

Webinar

Wednesday, June 30, 2021 ~ 12:00 pm PDT/3:00 pm EDT

The objectives for this webinar are:

1. Discuss the epidemiology of scorpion stings in Arizona
2. Discuss the biology of scorpions
3. Discuss the treatment of scorpion stings.



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Toxicology, Emergency
Medicine, Pharmacology and
Pharmacy Practice.**



**Justin Schmidt
Author, The Sting of the
Wild & creator of the
Schmidt sting pain index**



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Improving Access to Quality Medical Care Webinar Series

Presented by
Southwest Telehealth Resource Center,
Arizona Telemedicine Program



Webinar Tips & Notes

- When you joined the webinar your phone &/or computer microphone was muted
- Time is reserved at the end for Q&A, please use the **Chat function** to ask questions. Questions will be answered at the end of the presentation
- Please fill out the post-webinar survey
- Webinar is being recorded
- Recordings will be posted on the ATP website
 - <http://telemedicine.arizona.edu/webinars/previous>



Objectives: Inform healthcare workers on the:

- Epidemiology of scorpion stings in Arizona
- Biology of *Centruroides sculpturatus*
- Treatment of *C. sculpturatus* envenomation



Introduction



Arizona's rugged desert landscape harbors many venomous animals including a small nocturnal scorpion, *Centruroides sculpturatus*, whose venom can cause severe neuromotor disturbance.

I will tell you a little about the study, Justin will provide useful information about the biology of the scorpion and Mazda will talk about the extremely effective treatment for scorpionism.

Scorpionism study: Amer J
Med: 2021 Feb 22:S0002-
9343(21)00106-6. doi:
10.1016/j.amjmed

- We analyzed 4398 calls of scorpion stings to the Arizona Poison and Drug Information Center (APDIC) in Tucson over a period of 3 years, from January 2017-December 2019.
- The most common complaints among callers were pain at the sting site in 88.9% and local numbness in 62.2%. Detailed clinical information was obtained from 593 calls from an HCF.



Age distribution of scorpion sting victims (from all calls to APDIC) and number of victims receiving antivenom.

Age Group	Total Calls	Received Antivenom
0-4	395	76
5-9	346	27
10-19	476	8
20-29	506	2
30-39	575	6
40-49	421	4
50-59	485	5
60-69	467	7
70-79	303	5
80+	139	5
Unknown age	285	0
Total	4398	145

Symptoms and signs of victims from 593 calls from healthcare facilities.

- Neuromotor signs consistent with *C. sculpuratus* envenomation included nystagmus in 163 (27.5%), hypersalivation in 91 (15.3%), and fasciculations in 88 (14.8%).

Clinical Signs	(N=593)	Received Antivenom (N=145)
Nystagmus	163 (27.5)	103 (63.2)
Agitation	121 (20.4)	78 (64.5)
Excess secretions	91 (15.3)	73 (80.2)
Fasciculations	88 (14.8)	54 (61.4)
Tremor	49 (8.3)	33 (67.3)
Tachycardia	20 (3.4)	16 (80.0)
Acidosis	3 (0.5)	3 (100)
Myoclonus	5 (0.8)	3 (60.0)
Respiratory depression	3 (0.5)	3 (100)
Rhabdomyolysis	3 (0.5)	3 (100)

Related clinical effects of scorpion envenomation for different age groups of victims (in years) reported from a health care facility.

Clinical Effects	0-4	5-9	10-19	20-39	40-59	60-79	80+
Excess secretions	52	9	4	2	2	4	
Agitation	49	19	2	2	4	1	1
Nystagmus	47	22	7	8	6	9	4
Fasciculations	23	15	3	4	1	6	2
Tremor	17	8	1	1	3	1	2
Vomiting	8	3		1			
Flushing	7	2					
Other respiratory	6						
Tachycardia	6	5	1	1	3		

Related clinical effects of scorpion envenomation for different age groups of victims (in years) reported from a health care facility (continued).

Clinical Effects	0-4	5-9	10-19	20-39	40-59	60-79	80+
Tachycardia	6	5	1	1	3		
Diaphoresis	4	1					
Acidosis	3						
Edema	3						
Hyperventilation	3		1			1	
Rhabdomyolysis	3						
Bronchospasm	2						
Dyspnea	2						
Respiratory depression	2						

Antivenom treatment

- Antivenom (Anascorp®) was administered to 145 patients. Most were children <5 years old (76 or 54.4%); 27 (18.6%) were 5-9 years and 42 (30.0%) were ≥10 years of age. About half, 79 of 145 (54.5%) of victims who received antivenom met the APDIC recommended use criteria.

Biology of
Centruroides
sculpturatus: Justin
O. Schmidt

