluation in the present study admits only adult patients, the mean age of 35 years seems to be acceptable. In terms of sex distribution, location of the bite, and the mortality rate this study is consistent with previous one(4, 13).

Preparation and implementation of an educational program to increase people's awareness about the importance and the necessity of attention to scorpion bite might help decrease the incidence. It appears that some precautions can decrease the number of scorpion bite cases, including repairing and closing cracks and splits in buildings, keeping wood logs and chips, and motes away from homes and rural residential areas as well as avoiding sleeping outdoors.

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Conflict of interest:

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Author's contribution:

All authors have substantial contribution in designing, data gathering and analysis, revising and final

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