



Venomous Animals; Are They Important in Iran?

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Dehghani R.* PhD

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ABSTRACT

Many reports have indicated the medical importance of animal poisons in Iran. The significance numbers of Iranians are injured from high endemic to sporadic, by venomous snakes, scorpions, wasps, bees, fire and velvet ants, spiders and backswimmer bugs, so their nuisance prevention is an important task.

Keywords Bites and Stings; Animal, Poisonous

*"Social Determinants of Health Research Center" and "Department of Environment Health, School of Health", Kashan University of Medical Sciences, Kashan, Iran

Correspondence

Address: Faculty of Environment Health, Social Determinant of Health Research Center, Kashan University of Medical Sciences, Qotb-e-Ravandi Boulevard, Kashan, Iran
Phone: +98 3155540111
Fax: +98 3155540111
dehghani37@yahoo.com

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[1] Iran has the second rank of snake bite and scorpion sting in the world [2] Environmental toxicology [3] Medical entomology for students of health and medicine [4] Repartition continental des scorpions [5] Epidemiology of scorpionism: A global appraisal [6] Scorpion sting prevention and treatment in ancient Iran [7] Introducing *Compsobuthusmatthiesseni* (Birula, 1905) scorpion as one of the major stinging scorpions in Khuzestan, Iran [8] Study of scorpionism in Kashan in central Iran [9] Scorpion sting in Iran: A review [10] Toxic effects of scorpion, *Hemiscorpiuslepturus* (Hemiscorpiidae) venom on mice [11] Epidemiological and clinical survey of scorpionism in Khuzestan province, Iran (2003) [12] Snake bite [13] Snake-bites: Appraisal of the global situation [14] The global burden of snakebite: A literature analysis and modeling based on regional estimates of envenoming and deaths [15] Epidemiology of venomous and semi-venomous snakebites (Ophidia: Viperidae, Colubridae) in the Kashan city of the Isfahan province in Central Iran [16] Incidence of Snake Bites in Kashan, Iran During an Eight Year Period (2004-2011) [17] Epidemiological Profile of Snakebite in Iran, 2009-2010 Based on Information of Ministry of Health and Medical Education [18] Ten years of snakebites in Iran [19] The identification of bacterial flora in oral cavity of snakes [20] Contribution to the distribution of spiders with significant medical importance (Araneae: *Loxosceles* and *Latrodectus*) in Iran, with a new record for the country [21] Faunestic study of ants with emphasis on the health risk of stinging ants in Qeshm Island, Iran [22] Medical importance of fire ant *Pachycondylasennaarensis* (Hymenoptera: Formicidae) in Iranshahr and Sarbaz Counties, southeastern of Iran [23] Fauna aquatic insects in sewage maturation ponds of Kashan University of Medical Science 2005 [24] Fauna and habitat of aquatic arthropods of Kashanin2010 [25] Spider bite (*latrodectism*) in Mashhad, Iran [26] First record of the Mediterranean Recluse Spider *Loxoscelesrufescens* (Araneae: Sicariidae) from Iran [27] Spiders of medical importance in the Asia-Pacific: Atracotoxin, latrotoxin and related spider neurotoxins

Venomous animals are found in most orders of the Animal Kingdom and in the majority of habitats, both terrestrial and marine. As Iran's climate is more arid and semiarid, cold blood animals, e.g. snakes and arthropods such as scorpions, are abundant. It is estimated that Iran has about 250,000 cases of bites and stings of venomous animals per year, which is the second ranked in the world after Mexico [1]. Scorpions and snakes are the most important poisonous animals of Iran [2, 3].

Scorpions

Scorpions are an evolutionarily old group of animals and more than 2,000 species have been recognized around the world [4]. About 1.2 million cases of scorpions' stings are reported all over the world per year, which about 3250 cases lead to deaths. According to Chippaux & Goyffon, the mean rate of sting incidences in the world per year per 100,000 of population is about 17.14 cases [5]. Scorpions are among the most dangerous venomous animals in Iran [6]. These arthropods sting a large number of people all over the country every year, especially in warm and humid regions of South and South-West, resulting in clinical complications and death. Therefore, the mean of scorpion sting incidences in Iran is higher than the global average [7, 8]. During 2002-2011, 433,203 victims of scorpion stings had referred to health centers in all 31 provinces of Iran. The incidence of scorpion stings in 100,000 of populations was reported from 54.8 to 66.0 during 2002-2011 [9-11].

Snakes

Venomous snakes are distributed in most parts of the world, which are a serious threat to public health, especially in the areas where they are most abundant [12]. It has been estimated that annual snakebite incidences are about 5.4 to 5.5 million around the world, which caused about 400,000 amputations and 20,000 to 125,000 deaths [13, 14]. Many species of venomous snakes are found in Iran [15]. The most medically important species that are responsible for the most snakebite incidences in Iran belong to the Viperidae and the Elapidae families [16, 17]. At least, one kind of venomous snake is found in each of 31 provinces of Iran and many provinces have more than one venomous species. As a result,

snakebite is a considerable health hazard in Iran, especially in the rural area of South and South-West. From 2002 to 2011, 53,787 cases of snakebites were reported by medical centers in Iran. The annual incidence of snakebites in 100,000 of population varied from 4.5 to 9.1 cases and the average number of annually deaths were 6 to 12 [18-20].

Other bugs

Being stung by hornets, yellow jacket, fire ants, wasps, velvet ant and bees were most common type of bites in Iran. However, as people are not afraid of their stings, they do not go to the health centers and no recorded data are available. Following the sting of hymenopterans, death cases have happened rarely [2, 3, 21-24], but some dying cases has been reported. However, spider bites are considered more toxic, because more cases have been fatal [23-27]. Nuisance of the venomous animals have a seasonal pattern and mostly take place during the warmer months of the year. Therefore, formation of professional reinforcement staff and regular visits to high-risk regions during this time can significantly reduce the risk of venomous animal injuries.

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